

Chromatic Saturation/Completion in Bach Works Associated with Literary Ideas: A Further Study

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INTRODUCTION

In 1946, Arnold Schoenberg wrote,

The secrets of the Netherlands . . . were based on a complete recognition of the possible contrapuntal relations between the seven tones of the diatonic scale. . . . But the remaining five tones were not included in these rules, and, if they appeared at all, did so apart from the contrapuntal combination and as occasional substitutes. Bach, who knew more secrets than the Netherlands ever possessed, enlarged these rules to such an extent that they comprised all the twelve tones of the chromatic scale. Bach sometimes operated with the twelve tones in such a manner that one would be inclined to call him the first twelve-tone composer.¹

Then, in 1950, Schoenberg wrote,

I used to say, “Bach is the first composer with 12 tones.” This was a joke, of course. I did not even know whether somebody before him might not have deserved this title. But the truth on which this statement is based is that the Fugue No. 24 of the first volume of the *Well-Tempered Clavier*, in B minor, begins with a *Dux* in which all twelve tones appear.²



Figure 1. Bach: Fugue in B Minor, *The Well-Tempered Clavier*, I, mm. 1–3

Edward Green takes up this example, then argues that “Bach quite often organized his music so that crucial points of structural articulation correspond to points at which the final constituent of the chromatic aggregate appears,”³ providing examples from various genres. It is important to note that Green often has to include pitches from accompanying lines to get the full aggregate (the recitative BWV 140/2 is one exception).

A striking example not mentioned in Green’s study is Bach’s instrumental setting of the chorale “Durch Adams Fall” in the *Orgelbüchlein* (BWV 637), which covers all twelve tones in the first phrase. The chorale’s text—an explication of the doctrine of original sin—evidently served as the impetus for such striking chromaticism. We will explore the connection between this literary theme and chromatic completion in greater detail below.

¹Arnold Schoenberg, *Style and Idea*. Edited by Leonard Stein, with translations by Leo Black. Berkeley: University of California Press, 2000, 117.

²Schoenberg, *Style and Idea*, 393.

³Edward Green, “Bach and Chromatic Completion: A New Field for Analytic Research,” *Bach Notes* 9 (Spring 2008):



Figure 2. Bach: Chorale Prelude “Durch Adams Fall,” BWV 637

In discussing the arioso section of the alto recitative in Cantata 167, “Ihr Menschen, rühmet Gottes Liebe,” Detlef Gojowy notes that Bach pushes the boundaries of tonal thinking by increasing chromaticism (using unorthodox counterpoint) until he achieves a “twelve-tone field” (*Zwölftonfeld*) in measure 17, allowing the chromaticism then to diminish to a resolution at the end. It seems clear that Bach is coloring the word “Buß” (repentance) while obscuring the path to E in the context of Jesus leading lost sinners to the Kingdom of Heaven.⁴

Text painting: “Repentance” is clothed in highly chromatic language.

17. A# B G# A C G F D#

reich in wahr-er Buss’ in wahr-er Buss’ zu lei-ten.

All 12 tones in m. 17.

E F# C# D

F#7 Bm E7 Am D7 GM FM Em E major

Figure 3. Chromatic Completion in BWV 167/2, m. 17

⁴Detlef Gojowy. “Ein Zwölftonfeld bei Johann Sebastian Bach? Beobachtungen am Rezitativ BWV 167, Satz 2, Takte 13–19,” *Bach Studien* 5 (1975): 43–48. The recitative text moves from John the Baptist preparing the way for Jesus, to Jesus preparing the way and leading lost sinners to the kingdom of heaven. The relevant text is: “Hierauf kam Jesus selber an, die armen Menschenkinder und die verlornen Sünder Mit Gnad und Liebe zu erfreuen und sie zum Himmelreich in wahrer Buß zu leiten. (Then Jesus himself arrived, to gladden the poor children of men and all lost sinners with grace and love, and to lead them to the kingdom of heaven in true repentance.) Gojowy is reluctant to assign a particular meaning to the chromatic completion in m. 17 because of an alternate text in another version, apparently referring to an autograph in W. F. Bach’s hand. See https://www.bach-digital.de/receive/BachDigitalSource_source_00004064: “Der Stimmensatz stammt von einer Aufführung W. F. Bachs in der Marienkirche Halle (wo Friedemann zwischen 1746 und 1764 Organist und Director musices war), wofür der Text der Kantate verändert wurde (abgedruckt in: I/29 KB, S. 16f. nach Hausers Abschrift D-B Mus.ms. Bach P 1159 VIII, Faszikel 8). Johann Christian Berger (1702–71) war Kantor der Marienkirche.” (The set of parts originates from a performance by W. F. Bach in the Marienkirche in Halle (where Friedemann was organist and Director musices from 1746 to 1764), for which the cantata was revised, printed in the critical report of the *NBA*, I/29, p. 16f., following Hauser’s copy D-B Mus.ms. Bach P 1159 VIII, fascicle 8. Johann Christian Berger (1702–71) was cantor at the Marienkirche.) See also the 1916 collection catalog *Musikhistorisches Museum von Wilhelm Heyer in Köln. Katalog von Georg Kinsky, Konservator es Museums, Vierter Band, Musik Autographen*. There, no. 159 (p. 104) lists the alternate (more general) text in an autograph by W. F. Bach.

While all of these examples have intervening notes, Eric Altshuler and Noam Elkies reported in 2009 that they had found 14 instances in the A minor Prelude of Bach's *Well-Tempered Clavier II* where chromatic completion is accomplished without any intervening pitches.⁵ Whether this was a calculated design on Bach's part is debatable, since the 12-tone aggregates do not commence with the beginnings of motives. Probably more significant is the descending chromatic tetrachord that characterizes the entire prelude. In any case, one of the measures that Altshuler and Elkies cite (m. 22) does not appear to qualify: in the span from the C# to the C, five pitches are repeated: D, E, F, G#, and A. Neighboring measures do not appear to qualify either.

Notwithstanding some of the aforementioned studies, a more likely impetus for chromatic completion in Bach's works lies in the relations between texts (whether stated or implied) and their musical settings. Before getting to more of Bach's works, let us review some perspectives and practices related to chromaticism during Bach's time.

Figure 4. Bach: Prelude in A minor from *WTC II* with Uninterrupted 12-Tone Sets

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PRAELUDIUM XX.

B.WV. 846.

⁵Eric Altschuler and Noam Elkies, "12-Tone Bach," *Musical Times* 150/1908 (Autumn 2009): 5.

17

20

Not D, E, F,
G#; A are
repeated.

23

Oder:

26

29

31

32

VIEWS ON CHROMATICISM IN BACH'S TIME: KIRNBERGER

In the second volume of *Die Kunst des reinen Satzes in der Musik*, Johann Philipp Kirnberger discusses harmonizing Lutheran chorales in modal versus major-minor style, providing examples by his former teacher, J. S. Bach. To demonstrate the newer style of harmonization, Kirnberger uses Bach's setting of "Das alte Jahr vergangen ist." Here we see Bach incorporating all twelve tones of the chromatic scale in the first seven measures.⁶

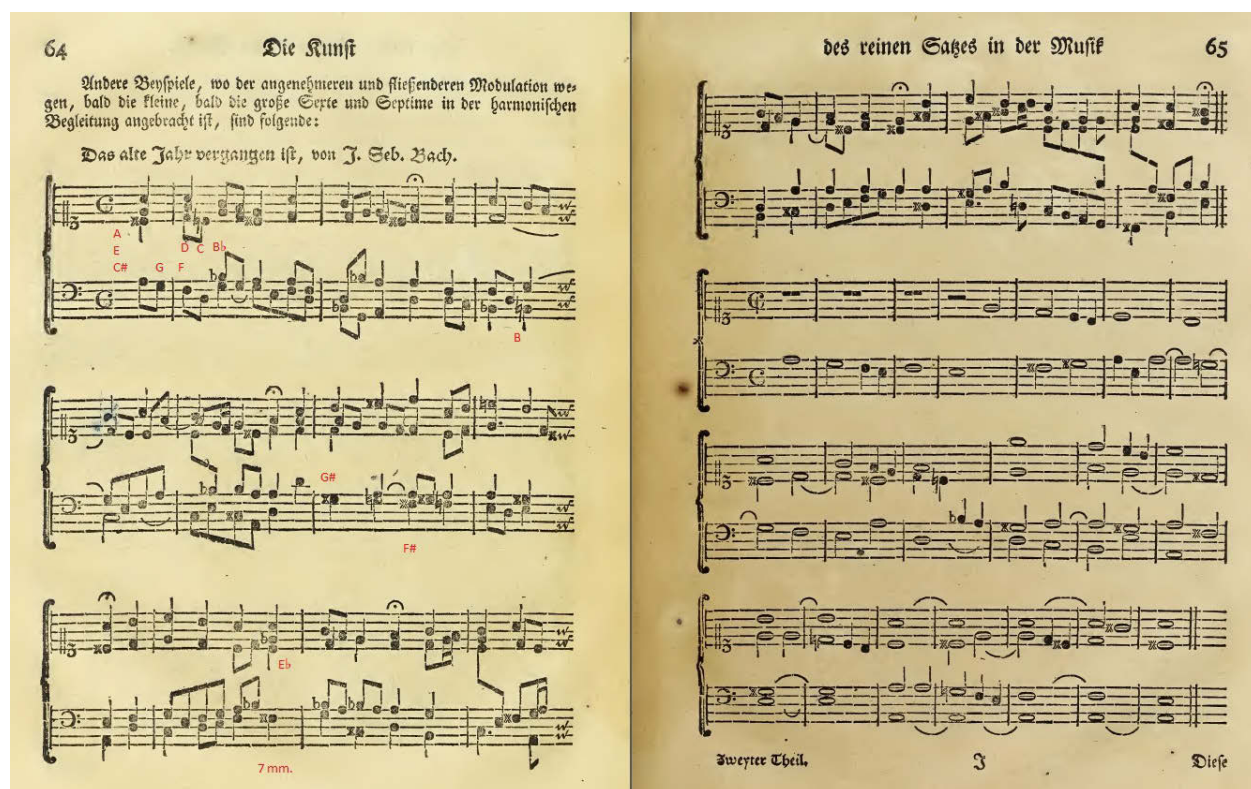


Figure 5. Bach's Chorale Harmonization of "Das alte Jahr vergangen ist" in Kirnberger, *Die Kunst des reinen Satzes in der Musik*⁷

In his discussion of the newer style,⁸ Kirnberger notes that each of the twelve scale degrees can now serve as a tonic in either major or minor mode, yielding twenty-four scales in all. Since tempered tuning produces different-sized intervals in the various tonalities, Kirnberger notes that each tonality has a distinct character, making

⁶Kirnberger does not mention the inclusion of all 12 tones. See Kirnberger, *Die Kunst des reinen Satzes in der Musik*, vol. 2, part 1 (called "Zweiter Theil, Erste Abtheilung") Berlin and Königsberg, 1776, pp. 64–65. The phenomenon is mentioned by Eric Chafe, *Analyzing Bach Cantatas* (Oxford: Oxford University Press, 2000), 73. While E \flat occurs in m. 7, its enharmonic equivalent (D \sharp) appears in m. 10. Chafe understands the chorale (and, by extension, Bach's chromaticism) as a "metaphoric interpretation of the old year as the embodiment of humanity's recognition of its sinful nature." See Chafe, *Analyzing Bach Cantatas*, 2000, 82. Chafe notes that Bach explores this chorale's theme further in his setting for organ in the *Orgelbüchlein* (Chafe, 84–86).

⁷Eric Chafe notes, "Kirnberger's version of this setting differs slightly from that published by him and C. P. E. Bach in their posthumous collection of chorales by J. S. Bach, and in the penultimate measure the latter version contains a passing-note of b-flat as well." See Chafe, *Analyzing Bach Cantatas*, p. 254, note 4.

⁸Starting on page 67.

transposition inadvisable.⁹ He then divides the major and minor tonalities according to their degree of purity,

⁹Kirnberger, *Die Kunst*, vol. 2, part 1, p. 71. In Mattheson's *Exemplarische Organisten-Probe* (Hamburg, 1719), the author argues against transposition for this very reason. He demonstrates what happens to a tune in different keys by reproducing it (in letters) in 12 keys with the numerical proportions for each tone (see pp. 74–79). Interestingly, Mattheson did not support equal tempered tuning here, giving various reasons why he deems it impractical. See sections CXLV (p. 99) to CLXIII (p. 111). In his later writings, however, he supported it. See *Grosse General-Baß-Schule* (1731). The noted Dutch harpsichord builder, Willem Kroesbergen, notes, "In his *Beschützte Orchestre* of 1727 [sic, should be 1717], Mattheson declares the equal temperament calculated by Neidhardt as the best. And in 1727 Mattheson promotes Meckenheuser's equal temperament as well. Finally, in his *Grosse General-Baß-Schule* (1731) Mattheson writes that most organs are still in unequal temperament but goes on saying (quote): 'personally I believe that the equal temperament is the best.'" See Willem Kroesbergen, "18th Century Quotations Relating to J. S. Bach's Temperament," (Cape Town: PDF, 2nd ed., retrieved October 14, 2020. The latter statement occurs in *Grosse General-Baß-Schule* CCXXXIII (p. 144), following a paragraph in which Mattheson raises concerns about its immediate applicability. He ends with: "Wie das nun zu vollziehen / kann ich noch nicht absehen: ob ichs gleich hertzlich wünsche." (Now, how to implement that I cannot foresee, even if I heartily desire it.) In the following passage, which affirms equal tempered tuning, he notes the roadblocks:

Und das ist eben die Schwierigkeit / so man/ bey der ersten Auflage / in diesem Stück gefunden hat. Das probetur, welches ich damahls verlangt bezog sich gar nicht auf Trichter / Löffel oder umgekehrte Sprach - Röhre / damit man meiner spottet: (denn ich / für meine Person / war / und bin / völlig überzeugt / daß die gleiche Temperatur die beste ist / habe auch nie daran gezweiflet) es [das probetur] bezog sich nicht auf Violdigamben und Lauten / sondern eines Theils auf das gar weite Aussehen / welches diese grosse Aenderung / bey so viel tausend Orgeln und theuer erbauten Wercken / in der gantzen Welt antreffen muß; andern Theils auf die Vorsteher der Kirchen / welche unmöglich zu den grossen Kosten zu bewegen seyn werden; drittens auf die eigensinnigen Orgel-Bauer selbst / die sich nicht das geringste vorschreiben lassen / und alles gemeinlich viel besser wissen; viertens auf die Sänger und Instrumentalisten / welche die Tage ihres Lebens zu der ungleichen Temperatur gewehnet sind / und bey Einführung einer gleichen Stimmung / ohnfehlbar eine Zeitlang falsch singen und spielen würden; fünfften auf die Zuhörer / die ihre Ohren noch nicht nach den Zahlen temperirt haben / und erst ein Dodecachordon zulegen müssen / dafern sie von der Sache Nutzen ziehen wollen: denn die Gewohnheit ist auch hiebey die andre Natur. Auf dieses alles bezog sich mein probetur, mein verlangter Versuch: und er beziehet sich noch darauf.

And that is exactly the difficulty, which one found in the first edition [i.e., Mattheson's *Exemplarische Organisten-Probe*, see CLXIII, p. 111]. The experiment [probetur], which I suggested at that time, was not related to funnel / spoon, or to speak in reverse, straws, so that I am mocked with it (because, as for me, I was and am fully convinced that equal temperament is best, have also never doubted it); it [my probetur] did not concern violas da gamba and lutes, but rather, first, [it concerned] the very broad implications, which this great change would have for so many thousands of organs and expensively constructed entities [instruments] in the whole world; second, church officials, who would not be favorably disposed to accept the great costs, third, the obstinate organ builders themselves, who do not accept the smallest of dictates, and generally know better about everything, fourth, the singers and instrumentalists, who have been used to unequal temperament all their lives, and who would doubtlessly sing and play incorrectly for a while upon the institution of equal tuning, fifth, the listeners, whose ears have not yet become tempered to the new numbers and first to be supplied with a [copy of Glareanus's] *Dodecachordon*, in case they want to profit from the matter, for in this habit is also the other nature. My probetur, my requested attempt, related to all of this, and it still does.

As for Werckmeister, Rudolf Rasch notes three stages of development: "In his early writings (1681–1691) Werckmeister discussed explicitly only unequal temperaments. He described two of them (1691 nos. III and IV) in detail, of which one (no. III) is for the peripheral keys (many sharps or flats), the other one (IV) for the central keys (few sharps or flats). In his middle writings (1697–1698) both equal and unequal temperaments are discussed. Equal temperament is judged best for that exceptional circumstance in which all keys are of equal importance. Unequal temperament is judged preferable for the common condition in which the central keys are the prevailing ones. In his later writings (1702–1707) equal temperament is brought to the fore as the only reasonable thing, because of the unrestricted possibilities for transposition and enharmonic changes. The term *wohltemperirt* is now here defined as a technical term; more important still, it occurs never as a single word, but always as a verb with qualification. If it is given a specific meaning, it must be something like 'appropriate tuning.' But what is appropriate in tuning is something that depends on the music in hand." See Rudolf Rasch, "Does 'Well-Tempered' Mean 'Equal-Tempered'?", in Peter Williams, ed., *Bach, Handel, Scarlatti: Tercentenary Essays* (Cambridge, 1985), 299–300."

resulting in three classes for the major keys and three for the minor ones.¹⁰ Kirnberger does not mention solmization at all in this passage, just that the old system had six scales, the new one twelve in two versions: major and minor. However, as noted above, he advocates harmonizing chorales in modal style. Continuing to stress modal theory for composition and performance in this way was a factor in prolonging its prominence in German writings.¹¹

INCREASED CHROMATICISM: PART OF THE EVOLVING MUSICAL LANGUAGE (SENSE OVERTAKING RATIO)

Increased chromaticism was part of the evolving harmonic language of the time, where the ear (“sense”) was overtaking mathematical proportion (“ratio”) as arbiter of aesthetic value. Traditionalists (e.g., Andreas Werckmeister, Johann Heinrich Buttstett, Johann Gottfried Walther, and Johann Joseph Fux) still adhered more fully to the what Eric Chafe calls the “musico-theological” inherited from earlier times. They saw their craft as being grounded in the immutable mathematical design of Creation.¹² While these ideas were not entirely rejected by progressive theorists (e.g., Johann Mattheson and Johann David Heinichen), they were now held more loosely, because they preferred to focus on music’s expressive, rhetorical potential.

Whereas Mattheson made a distinction between sounding and non-sounding Harmony, Werckmeister and Buttstett understood the sounding and non-sounding aspects of Harmony to be an integrated whole, and they believed their view to be the correct scriptural interpretation of harmony. It led them also to believe that well-proportioned music composed on earth would last into eternity.”¹³

Traditionalists believed that the modal system (with its method of placing the semitone by means of Guidonian solmization)¹⁴ defined music totally and eternally, thus the adage “Mi et Fa sunt tota musica.” (“All music

¹⁰Pp. 72–76.

¹¹Julie Pedneault-Deslauriers, “The French Path: Early Major-Minor Theory from Jean Rousseau to Saint-Lambert.” *Music Theory Online*, 23/1 (2017), accessed 19 October, 2020.

¹²For example, Buttstett wrote, “Die Music . . . hat ihr Fundament von dem Schöpfer selber / ja sie weist uns die Beschaffenheit des Himmels und der Erden / und der gantzen Natur / da wir sehen daß Gott alles in ordentliche / deutliche Proportionen, Zahl / Maaß / und Gewicht gesetzet hat / woraus wir sehen / daß Gott ein Gott der Ordnung sei” (Music has its foundation from the Creator himself, yes, it shows us the constitution of heaven and earth, and of all nature, where we see that God has set everything in clear proportions, number, measure, and weight, from which we see that God is a God of order) See *Ut, mi, sol, re, fa, la, tota musica et harmonia aeterna* (Erfurt, 1716).

¹³Ruth Tatlow, “Theoretical Hope: A Vision for the Application of Historically Informed Theory,” *Understanding Bach* 8:57. Buttstett devotes an entire chapter to music’s eternal future existence and, after citing some biblical parallels, he writes, “Ich meine dieses sey allein genug zu beweisen / daß wir im Himmel mit eben denen *Sonis* so hier in dieser Welt gebräuchlich musicieren werde.” (I think this alone is enough to prove that we will make music in heaven with the same *Sonis* used here in this world.) See Buttstett, p. 174.

Pieter Bakker argues that Tatlow has misunderstood Werckmeister and Buttstett: “To her it’s about how compositions will live on in heaven. The perfect proportions in Bach’s compositions have to do with the making of a perfect and transferable work, Tatlow thinks. But Buttstett and Mattheson are not at all talking about the continued existence of certain works, but about the continued existence of musical theory, with Mattheson remarking that Buttstett wants to force God to build his compositions on the syllables *ut-re-mi-fa-sol-la* of Guido of Arezzo [Mattheson, *Beschützte Orchestre* of 1717, p. 474; Bakker incorrectly cites page 379]. This discussion has nothing to do with the possible existence of a written composition as an *opus perfectum et absolutum*.” (Pieter Bakker, “Postmodern Numbers. Ruth Tatlow on Proportions in the Written Music of Johann Sebastian Bach,” translated by Pleuke Boyce, Stichting Kunst en Wetenschap [Schraad, The Netherlands, 2015], PDF, downloaded 6 October 2020, p. 7.) Compare Buttstett, p. 174–75. See also Bakker, “Modern Numbers. Source References in the Numerical Research of Bach’s Musical Structures,” translated by Pleuke Boyce, Stichting Kunst en Wetenschap (Schraad, The Netherlands, 2015), PDF, downloaded 6 October 2020, p. 17 with f.n. 81 on pp. 30–31: “In the sources there is only talk of the theoretical basis of music which would continue.”

¹⁴Pieter Bakker argues that Werckmeister opposed solmization when he wrote in his *Musikalische Paradoxal-Discourse*, (Quedlinburg, 1707), pp. 45, 78–79: “Was dieses in der Music vor die Lernenden eine Tortur / und Labyrinth gewesen / haben schon vor 100. Jahren viel vornehme und wohlgelehrte Musici beklaget. . . . Es ist doch von der Zeit die Solmisation, nemlich das *ut, re, mi*, etc. wegen eingeüßener starcken Gewohnheit / noch eine zeitlang im Gebrauch blieben / biß etwa zu Ausgang des 15. Seculi.” (For a hundred years, many leading and well-educated musicians have bemoaned what a

is summed up in the notes mi and fa.”¹⁵ The placement of mi and fa determined the mode, which were solemnized by means of three hexachords (one on C [hexachordum naturale], a second on F [hexachord molle], and the third on G [hexachord durum]. This view contrasted with the more modern view that “total music includes all the tones and semitones” (see Mattheson’s comment below), or “all music is contained in the major and minor modes.”¹⁶

ARGUMENTS BETWEEN TRADITIONALISTS & PROGRESSIVES: BUTTSTETT VS. MATTHESON

The arguments between traditionalists and progressives sometimes got heated. Most famous was the Mattheson-Buttstett controversy. George Buelow summarizes it in the *New Grove* entry on Buttstett.

Buttstett’s greatest significance to music history is contained in his remarkable published disagreement with Johann Mattheson. In *Ut, mi, sol, re, fa, la, tota musica et harmonia aeterna* (1716), Buttstett attacked the first major treatise of Mattheson, *Das neu-eröffnete Orchestre* (Hamburg, 1713). In that work Mattheson gave wide-ranging musical information which he hoped would serve to educate the *galant homme*, the composer and musician, the amateur as well as professional, who sought to learn everything about the new art of music—that is, the 18th-century styles of French and Italian secular music. As such, Mattheson’s work was the first important treatise in Germany to sever all connection with traditional German theory of the past. Buttstett, however, stood on the opposite side of the musical world, and believed that only in the past could musical truth be found. For this reason, he condemned almost every facet of *Das neu-eröffnete Orchestre*: first and foremost, as the title to his work implies, he derided Mattheson’s disparagement of Guido of Arezzo and his system of solmization. He criticized the abandonment of the Greek modes, the glorification of the ear as the sole judge of musical questions, and what he thought were Mattheson’s incorrect concepts of musical styles. In sum, he believed that Mattheson was leading musicians to chaos by abandoning the rules of music which had been valid for more than 100 years. Buttstett, however, was no match for his famous Hamburg colleague who in 1717 published *Das beschützte Orchestre*,¹⁷ in which he countered most of Buttstett’s arguments with devastating satire and often brilliant logic. Music historians generally have failed to evaluate correctly this extensive polemic drama (Blume is a notable exception). For what occurs in the volumes by Mattheson and Buttstett is the last struggle of German conservative, traditional music theory, with its noble and decisive 17th-century heritage inevitably defeated on the battleground of the 18th century, where new music from Italy as well as France had compelled such writers as Mattheson to formulate an entirely new theoretical approach to the understanding of their art.”¹⁸

Similarly, Walter Schenkman writes,

torture and labyrinth this was in music for the learned. . . . Nevertheless, solmization, namely the ut, re, mi, etc., remained in use for a time, because of prevailingly strong habit, until about the end of the 15th century.”) See Bakker, “Postmodern numbers,” p. 13 with f.n. on p. 23, with Werckmeister quotation translated by Melvin Unger.

¹⁵The phrase “is found in numerous music theory works, especially in student instruction manuals.” (Christoph Wolff in *Neue Bach Ausgabe* 8/1, *Kritischer Bericht*, 36, cited and translated in Mary Greer, “Masonic Allusions in the Dedications of Two Canons by J. S. Bach: BWV 1078 and 1075,” *Bach* 43/2 (2012): 13. David Ledbetter writes, “In one sense this can be taken melodically, that the hexachord and its mutations up from Gamma-Ut provide all the materials of music; in another it can have the more “modern” meaning that all music is contained in the major and minor modes. It is in this “modern” sense that it is cited by many writers in Bach’s environment. Bach himself seems to have had all of these meanings in mind in the *Canon super Fa Mi*, a 7 of 1749 (BWV 1078).” David Ledbetter, *Bach’s Well-tempered Clavier: The 48 Preludes and Fugues* (New Haven, Conn.: Yale University Press, 2002), 118.

¹⁶See full quotation by Ledbetter in previous note.

¹⁷Mattheson, Johann, *Das beschützte Orchestre, oder desselben zweyte Eröffnung: worinn nicht nur einem würcklichen galant-homme, der eben kein Professions-Verwandter, sondern auch manchem Musico selbst die alleraufrichtigste und deutlichste Vorstellung musicalischer Wissenschaften wie sich dieselbe vom Schulstaub tüchtig gesäubert eigentlich und wahrhaftig erhalten ertheilet*. . . (Hamburg, 1717).

¹⁸See also Joel Lester’s summary of the controversy in “The Recognition of Major and Minor Keys in German Theory: 1680–1730,” *Journal of Music Theory* 22/1 (Spring 1978): 87–95.

The Mattheson-Buttstedt controversy addressed itself specifically to the question of whether Guido's time-honored system of solmization—with its cumbersome mutations from one hexachord to another—could possibly have any validity at all in an age that was prepared (as Mattheson claimed it was) to give up the old church modes altogether, in favor of his “24 new modes.” And Mattheson further publicized his controversy by calling upon a dozen or more representative composers of the period to give their views on the matter.¹⁹

Mattheson's disdain for solmization is no more apparent than when he refers to “the irksome, hated, stinking solmization, along with the rest of the erroneous rubbish from the Erfurt pedal-stomper [i.e., the Erfurt organist Buttstedt]”²⁰

TEMPERED TUNING SYSTEMS: ADVANTAGES DESPITE IMPERFECTIONS IN RELATION TO THE UNITY

Still, both camps embraced the practical benefits of tempered tuning systems, with their inevitable imperfect, “earthly” compromises. For example, Werckmeister wrote,

God himself, according to his omniscient counsel, has fashioned nature / in a manner that everything strives toward the unity / and finds pleasure in it.²¹

All proportions that diverge from the musical intervals are imperfect in music and impure; all temperaments diverge from that, ergo: all temperaments are imperfect and impure.²²

The fact that our keyboards and many other instruments cannot be as pure as the numerical proportions require, and that we must make do with imperfection in all modulations, God knows best, and it seems that the All-Knowing One, who set all elements and the entire world, yes, the seasons of the year, into a temperament, also ordained it thus in music, not without reason, so that we will thereby acknowledge our imperfection and the imperfection of everything earthly.²³

Both camps adhered, more or less, to the old idea that intervallic proportions were foundational. The closer to a unity, the more perfect an interval was considered to be. The farther removed from a unity, the more imperfect and

¹⁹Walter Schenkman, “The Influence of Hexachordal Thinking in the Organization of Bach's Fugue Subject.” *Bach* 7/3 (July 1976): 7. Experts from whom Mattheson solicited opinions included ten to whom he had previously dedicated *Das Beschuetzte Orchestre* (1717) and whom he mentioned again in *Exemplarische Organisten-Probe* (Theoretical Section, pp. 116–17). They were Johann Joseph Fux, Johann David Heinichen, Georg Fridrich Händel, Christian Ritter, Johann Philip Krieger, Johann Krieger, Johann Kuhnau, Johann Christopher Schmidt, Georg Philipp Telemann, and Johann Theile. To these Mattheson now added Georg von Bertouch, Augustin Stricker, and Reinhard Keiser. Mattheson published their responses, along with editorial commentary, in *Criticae musicae II* (1725), under the heading: “The *Orchestre*-Chancellery, or testimonials, letters, declarations, investigations, etc., from the former judges in the *Orchestre* litigation.” The section begins on page 179 and continues for over 100 pages. For a summary, see Walter Schenkman, “Portrait of Mattheson, the Editor, Together with His Correspondents,” *Bach* 25/2 (Fall-Winter 1994): 63–90.

²⁰Mattheson, *Beschützte Orchestre*, 286–87: “die nichtige / verdrießliche / verhassete / stinckende Solmization, nebst dem übrigen unrichtigen Quarck des Erfurtischen Pedal-treters”

²¹“Gott selber nach seinen Allweisen Rath die Natur also zugerichtet habe / daß alles nach der Gleichheit strebe / und sich daran belustige.” Werckmeister, *Musicae Mathematicae Hodegus Curiosus* (Frankfurt and Leipzig, 1686), p. 69.

²²“Alle proportiones, so von den numeris musicalibus abweichen / die sind in der Music unvollkommen / und unrein; alle Temperaturen weichen davon ab / Ergo: sind all Temperaturen unvollkommen und unrein.” Werckmeister, *Musicae Mathematicae*, p. 58.

²³“Daß wir aber unser Clavier und viel andere instrumenta so reine nicht haben können / als es die proportional Zahlen erheischen / und mit einer Unvollkommenheit in allen Modulationen uns behelfen müssen / ist Gott am besten bekandt / und scheint / daß es der Allweise / welcher all Elementa und die gantze Welt / ja die Zeiten des Jahres . . . in eine Temperature gesetzet hat / in der Music auch nicht ohne Ursache also geordnet / unsere and ues gantzen irrdischen Wesens Unvollkommenheit daraus zuerkennen.” Werckmeister, *Musicae Mathematicae*, p. 61.

“earthly” it was. Werkmeister, wrote, “Thus also this fundamental rule is established in music: The closer something is to a unity or unanimity, the more perfect und comprehensible it is; the farther removed from unanimity, the more imperfect and confused it is.”²⁴ Buttstett wrote similarly.²⁵ For Mattheson, “purity” was determined by what the ear would accept. Turning his attention to the contrasting mathematical ratios for like intervals in different keys, he writes, “In the meantime, we will say adieu to our ears for a short while.”²⁶ “Good mathematical proportions certainly do not determine everything and do not always produce beauty in all things.”²⁷ Each tone represents nothing more than a particular number of beats per time span.²⁸ As for chromaticism, Mattheson writes, “So we see that the chromatic genus is not *ficta* but an entity naturally grounded in nature and antiquity, which, if handled correctly, can bring harmony to a (passably acceptable) degree of perfection, though not the most perfect, which is not to be found on earth.”²⁹

VIEWS ON CHROMATICISM: BUTTSTETT VS. MATTHESON

While Buttstett accepted chromaticism, he argued that it could be accomplished within the old diatonic system:

The other genus, namely chromaticism (the author [Mattheson] says) signifies a disposition in which the octave (which had no more than 7 intervals in the diatonic genus) has nothing but 12 semitones, and which now requires the *Diaesis* or double sharp. All of this is very good and I have nothing against it. But it is also true that we can arrive at these 12 divisions of the octave and enjoy them. All the while, I note that the ancients had the *Semitonia exaltatione vocis*; consequently they had these divisions also in the diatonic genus, which can be demonstrated here with old hymns [*Hymnis*] and church songs [*Kirchen-Gesänge*].³⁰

In Johann Mattheson’s counter response (the *Exemplarische Organisten-Probe* of 1719),³¹ he argues that the 12 chromatic pitches should be treated “democratically”³² within a diatonic framework, and he provides musical examples showing that they can appear in a single phrase. A short “song” in C minor (p. 83), which employs all 12 chromatic pitch classes, is followed by a 35-note simplification (p. 84), which he then examines to tabulate how many instances of each note there are, indicating their respective roles in the mode: tonic, chorda elegatior, etc. (CXXXV, p. 84).³³ All twelve tones appear in just five measures.

²⁴“Dannhero auch dies Regul in Musicis pro fundamento gesetzt wird: Je näher der Unitat oder Gleichheit / je vollkommener und Begreiflicher ein Ding ist / je weiter der Gleichheit abgelegen / je unvollkomener und verwirreter es ist. Werckmeister, *Musicae Mathematicae*, p. 30. An almost identical statement appears on p. 63. See also p. 101: “Je näher wir nun bey der Unitat bleiben können / je natürlicher und besser die Harmonie ist . . .” (The closer we can remain to the unity, the more natural and better the harmonys is.)

²⁵Buttsett, 20.

²⁶“Wir wollen inzwischen . . . unsern Ohren eine Zeitlang Adieu sagen . . .” Mattheson, *Organisten-Probe*, Theoretical Introduction, CXXVI, p. 74.

²⁷“Die guten mathematischen Verhältnisse machen nicht alles aus . . . Aus ihnen entspringen gar nicht alle Schönheit in allen Dingen.” Mattheson, *Der Vollkommene Kapellmeister* (Hamburg, 1739), Vorrede, p. 20. In a dedicatory poem introducing the same publication, Johann Scheibe berates traditionalists: “You scoff at reason . . . you love proportions but offend the ear.” (Du spottest der Vernunft . . . Ihr aber, proportionen liebt; die Ohren aber kränkt.)

²⁸“Durch den Klang oder Ton wird nichts anders verstanden / als die Anzahl der Schläge oder Bebugen . . . in einer gewissen / gesetzten Zeit verrichtet.” Mattheson, *Organisten-Probe*, Theoretical Introduction, p. 105.

²⁹“So sehen wir . . . daß das Genus chromaticum kein fictum, sondern ein in der Natur und Antiquité . . . festgegründetes natürliches Wesen sey / wodurch wen recht damit umgegangen wird / die harmonica zur gnugsamen Vollkommenheit (obgleich nicht zur höchsten / die in der Welt nicht zu suchen) gelangen kan.” Mattheson, *Organisten-Probe*, LXXXIX, p. 47.

³⁰Buttstett, 38–39.

³¹Johann Mattheson, *Exemplarische Organisten-Probe im Artikel vom General-Bass, mit Erläuterungen und einer theoretischen Vorbereitung versehen* (Hamburg, 1719).

³²Mattheson, *Exemplarische Organisten-Probe*, 83: “Denn in Harmonica ist keine Monarchie / keine Aristocratie, sondern eine gänzliche Democratie; ein hemitonium, ein mi fa, hat da eben solchen Rang / als das andere; keines gehet vor oder kommt in grössere Consideration als das andere / ob sie gleich *ratione formae* unterschieden sind.”

³³The chromatic tones are not simply *ficta*.



Figure 6. Mattheson's Tune Incorporating All 12 Chromatic Pitches

Clearly, the appeal of chromaticism and tempered tuning lay in the richer, ear-pleasing harmonic palette it offered—even if its intervals were “imperfect” in their mathematical proportions. Eric Chafe notes,

The “completeness” of [Bach's setting of] “Das alte Jahr” for Kirnberger, was distinctly related to its harmonic richness; its featuring all twelve semitones of the chromatic scale makes it a perfect example of “tempered music,” which Werckmeister viewed as an allegory of the imperfection and incompleteness of human life. For Werckmeister music's completeness or incompleteness was determined by musico-theological qualities, while for Kirnberger it was a purely pragmatic matter involving only the notes.³⁴

BACH'S POSITION IN THE CHANGING ORDER

How did Bach react to all of this? We know that he was aware of this “new gusto,”³⁵ yet many of his professional relationships were with traditionalists such as Werckmeister and Buttstett. Ruth Tatlow writes, “Bach probably never met Andreas Werckmeister. Their connection was through Johann Gottfried Walther.”³⁶ Bach and Walther were related through their mothers, respectively, Maria Elisabetha Lämmerhirt (1644–94) and Martha Dorothea Lämmerhirt (1655–1727),³⁷ and Walther took organ lessons with Buttstett.³⁸ David Ledbetter observes,

Bach himself deeply valued [the old cantoral tradition], not just as a large part of his connoisseurship of musical styles and materials, but also as the basis of livelihood of generations of his family. . . . Whatever Bach thought of Buttstett, he could hardly overlook the fact that Mattheson had seen to include [in the *Orchestre* of 1713] a quite gratuitous and obscene criticism of Bach's father-in-law, Johann Michael Bach. . . . In the midst of this Mattheson had the impudence to insert a patronizing footnote addressed to J. S. Bach in Weimar, asking him to provide biographical information towards a projected Triumphal Arch (*Ehrenpforte*) of 100 German musicians. . . . It can hardly be wondered at that Bach failed to respond to this invitation. Further circumstances that may have [had] a bearing are that Mattheson published in Hamburg in

³⁴Eric Chafe, *Analyzing Bach Cantatas* (Oxford: Oxford University Press, 2000), note 3 on pp. 253–54. See also 72ff. For a discussion of Bach's portrayal of human imperfection in the alto aria (no. 5) of the Cantata 77, “Du sollt Gott, deinen Herren, lieben,” see Chafe *Analyzing Bach Cantatas*, 213–14. The voice part eventually covers all 12 tones (with the G♯ in m. 69).

³⁵See Ahrens, Christian, “Johann Sebastian Bach and the ‘New Gusto’ in Music Around 1740,” trans. Sabine Thomas and Melvin Unger, *Bach* 33/1 (2002): 69–83.

³⁶Ruth Tatlow, *Bach's Numbers. Compositional Proportion and Significance* (Cambridge: Cambridge University Press, 2015), 16. See also Pieter Bakker, “Postmodern Numbers,” p. 13. Ruth Tatlow notes, “A related Martha Lämmerhirt married the Erfurt theorist and organist J. H. Buttstett . . .” (Tatlow, *Bach's Numbers*, p. 16, f.n. 55.) See also Buttstett entry in *New Grove Online*.

³⁷Pieter Bakker claims Martha Dorothea was Walther's grandmother. See Bakker, “Postmodern Numbers,” p. 13.

³⁸Buttstett entry by George Buelow in *New Grove Online*.

1719 a collection of figured-bass exercises in all 24 keys, the first publication to do this; and that Bach was in Hamburg in November 1720 playing for the post of organist at the Jakobikirche. Bach rarely expressed himself in written words, but his 1722 title-page makes a point of describing major and minor keys in old-fashioned terms of the hexachord (Ut Re Mi). . . . There could be no finer irony than that Bach, the firm supporter of tradition, should have written the first collection of fully composed pieces to use every key as a tonic, amply demonstrating an advanced connoisseurship of the latest French styles and how they might be given depth by traditional techniques.³⁹

It is significant here that it was in the course of putting together Book I [of the *Well-Tempered Clavier* that Bach] went over to the complete modern system of key signatures (KB V/6.1, p. 24). In 1722 he could have used, had he wished, a formulation such as that employed in the same year by the Dresden musical amateur Friedrich Suppig . . . : “durch alle *Tonos* nemlich durch 12 *duros* und 12 *molles*, zusammen 24 *Tonos*.”⁴⁰

Bach had long admired Kuhnau, and some of his early clavier works were modeled on Kuhnau’s He was personally acquainted with Kuhnau. . . . Bach wrote the 1722 title-page in the year that Kuhnau died and in which he applied to succeed Kuhnau as Thomas cantor. It was clearly important to Bach to present his work as the continuation of a tradition. . . . He expressed himself only with reluctance in writing . . . and these title pages are most of what we have of his views on music. He therefore used them to present his own assessment of himself in relation to tradition.⁴¹

In his discussion of Bach’s Faber canon *Fa Mi, et Mi Fa est tota Musica*, David Yearsley similarly sees evidence of Bach siding with the traditionalists.⁴² The commonly used phrase (already discussed above)⁴³ was increasingly being challenged. In a brilliant but merciless response to the title of Buttstett’s treatise, Mattheson wrote a subtitle to the frontispiece of *Das beschützte Orchestre* (1717), which depicts a tombstone for Guido d’Arezzo, that mocks Buttstett’s title: “Ut Mi Sol Re Fa La Todte [i.e., dead] (nicht Tota) Musica.”⁴⁴ Later in his *Exemplarische Organisten-Probe* of 1719, he wrote, “Instead of saying ‘Mi & Fa sunt tota Musica,’ one might say in reverse: ‘Tota Musica est Mi & Fa.’ It’s like saying ‘the whole palace is stone and lime’ [instead of] ‘Stone and lime is the soul of the building.’ In a footnote, Mattheson adds, “Stone and lime are not the reason for a good house. They are ‘Elementa’ but not ‘Animam.’”

What was being challenged, however, was not that the semitone, as the smallest indivisible unit of tonal organization, was the foundation of music, but rather the use of medieval solmization syllables to describe it. Indeed, the title of Bach’s canon could be taken as a reference to the debate over solmization printed in Mattheson’s *Critica musica* in 1724. . . . Mattheson canvassed leading musicians regarding the validity of arguments in favor of retaining solmization put forth by Buttstett in his 1717 treatise, *Ut, mi, sol, re, fa, la tota musica et harmoniea aeterna* . . . itself a

³⁹Ledbetter, 5–6.

⁴⁰Ledbetter, 119.

⁴¹Ledbetter, 119–120.

⁴²See also Anatoly Milka, “On the Circumstantial Context of J. S. Bach’s Canon super Fa Mi BWV 1078,” *Vestnik of Saint Petersburg University. Arts* 9/2 (2019): 238–55; Mary Greer, “Masonic Allusions,” 13ff.; and Chafe, *Tonal Allegory in the Vocal Music of J. S. Bach* (Berkeley: University of California Press, 1991), 39.

⁴³Another instance of the phrase coupled with a canon appeared in 1782 on the title page of J. F. Kimberger’s *Anleitung zur Singekomposition*. The title page contains a box headed with the inscription “Fa Mi, et Mi Fa est tota Musica” followed by a dedication to C. P. E. Bach and a four-part canon beginning with the motive B-A-C-H in long tones (the B and A have Fa Mi written below, the C and B-flat have Fa and Mi below but the words are upside down, so that when the paper is turned upside down, they (though not the notes) become Mi Fa).

⁴⁴See Scott Elsholz, “Opening a Forgotten Cabinet: Johann Heinrich Buttstett’s *Musicalische Clavier=kunst und Vorraths=kammer* (1713)” (doctoral diss., Indiana University, 2013).

response to Mattheson's treatment of the subject in *Das neu-eröffnete Orchestre* of 1713. Both Buttstett's title and Bach's refer to the solmization syllables as *tota musica*. . . . Rather than pronouncing the venerable *mi fa* solmization pair dead, Bach forcefully resuscitates them, restoring their primacy as *tota musica*, and aligning himself with traditionalists such as Fux, Ritter, and Schmidt."⁴⁵

Perhaps Bach also identified with Werckmeister and Buttstett because they were Thuringians.⁴⁶ Since the Bach family had dominated musical life in Erfurt for many generations, Bach may have felt especially defensive of Buttstett, who spent his entire life and career there.⁴⁷

Still, Bach was clearly attracted to the idea of 24 keys—a tempered system that closed the circle. The title-page of his 1722 *Well-Tempered Clavier* I reads, in part, “Preludes and Fugues through all the tones and semitones, both as regards the *tertia major* or *Ut Re Mi* and as concerns the *tertia minor* or *Re Mi Fa*.”⁴⁸

PERSPECTIVES FROM BACH'S MUSIC

How did Bach view chromaticism? He was obviously interested in demonstrating the possibilities of a well-tempered tuning system. But what does it mean when he employs all 12 tones in a passage or phrase—if anything? I became interested in this question when I found a 7+7 pattern in the vocal line of BWV 78/3, whose text clearly references the biblical epistle to the Romans, chapter 7. That is, all 12 pitch classes appear in the first seven measures and again in the next seven. A similar pattern appears in the second movement of Cantata 48, a work that opens with an ensemble setting of Romans 7:24.⁴⁹ These examples suggest that Bach made connections between chromatic saturation and literary ideas.

⁴⁵David Yearsley, *Bach and the Meanings of Counterpoint* (Cambridge: Cambridge University Press, 2002), 59–60.

⁴⁶Werckmeister worked in some towns just north of the border between Thuringia and Saxony-Anhalt.

⁴⁷Regarding the Bach dynasty in Erfurt, see Robert Marshall and Traute Marshall, *Exploring the World of J. S. Bach* (Urbana, Ill.: University of Illinois Press, 2016), pp. 130–31. Compare Ruth Tatlow, *Bach's Numbers*, p. 368.

⁴⁸“Das Wohltemperirte Clavier oder Præludia, und Fugen durch alle Tone und Semitonia, so wohl tertiam majorem oder Ut Re Mi anlangend, als auch tertiam minorem oder Re Mi Fa betreffend. Zum Nutzen und Gebrauch der Lehrbegierigen Musicalischen Jugend, als auch derer in diesem studio schon habil seyenden besonderem Zeitvertreib aufgesetzt und verfertigt von Johann Sebastian Bach. p. t. Hochfürstlich Anhalt-Cöthenischen Capel-Meistern und Directore derer Camer Musiquen. Anno 1722.” (The Well-Tempered Clavier, or preludes and fugues through all the tones and semitones, both as regards the *tertia major* or *Ut Re Mi* and as concerns the *tertia minor* or *Re Mi Fa*. For the use and profit of the musical youth desirous of learning as well as for the pastime of those already skilled in this study, drawn up and written by Johann Sebastian Bach p.t. [*pro tempore*, i.e., presently] Capellmeister to his Serene Highness, the Prince of Anhalt-Cöthen, etc., and Director of His chamber music. Anno 1722.) Translation by Christoph Wolff in the *New Bach Reader* (New York: W. W. Norton, 1998), no. 90 (p. 97).

⁴⁹See Melvin Unger, “‘Ich elender Mensch’: Bach on the Soul’s Torment” in *Passion, Affekt und Leidenschaft in der Frühen Neuzeit*, ed. Johann Anselm Steiger, 2 vols. (Wiesbaden: Harrassowitz Verlag, 2005): 543–58. Cantata 48 begins with Rom. 7:24. Chromatic completion in the vocal part occurs in the first 7 measures and again in the next 6. One could speculate that Bach is signifying the 7th chapter of the 6th book in the New Testament, verse 24 (2+4=6).

BWV 78/3.
Chromatic
saturation
in vocal
line in 7
mm.;
again in 7
mm.

3. Recitativo

Tenore

Continuo
Organo (leichte Hand)
Organo
piano

Ach! ich bin ein Kind der Sün-den, ach! ich ir-re weit und breit. Der Sün-den Aus-satz,
so an mir zu fin-den, ver - löst mich nicht in die-ser Sterb-lich - keit. Mein Wil-le trach-tet nur nach
Bö-sen. Der Geist zwar spricht: ach! wer wird mich er - lö-sen? A - ber Fleisch und Blut zu
zwin-gen und das Gu-te zu voll-brin-gen, ist ü-ber al-le mei-ne Kraft. Will ich den Scha-den nicht ver-leh-len, so kann ich
nicht, wie oft ich feh-le, zäh-len. Drum, neh-m ich nun der Sün-den Schmerz und Pein und mei-ner Sorgen
Bür-de, so mir sonst un-er-träg-lich wür-de, ich lief-re sie dir, Je - su, seuf - zend ein. Rech-ne
nicht die Mis-se-tat, die dich, Herr, er - zür - net hat!

a tempo

Figure 7. BWV 78/3

To study how widespread this phenomenon was in Bach's sacred cantata recitatives, I and an assistant, Taylor Giacomini, tabulated some 90,000 pitches in the vocal lines, identifying initial span lengths in which all twelve chromatic tones appear and deviations from equal pitch distribution, while also identifying recitative lengths, opening and closing keys, vocal instrumentation, chronological order numbers, and literary subjects. Our results appeared in "Uncovering Text-Music Connections with a Relational Database: Towards an Objective Measurement of Pitch Diversity in Relation to Literary Themes in Bach's Church Cantata Recitatives" *Computers and the Humanities* 38/3 (August 2004): 271–97.

Our empirical approach to uncovering the connections between pitch diversity and Bach's textual themes required that all individual pitches be recorded, and the resulting pitch sets cross-referenced with generic text themes. To accomplish this enormous task we commissioned the design of computer software,⁵⁰ which allowed pertinent information to be recorded and a number of quantitative operations to be carried out. The following data were recorded:⁵¹

⁵⁰Thanks to Andy Reinke, who developed the software using Visual Basic. The program could be refined by weighting pitches on the basis of metrical stress and duration.

⁵¹Microsoft Access.

- basic information about the recitative: movement identification, length in measures, opening and closing keys, scoring information (voice type, presence or absence of accompaniment), chronological position in Bach's sacred cantata output, date the work was composed or first performed,
- theological/literary themes including summaries found in Melvin Unger's *Handbook to Bach's Sacred Cantata Texts*,⁵²
- general observations,
- pitches of the vocal part,
- number of measures in which the entire set of twelve pitch classes appeared (if at all).

| BWV | Mvt. | Ord | TC/FP | Mm. | 12in | OK | CK | S | A | T | B | Acc | Dev. |
|-----|------|-----|---------------|-----|------|----|----|---|---|---|---|-----|------|
| 1 | 2 | 113 | FP 1725-3-25 | 13 | 0 | d | g | 0 | 0 | 1 | 0 | 0 | 4.8 |
| 1 | 4 | 113 | FP 1725-3-25 | 12 | 8 | g | B/ | 0 | 0 | 0 | 1 | 0 | 6 |
| 2 | 2 | 75 | FP 1724-6-18 | 13 | 12 | c | d | 0 | 0 | 1 | 0 | 0 | 3.2 |
| 2 | 4 | 75 | FP 1724-6-18 | 18 | 12 | E/ | g | 0 | 0 | 0 | 1 | 1 | 3.4 |
| 3 | 2 | 107 | FP 1724-1-14 | 35 | 999 | D | A | 1 | 1 | 1 | 1 | 0 | 4.7 |
| 3 | 4 | 107 | FP 1724-1-14 | 14 | 7 | c* | E | 0 | 0 | 1 | 0 | 0 | 5.2 |
| 5 | 2 | 92 | FP 1724-10-15 | 14 | 0 | d | g | 0 | 0 | 0 | 1 | 0 | 5.1 |
| 5 | 4 | 92 | FP 1724-10-15 | 16 | 8 | c | c | 0 | 1 | 0 | 0 | 1 | 4.6 |

Figure 8. Pitch
Opening Screen

Tracking Program,

Calculations for each recitative included the following:

- frequency of appearance of each notated pitch (without regard to register but preserving enharmonic differentiations), expressed as a percentage,
- pitch class distribution (expressed as a percentage of each pitch class present in the recitative),⁵³
- total number of sharped notes and of flatted notes (inclusive of those signified by the key signature),⁵⁴

⁵²Melvin P. Unger, *Handbook to Bach's Sacred Cantata Texts, an Interlinear Translation with Reference Guide to Biblical Quotations and Allusions* (Lanham, Md: Scarecrow Press, 1996).

⁵³Of course, all twelve pitch classes are not necessarily represented in every recitative.

⁵⁴Counting sharped and flatted notes within a particular recitative without relation to key obviously tells one nothing about chromatic inflection (i.e., notes extraneous to the key) since most keys have sharped or flatted notes as part of their basic series. Furthermore, since recitatives often migrate from key to key, deciding which key should be used as the tonal point of reference at any given moment in a recitative is problematic. Rather, the significance of our totals is that they provide information useful for future inquiries about Bach's possible symbolic intention in using sharps or flats. For example, as numerous writers have suggested, Bach may have intentionally used sharps to denote suffering or "cross-bearing," since the German word for sharp (*Kreuz*) also means "cross."

- pitch diversity expressed as the average deviation from 8.3% (if all 12 pitch classes are represented equally, they each constitute 8.3% of the whole).⁵⁵

Because the software developed for our study was capable of tracking not only the 90,000 pitches constituting the vocal lines of Bach's recitatives but also other attributes of these movements (as listed above), we entered more information than our immediate investigation required, recognizing that the resulting database could form the basis of several subsequent studies.⁵⁶ Furthermore, while the software was designed primarily to record hard data, it also included a field where we could enter observations regarding unusual structures or elements: bass pedals, alternation among voice types (S-A-T-B), intermingling of chorale and recitative sections, arioso segments, bass lines with infrequent notes, obvious scriptural quotations or allusions, and rhetorical figures (e.g., trembling figures). We took the cantatas in chronological order (as opposed to their catalog [*BWV*] order) so that we could incidentally observe any developmental trends. That Bach *did* change at least one aspect of his approach to recitative composition is documented in Robert Marshall's study.⁵⁷ However, our focus remained on answering the following empirically verifiable questions:

- 1) Did pitch diversity change with time?
- 2) In how many measures does a complete set of (all twelve) pitch classes occur? Are there any discernible patterns with regard to complete pitch sets and their textual settings?
- 3) What text themes appear most often and in what proportion?
- 4) Are there demonstrable relationships between text themes and pitch diversity?

The Results

Chronological Trends in Bach's Use of Pitch Diversity

Our study demonstrates that Bach employed greater pitch diversity in the recitatives of his Leipzig period (i.e., from 1723 until his death in 1750). Since Bach evidently composed no sacred cantatas in the immediately preceding years while at the Cöthen court (1717–1723), the contrast between his early and mature church cantatas is all the more evident.⁵⁸ As for the works from his Leipzig period, at least one trend can be observed. Contrary to what one might have supposed—that the second yearly cycle of cantatas (the chorale *Jahrgang*) would be characterized by a simpler pitch vocabulary since Bach was apparently trying to ease the demands placed on the choirboys (especially the sopranos) by basing the cantatas on hymn tunes⁵⁹—pitch diversity in the recitatives actually increased.⁶⁰

⁵⁵Average deviation scores can theoretically range from 0 (if all twelve pitch classes are each represented 8.3% of the time) to 15.25 (if a recitative had no pitch diversity at all: i.e., if it consisted of a single repeated pitch class). Of course the latter case is entirely hypothetical: one pitch class would appear 100% of the time (a deviation of from 8.3 of 91.7), the others 0% (a deviation of from 8.3 of 8.3). The calculation for average deviation would then be: $((8.3 \times 11) + 91.7) \div 12 = 15.25$.

⁵⁶The program does *not* identify which pitches were stressed (presumably for rhetorical purposes) agogically or melodically. However it does have the potential to answer other questions regarding the relationships among pitch diversity, keys, number of sharped or flatted notes, chronology, voice types, accompaniment (accompanied vs. *secco*), and subject matter.

⁵⁷After describing Bach's Leipzig practice of writing the text out in its entirety before beginning to compose the music (see quotations provided above) Marshall writes, "In the pre-Leipzig recitatives the music was usually written down before the words. (Marshall, *Compositional Process*, 1:92.) With regard to accompaniments Marshall notes, "Accompagnato [i.e., accompanying] parts were not composed until the vocal and continuo parts were already worked out. . . . The accompagnato parts themselves were filled in from top to bottom The autograph scores of the recitatives reveal, finally, that Bach often thought of the accompanying instruments and hence the basic harmonic rhythm as proceeding essentially in half-note values and consequently composed these parts one half-measure at a time." (Marshall, *Compositional Process*, vol 1, pp. 94–95.)

⁵⁸The pre-Leipzig cantata recitatives scored an average deviation of 5.1, the Leipzig cantata recitatives, 4.7.

⁵⁹See Alfred Mann, *Bach and Handel. Choral Performance Practice* (Chapel Hill: Hinshaw Music, Inc., 1992), 40: "All that the soprano section now had to sing was the plain hymn melody."

⁶⁰The Leipzig *Jahrgang* I scored 4.7, while *Jahrgang* II (the chorale cycle) scored 4.6. The *Christmas Oratorio*'s recitatives, on the other hand, evidence less pitch diversity with a score of 5.6.

4.2. Complete Sets of Pitch Classes in Particular Spans

The question of whether Bach employed all twelve pitch classes in structurally significant spans, and if so, whether this fact suggests an intended symbolic meaning related to the text, is one of the more intriguing ones arising out of this study. As noted above, recitatives in Cantatas 48 and 78 suggest this hypothesis. The study counted pitch classes in 418 recitatives. Table 1 documents the number of recitatives that incorporate all twelve pitch classes in the vocal part, and the number of measures required to achieve the complete set. In some cases, it seemed more appropriate to measure inner spans. These appear in the database as thirteen separate and additional entries (identified as such) and are not included here in the totals proper.⁶¹

| Table 1. Number of Recitatives in Which All Twelve Pitch Classes Appear (sorted according to relevant span lengths in measures) | |
|--|---|
| Span | Number of Recitatives |
| 0 mm. ¹ | 180 (+4 segments entered into the database in addition to the entire recitative) ² |
| 3 mm. | 1 (+2 segments entered separately into the database) |
| 4 mm. | 5 (+2 recitative segments entered separately into the database) |
| 5 mm. | 10 (+2 segments entered separately into the database) |
| 6 mm. | 19 |
| 7 mm. | 29 (+1 segment entered separately into the database) |
| 8 mm. | 27 (+1 segment entered separately into the database) |
| 9 mm. | 29 (+1 segment entered separately into the database) |
| 10 mm. | 31 |
| 11 mm. | 12 |
| 12 mm. | 17 (+1 segment entered separately into the database) |
| 13 mm. | 9 |
| 14 mm. | 7 |
| 15 mm. | 2 |
| 16 mm. | 3 |
| 17 mm. | 1 |
| 18 mm. | 2 |
| 19 mm. | Not found |
| 20 mm. | 1 |
| 21 mm. | 1 |
| 22 mm. | Not found |
| 23 mm. | 1 |
| 24 mm. | 1 |
| 25 mm. | Not found |
| 26 mm. | Not found |
| 27 mm. | 1 |
| 28 mm. | 1 |
| 37 mm. | 1 |
| 999 ³ | 27 |
| Total: | 418 recitatives + 14 repeated recitative segments = 432 records in the database |

¹“0” is the designation used for recitatives in which the complete set did not appear.

⁶¹An inner span from *BWV* 10/6, for example, is identified as 10/6.1.

²In some cases, it seemed worthwhile to study a segment of a recitative in isolation, and it was entered into the database separately, i.e., in addition to the entire recitative. As a result the database has 3 additional entries showing “12 in 0.”

³“999” is the designation used for longer recitatives (or recitatives with interpolations, etc.) in which it seemed pointless to continue to count pitch classes.

In 180 recitatives (43% of the total) a complete pitch set does *not* appear within a “reasonable span.” In the recitatives that do include the entire chromatic gamut, the span ranges most typically from 10 to 14 measures, with 7-, 8-, 9-, and 10-measure spans accounting for 116 instances (27.75% of the total number of recitatives). Since the number of instances for each of these spans is almost identical (29, 28, 29, and 31, respectively) it is difficult to infer any conscious design on Bach’s part with respect to a text-related meaning of these numbers, the cited examples from Cantatas 48 and 78 notwithstanding. Indeed one might argue that when Bach chose to write chromatic melodies, the *coincidental result* was that he included a complete pitch set within spans of seven to ten measures. In short, it appears impossible to demonstrate conclusively that Bach counted pitch classes as he composed (at least as a regular practice), incorporating complete sets in significant spans for symbolic purposes.

In the 211 recitatives in which all 12 chromatic notes appear in the vocal line within a reasonable span (almost always within 14 measures but as many as 37 measures), the choice of opening keys reveals the following: Minor keys are preferred over major keys at a ratio of 131:80. The disposition of these minor keys (checked for enharmonic equivalents) is as follows:

| | |
|------------|-----|
| b | 27 |
| b \flat | 0 |
| a | 15 |
| a \flat | 0 |
| g \sharp | 1 |
| g | 22 |
| f \sharp | 14 |
| f | 0 |
| e | 20 |
| e \flat | 0 |
| d | 12 |
| c \sharp | 4 |
| c | 16 |
| Total: | 131 |

The disposition among opening major keys in such recitatives is:

| | |
|------------|----|
| B | 1 |
| B \flat | 22 |
| A | 3 |
| A \flat | 0 |
| G \sharp | 0 |
| G | 16 |
| F \sharp | 0 |
| F | 10 |
| E | 0 |
| E \flat | 9 |
| D | 6 |
| C \sharp | 0 |
| C | 13 |
| Total: | 80 |

The most immediate observation is that, for basic tonalities, Bach almost always restricted himself to no more than three sharps or flats in these recitatives. The rest of the chromatic pitches were either accessory to these keys or participatory to modulations within the movement.

For closing keys in these recitatives, the minor mode still dominates, though at the lesser ratio of 115:96. The disposition of these minor keys is similar to that of opening keys, with the exception that d minor is used relatively more often (21 times as a closing key versus 12 times as an opening key).

| | |
|--------|-----|
| b | 16 |
| b♭ | 0 |
| a | 16 |
| g♯ | 1 |
| g | 13 |
| f♯ | 12 |
| f | 1 |
| e | 16 |
| e♭ | 0 |
| d | 21 |
| c♯ | 5 |
| c | 14 |
| Total: | 115 |

The disposition of closing major keys is as follows:

| | |
|--------|----|
| B | 0 |
| B♭ | 26 |
| A | 8 |
| A♭ | 1 |
| G♯ | 0 |
| G | 22 |
| F♯ | 0 |
| F | 7 |
| E | 3 |
| E♭ | 4 |
| D | 9 |
| C♯ | 0 |
| C | 17 |
| Total: | 96 |

Notably, several major keys are used more often as closing keys than opening keys, while E-flat major is used less often as a closing key. A-flat major is used once as a closing key.

D minor is of particular interest, since Martin Luther equated the second tone (apparently referring to the hypodorian mode) with “poor, weak sinner.” Eyolf Østrem documents various iterations of Luther’s statements.⁶²

B molle,⁶³ in music est euangelium, moderatur in tota musica ceterae claves sunt rex, et ut lex obtemperat euangelio, ita B molle regit ceteras claves.⁶⁴ Et ut euangelium est doctrina suavissima,

⁶²Østrem, Eyolf, “Luther, Josquin and *des finken gesang*” in *The Arts and the Cultural Heritage of Martin Luther* (special issue of the journal *Transfiguration*, Nordic Journal of Christianity and the Arts, replaces issue 4/1), ed. Nils Holger Peterson (Museum Tusculanum, 2002): 61.

⁶³“Østrem: “Other versions have ‘*bi fah mi*’ and ‘B fa b mi.’”

⁶⁴Østrem: “The German version of *Tischreden* 816 has ‘Gleich wie das Gesetz dem Euangelio gehorchet, also sind auch die andern Claves dem B fa b mi gehorsam.’ *Tischreden* 2996 adds ‘et mi est lex, fa euangelium.’”

*ita mi fa⁶⁵ est omnium vocum suavissima, Ideo infirmatus peccator est secundus tonus, qui in h fa b, mi tam mi quam fa canere permittit.*⁶⁶

B molle [or: *B fa b mi*]⁶⁷ is like the Gospel in music, since all of music is governed by it. The other degrees are the Law—and just as the Law is ruled by the Gospel, so the *bi fa b mi* rules the other degrees [and *mi* is the Law, *fa* is the Gospel]. And just as the Gospel is the sweetest doctrine, so the *mi* and the *fa* are the sweetest of tones. The second tone is a poor sinner, who in *b fa b mi* permits both *mi* and *fa* to be sung.

Some scholars have interpreted the term *secundus tonus* to mean a modal scale degree. Thus Østrem writes,

The “freedom” that characterizes *b fa b mi* overrules the “law-boundedness” of the other degrees. This may be what is intended in the latter part of the quotation, viz, if we take “the second tone” to mean whatever other tone above or below a *mi* or *fa* which will have to be changed according to the rules of *musica ficta* It is a “poor sinner” which, if sung according to the Law (its fixed-pitch scale degree) will be false, but will be brought into harmony with the rest of the parts under the moderation of the Gospel.”⁶⁸

It seems clear, however, that Luther’s use of *secundus tonus* refers to the church modes. Similar usage occurs in his *Deutsche Messe* (1526), where Luther specifies particular modes for the various chants provided: “primo tono” (unnumbered page [14]), “selben Thon” (unnumbered page [21]), “octauo Tono” (unnumbered page [22]), and “quinto tono” (unnumbered page [24]). Furthermore, Luther’s collaborator Johann Walter (1496–1570) recalled a conversation with the reformer about the characteristics of the various modes:

Da er vor viertzig Jahren die deutsche Messe zu Wittenberg anrichten wolte / hat er . . . Conrad Rupff / und Mich gen Wittenberg erfordern lassen / dazumahlen von den Choral Noten und Art der achrt Ton unterredung mit uns gehalten / und beschließich hat er von jhm selbst die *Choral Noten octavi Toni* der Epistel zugeeignet / unnd *Sextum Tonum* dem Evangelio geordnet / unnd sprach also: Christus is ein freundlicher H E R R / und seine Rede sind lieblich / darumb wollen wir *Sextum Tonum* zum Evangelio nehmen / und weil S. Paulus ein ernster Apostel ist / wollen wir *Octavum Tonum* zur Epistel ordnen Er hat mich die zeit drey Wochen lang zu Wittenberg auffgehalten⁶⁹

When forty years ago [Martin Luther] wanted to prepare the *Deutsche Messe* in Wittenberg, he summoned . . . Conrad Rupff and me to Wittenberg [and] at that time discussed with us the Gregorian chants and the nature of the eight modes, and finally he himself applied the Gregorian notes of the eighth mode⁷⁰ to the Epistle and the sixth mode⁷¹ to the Gospel, and said: “Christ is a kind Lord and his words are delightful, therefore we will use the sixth mode for the Gospel and, because Saint Paul is an earnest apostle, we will assign the eighth mode to the Epistle He kept me in Wittenberg for three weeks at that time”

⁶⁵Østrem: “Other versions have ‘das Mi und Fa,’ ‘mi fa mi’ (*Tischreden* 816) and ‘bfa b mi’ (*TR* 2996).”

⁶⁶Østrem: “The text is the longest Latin version of the quotation from WA *Tischreden* vol. 1 (Weimar, 1912), 396, no. 816. The quotation is also found in WA *Tischreden* vol. 3 (Weimar 1914), 136, no. 2996.”

⁶⁷Bracketed words are alternate phrases found elsewhere in Luther’s writings (see footnotes earlier).

⁶⁸Østrem, 62–63. Mary Greer, in the article on Masonic allusions in two of Bach’s canons cited above, translates “ander Tonus” from German as “the other tone [i.e., the Law].”

⁶⁹Johann Walter in Michael Praetorius, *Syntagma Musicum* I (Wolfenbüttel, 1619), pp. 451–52.

⁷⁰Hypomixolydian? Chafe, *Tonal Allegory*, p. 71, says on G.

⁷¹Hypolydian? Chafe, *Tonal Allegory*, p. 71, says on F.

Eric Chafe understands the term in this way, writing simply that Luther “called the Dorian mode an analog of ‘poor weak sinner’ because of its use of the variable B fa/mi.”⁷²

If Luther equated the dorian mode with “infirmatus peccator” (poor weak sinner),⁷³ it is interesting to compare movements in d minor in terms of chromatic completion. Of the 211 recitatives in our category (recitatives achieving chromatic saturation within reasonable spans) 30 either begin and/or end in d minor.⁷⁴ Of these, 3 begin *and* end in d minor, 9 begin in d minor and end elsewhere, while 18 begin elsewhere and end in d minor. Since there are approximately 18 possible tonalities at play (up to 4 flats or sharps in either major or minor mode), the predominance of d minor is striking. Furthermore, of these 30 recitatives, 26 cover the chromatic spectrum in 12 or fewer measures; 9 cover them in 7 or fewer measures. The chromaticism in these recitatives is clearly pronounced. Here are the literary themes⁷⁵ for 26 recitatives beginning and/or ending in d minor whose vocal lines achieve chromatic saturation in 12 or fewer measures (literary themes for spans larger than 12 measures are not entered; those fields appear blank).

| Order No. | Opening Key | Closing Key | Mvt. No. (Saturation in “X” mm.) | Theme 1 | Theme 2 | Theme 3 | Theme 4 | Theme 5 |
|-----------|-------------|-------------|----------------------------------|---|--|------------------|--|---------|
| 75 | c | d | 2/2 (12) | apostasy (“stench and rottenness”) | human reasoning (“Vernunft”) | | | |
| 115 | d | g | 6/4 (9) | darkness | evil world | judgment | | |
| 76 | e | d | 7/3 (12) | Jesus | incarnation (“taking on lowly human form”) | Christ’s baptism | | |
| 78 | g | d | 10/3 (10) | God | blessing | judgment | inversion principle (God lifts up lowly, scatters the proud) | |
| 192 | g | d | 14/3 (8) | adversity | evil world | | | |
| 74 | g | d | 20/4 (8) | eternal damnation | indefinite duration of damnation | | | |
| 41 | d | d | 25/2 (9) | sickness of human nature | original sin infects all with various sins | | | |
| 94 | d | d | 38/4 (10) | weak faith needs Jesus’ help | | | | |
| 71 | g | d | 44/5 (3) | Christian warfare (Antichrist perscutes believers in vain.) | | | | |
| 132 | E♭ | d | 57/6 (8) | yearning for death | Christ/believer dialog | | | |
| 86 | d | c | 78/3 (7) | corrupt human nature | original sin (“sin’s leprosy”) | repentance | | |
| 61 | d | a | 83/4 (7) | fear vs. comfort | facing death | | | |
| 162 | b | d | 84/2 (16) | | | | | |
| 120 | d | c | 87/4 (7) | entreaty (in face of “guilt that piles up to | repentance | comfort | | |

⁷²See *Tonal Allegory*, 39. See also Chafe *Analyzing Bach Cantatas*, p. 267n33 and p. 98 (where he writes “hypodorian”).

⁷³Chafe’s translation in *Tonal Allegory*, 39. In Cantata 77, “Du sollt Gott, deinen Herren, lieben,” we see another association of D minor with human weakness and imperfection in the alto aria (movement 5), which alludes to Romans 7: “Hab’ ich oftmals gleich den Willen, was Gott saget, zu erfüllen . . . am Vollbringen fehlt es weit” (though I often want to do what God says, the reality falls far short).

⁷⁴The prevalence of D minor may also be due, in part, to that mode’s general popularity. Johann Gottfried Walter writes, “Er wird allen übrigen *Modis* vorgezogen . . .” (It is preferred above all other modes.) See Walther, *Praecepta der musicalischen Composition* (1708), a “manuscript kept at the Landesbibliothek in Weimar, shelfmark Hs. Q 431c, vol. II, §7, p. 20 [an] important source . . . unpublished until 1955 when it was published in an edited transcription by Peter Benary (Leipzig: Breitkopf & Hartel, 1955),” library location cited in Ruth Tatlow, *Theoretical Hope*, p. 49.

⁷⁵As determined in the pitch study.

| | | | | | | | | |
|-----|-----------|-----------|------------------|--|--|--|-------------------|-------|
| | | | | heaven") | | | | |
| 48 | g | d | 89/2 (9) | God's judgment is well deserved | God's nature | sin | no mercy | |
| 51 | B \flat | d | 90/2 (16) | | | | | |
| 44 | d | B \flat | 95/2 (10) | renunciation of deceitful earthly life ("Sodom's apples") | earth vs. heaven | | | |
| 156 | g | d | 98/4 (6) | suffering ("my cross's pain") | exhortation | God's love | | |
| 2 | B \flat | d | 106/3 (18) | | | | | |
| 90 | g | d | 114/3 (7) | exhortation (sinners have brought on their own suffering) | judgment | sin | human nature | death |
| 111 | a | d | 126/5 (10) | God's word and truth protects church from proud foes of previous movement) | blessing | aid | | |
| 77 | d | C | 135/2 (7) | entreaty for healing and help from misery of cross and suffering | healing | suffering | | |
| 139 | g | d | 146/4 (7) | yearning for heaven in view of treacherous treatment | evil world | suffering | | |
| 34 | d | a | 147/4 (9) | stubbornness blinds the mighty | inversion principle (God lifts up lowly, scatters the proud) | exhortation | commitment to God | |
| 56 | G | d | 153/4 (6) | Christian warfare: my foes increase | suffering increases | entreaty for divine aid | | |
| 24 | d | a | 155/1 (8) | suffering increases beyond endurance | entreaty in vain | divine aid withheld | | |
| 170 | d | d | 156/3 (12) | entreaty for help in my misery | request for mercy | submission to God in face of suffering | | |
| 26 | C | d | 162/2 (23) | | | | | |
| 68 | g | d | 166/4 (11) | transience of earthly life | worldly happiness and success can disappear suddenly | | | |
| 189 | d | C | 248/38 (8) | Jesus/believer dialog | devotion: Jesus' name means everything, even in death | comfort | | |
| | | Total: | 26 in 12 or less | | | | | |

While a thorough examination of the themes in these recitatives is beyond the scope of this study, it is clear that their texts almost invariably feature the misery and imperfections of the human condition. The physical and spiritual frailty of the speaker ("poor, weak sinner") is often compounded by external opposition and even persecution. For these literary themes Bach employs chromatic saturation within limited measure spans.⁷⁶

But not all chromatically complete recitatives dealing with the imperfections and miseries of life begin and/or end in d minor. To pick a somewhat arbitrary span length, recitatives that achieve chromatic completion within 5 measures include the following:

⁷⁶Note that the chorale prelude "Durch Adams Fall" (referenced above), whose text expounds the doctrine of original sin, is also set in D minor.

| Order No. | Opening Key | Closing Key | Mvts. (Saturation in "X" mm.) | Theme 1 | Theme 2 | Theme 3 | Theme 4 | Theme 5 |
|-----------|-------------|-------------|-------------------------------|----------------------------|---|---------------------|------------------------------------|--------------------|
| 74 | a | c | 20/2 (5) | eternal damnation | infinite duration | | | |
| 97 | G | a | 26/5 (5) | transience of earthly life | worldly honor | inversion principle | | |
| 71 | g | d | 44/5 (3) | Christian warfare | | | | |
| 66 | c# | A | 67/5 (4) | evil world | victory | human nature | faith | |
| 59 | c | c | 73/3 (5) | human nature | submission to God | | | |
| 31 | e | e | 76/6 (5) | blessing | divine enlightenment came to Gentiles sitting in darkness | | | |
| 60 | a | G | 81/2 (4) | entreaty in vain | adversity | God | aid | |
| 69 | b | E | 86/4 (5) | evil world | comfort | God's nature | | |
| 120 | g | g | 87/2 (4) | exhortation | repentance | gospel | | |
| 156 | g | E♭ | 98/2 (5) | entreaty in vain | suffering | faith | | |
| 118 | f# | c# | 103/2 (5) | suffering | devotion | entreaty in vain | | |
| 23 | A | A | 132/2 (4) | exhortation | commitment to God | submission to God | (most of the recitative is arioso) | |
| 77 | d | C | 135/2 (5) | entreaty | healing | suffering | | |
| 139 | a | a | 146/4 (5) | yearning for heaven | evil world | suffering | | |
| 20 | b | G | 165/4 (5) | entreaty | commitment to God | repentance | original sin | healing & devotion |
| 122 | a | e | 183/1 (4) | adversity | suffering | voice of Christ | scripture | |
| 35 | N/A | N/A | 186/2.1* (5) | adversity | suffering | | | |

*In our pitch study, a decimal point is used to identify recitative fragments appearing later in the recitative.

Not surprisingly, the same themes occur. For the pious Lutheran believer, patiently and steadfastly taking up one's cross in the face of weakness and opposition was the path to eventual eternal reward. The more vividly a lyricist described the deplorable human condition in a recitative, the more likely it was for Bach to employ chromatic saturation in the vocal line. The chorale that begins Cantata 3 captures the sentiment well: "Ach, Gott, wie manches Herzelied begegnet mir zu dieser Zeit! Der schmale Weg is trübsalvoll, den ich zum Himmel wandern soll." (Ah, God, how many a grief I encounter in this time! The narrow way, which I must travel to heaven, is filled with affliction.) In the fourth movement, the tenor covers all twelve pitch classes in seven measures as he sings, "Es mag mir Leib und Geist verschmachten, bist du o Jesu mein . . ." (Even if my body and soul wither away, if thou, O Jesu, art mine . . .)

Since the number 7 often represents completion or perfection in the Bible, one wonders whether Bach sought to achieve chromatic saturation in exactly 7 measures to depict the "completeness" or "absoluteness" of corrupt human nature, judgement, human suffering, and/or adversity. Recitatives whose vocal lines achieve chromatic completion in seven measures are listed next. (We repeat some of the movements already mentioned.)

| Order No. | Opening Key | Closing Key | Mvt. | Theme 1 | Theme 2 | Theme 3 | Theme 4 | Theme 5 |
|-----------|-------------|-------------|------|---|---------------------|-----------|------------------|---------|
| 107 | c# | e | 3/4 | Jesus | comfort | suffering | "first" covenant | |
| 9 | c | f | 21/4 | entreaty in vain (God not hearing "woe" and "ah") | yearning for God | | | |
| 147 | F | g | 35/3 | praise | Jesus | miracles | | |
| 46 | E♭ | B♭ | 48/2 | human nature | original sin | | | |
| 158 | B♭ | F | 52/4 | evil world | comfort | God | | |
| 157 | B♭ | B♭ | 55/4 | judgment | redemption | | | |
| 153 | g | c | 56/4 | yearning for death (laying off the cares and tears of this world) | yearning for heaven | | | |

| | | | | | | | | |
|-----|-----------|-----------|-------|---|-------------------------------------|---------------------------|---------------------------------|----------------------------|
| 52 | F | a | 70/2 | judgment | imminence | fear | joy | |
| 30 | b | e | 75/2 | worldly pleasures ("greatest abundance" can lead to spiritual hell) | transience of earthly life | inversion principle | | |
| 31 | e | C | 76/2 | nature | proclamation | praise | | |
| 31 | e | C | 76/4 | human nature | apostasy | | | |
| 86 | d | c | 78/3 | corrupt human nature | original sin ("sin's leprosy") | repentance | | |
| 61 | d | a | 83/4 | fear vs. comfort | facing death with fear and doubt | | | |
| 120 | d | c | 87/4 | entreaty (in face of "guilt that piles up to heaven") | repentance | comfort | | |
| 91 | F | F | 96/4 | entreaty | divine enlightenment | human nature | | |
| 37 | c | B \flat | 105/2 | propitiation (confession of great sin) | death | redemption | | |
| 84 | G | e | 113/4 | Word | comfort | Jesus | | |
| 90 | g | d | 114/3 | exhortation (sinners have brought on their own suffering) | judgment | sin | human nature | death |
| 98 | c# | A | 116/5 | entreaty (rescue us from God's chastisement of warfare) | mercy | judgment | Christian warfare | civic |
| 167 | b | G | 117/8 | exhortation | praise | God | | |
| 42 | F | e | 119/8 | entreaty (one final request) | civic | blessing | | |
| 65 | g | E \flat | 134/3 | Christian warfare (Christ defeated Satan and earthly enemies) | Jesus | victory | Satan | propitiation |
| 16 | g | B \flat | 152/5 | human reasoning (which takes offence at God taking on human form and suffering) | incarnation | lowliness of humankind | | |
| 171 | c | c | 159/1 | entreaty in vain | Jesus | suffering | | |
| 171 | B \flat | B \flat | 159/3 | suffering | Jesus | yearning for Jesus | renunciation of earthly life | |
| 26 | a | C | 162/4 | entreaty | faith | wedding | redemption-blood | original sin & judgment |
| 93 | B \flat | B \flat | 180/4 | fear vs. joy in contemplating Lord's table | human reasoning | spiritual nourishment | | |
| 35 | c | g | 186/2 | adversity | suffering | discipleship | exhortation | |
| 194 | D | f# | 197/9 | God's love | joy | blessing | | |

Of these 29 recitatives, 12 have literary themes that touch on corrupt human nature and judgment (highlighted in mauve). The doctrine of original sin—the teaching that human nature is inherently corrupt since the Fall of Adam—was a prominent component of Lutheran theology. Perhaps no writer stressed this doctrine more forcefully than Johann Arndt (1555–1621), whose book *Wahren Christenthum* was represented in Bach's personal library. Arndt wrote,

Da lerne nun / O lieber Mensch / was die Erbsünde für ein Greuel über alle Greuel sey / nemlich der Mangel der erblichen Gerechtigkeit Gottes / und die erbliche Ungerechtigkeit von dem Teufel dem Menschen eingepflanzet . . . Damit du es aber besser verstehen mögest / will ich dir diesen Greuel / damit dein Leib und Seele behaftet ist / besser entdecken. Bitt auch und ermahne jeden Menschen um GOTTes und seiner Seligkeit willen / daß er diesen Artickel wohl lerne / und täglich

betrachte / damit er seinen Jammer und Elend recht verstehen lerne / und die Erbsünde in ihm so wohl kennen lerne als sein Angesicht im Spiegel / und täglich darüber seufftze und jammere.⁷⁷

(Learn now, O dear man, how great an abomination above all abominations original sin is, namely, the lack of the original righteousness of God and original unrighteousness planted in man by the devil So that you might better understand this, I will better review for you this abomination that holds your body and soul captive. [I] pray and admonish each man for God's sake and for the sake of his [salvation] that he learn and daily consider [this article] so that he might learn to understand his sorrow and his misery properly and learn to [recognize] original sin in [himself] as [clearly as he recognizes] his face in a mirror, and [grieve] and weep daily because of it.)⁷⁸

Siehe / Du elender Mensch diß Bild des Satans / welches ist die Erb=Sünde / must du in deinem Herten kennen lernen / wie nehmlich die Seele mit des Teuffels Bilde und Unart besaamet und gantz greulich verwüstet ist / so böse / daß niemand des Menschen Hertz ergründen kan: Und du kanst auch selbst nicht gnugsam ausdencken und ausreden / was für ein in deinem Herten ist.⁷⁹

(You wretched man, look at this image of Satan, which is original sin. You must learn to know in your heart how the soul is sown with the Devil's image and quality and is completely wasted in a most abominable way, [how it] is so evil that no one can see to the depths of the human heart. You yourself cannot consider and speak enough about how great an abomination exists in your heart.)⁸⁰

⁷⁷ Johann Arndt, *Vier Bücher vom Wahren Christenthum* (Stade: Caspar Holwein, 1706), 275–76.

⁷⁸ Johann Arndt, *True Christianity*, translated by Peter Erb (New York: Paulist Press, 1979), 188.

⁷⁹ Arndt, *Vier Bücher*, 281.

⁸⁰ Arndt, *True Christianity*, 192.



Figure 9. Johann Arndt, *Wahren Christenthum*, 1745 edition with Foreword by Philipp Jakob Spener⁸¹

⁸¹Many editions of Arndt's work included the preface by Spener (1635–1705), who is generally regarded as the founder of Pietism. Like Luther before them, "Philip Jacob Spener and August Hermann Francke . . . sought to reform a church that placed more emphasis on doctrine and dogma than on piety, devotion, and study of the scriptures." See Don Franklin, "J. S. Bach and Pietism," *Pietisten* 8/1 (Spring 1993), accessed online at <http://www.pietisten.org/viii/1/bach.html> 12 November 2020.



Figure 10. Johann Arndt, *Wahren Christenthum*, 1745 Edition, Plate Depicting Inner Struggle Against Original Sin

In addition to the 12 recitatives just mentioned, an additional 11 (highlighted in yellow) touch on the related theme of human suffering and adversity. As noted below, enduring affliction patiently (i.e., “cross-bearing”) was another prominent theme in Lutheran theology, articulated most clearly in Luther’s Theology of the Cross. That leaves 6 outliers in this group (35/3, 76/2, 113/4, 117/8, 119/8, 197/9), all of which have relatively positive affects.

Despite the impressive number of recitatives that achieve chromatic completion in 7 measures, it is important to note that chromatic saturation in the vocal line occurs almost as often in spans of 6, 8, 9, and 10 measures (see the following chart for details). Perhaps we should not attach too much significance to the span of 7 measures, unless we find additional literary dimensions in the texts to warrant it.

| Table 5. Number of Recitatives Achieving Chromatic Completion in Specific Measure Spans | |
|---|-----------------------|
| Measure Span | Number of Recitatives |
| 3 | 3 |
| 4 | 7 |
| 5 | 12 |

| | |
|------|-----------|
| 6 | 20 |
| 7 | 30 |
| 8 | 28 |
| 9 | 29 |
| 10 | 31 |
| 11 | 12 |
| 12 | 18 |
| 13 | 9 |
| 14 | 7 |
| 15 | 2 |
| 16 | 3 |
| etc. | |

SOME THOUGHTS ON THE BACH GOBLET⁸²

The so-called Bach goblet (*Pokal*), whose manufacture has been dated between 1730 and 1735,⁸³ has generated much speculation with regard to its origin and hidden message. Since the poem includes permutations of the B-A-C-H motive⁸⁴ in transpositions that cover all twelve pitch of the chromatic scale, it is of interest here. First, a review of the goblet's features:



Figure 11. Bach Goblet

⁸²See *Bach Dokumente* II, no. 375.

⁸³Jörg Hansen, “‘Das Wertvollste Stück der Bachiania.’ Die Geschichte des Bach-Pokals im Bachhaus Esenach,” *Bach Magazin* 36 (Fall/Winter 2020/2021): 13 (an insert in *Neue Bachgesellschaft Mitteilungsblatt* No. 87).

⁸⁴The B-A-C-H motive is mentioned already in Johann Gottfried Walther's *Musicalisches Lexicon* (Hamburg, 1732), p. 64. As noted below, J. L. Krebs's father studied with both Bach and Walther.

- The “front” of the goblet has the word “Vivat” with a Bach monogram below.
- The monogram is similar to the more familiar version of Bach’s seal: the initials “JSB” crisscross in mirror image.
- However, the monogram’s orthography is considerably different from that in the seal. Differences include:
 - The goblet’s monogram has no crown.⁸⁵
 - The two Ss in the goblet’s monogram are positioned centrally and more vertically so that they overlap more (intersecting twice instead of just once as in the seal). Placing the Ss (in mirror form) in the center of the design results in a re-ordering of the three letters (“JSB” becomes “SJB”).⁸⁶ This repositioning gives the Ss clear prominence. Taken together, they create a figure 8. One wonders why the Ss were placed in the center. One possibility will be suggested below.
 - The Js have short, mid-length cross-lines, probably to distinguish them from an “I” (compare the “I” in “VIVAT”).

Interpretation: Some Possibilities

- Since the letters in the monogram are curled more than those in the more familiar seal, they can perhaps also be read as numbers: the S as 5, the J as 7, the detached downstroke of the B as the number 1, and the rest of the B as 3.
- Since Christian writers have historically regarded the number 8 as symbolic of resurrection and immortality (Christ rose on the eighth day—the day after the Sabbath) and it is therefore represented in the octagonal shape of baptismal fonts,⁸⁷ it may be intended to represent immortality here (also, perhaps as the

⁸⁵The significance of the crown in the design of Bach’s seal may lie in its relationship to the cross (chi) figure formed by the two intersecting Ss, since contemporary Lutheran teaching stressed that the heavenly crown was achieved through earthly cross-bearing (compare Bach’s *Fulde* canon BWV 1077, with its symbolum “Christus coronabit crucigeros,” and the aria BWV 12/4 with its words “Kreuz und Kronen sind verbunden”). Eric Chafe suggests that the absence of a crown in the goblet’s design may be “the equivalent of the future tense of the [‘Christus Coronabit Crucigeros’] canon; that is, the hoped-for crown has a theological meaning, just as it does in many cantatas.” See Chafe, “Tonal Allegory,” 36.

On the other hand, there are instances of contemporaneous monograms that have their owners’ initials (some apparently with no reference to the chi figure) beneath an image of the crown. Several examples are cited in *Bach-Jahrbuch* (2009): 222. Perhaps the significance of the crown in monograms of commoners derives from the Creation account where God gave Adam and Eve dominion over the created order. In this regard, we may quote Martin Luther’s commentary on Genesis chapters 1–4, where he describes the remnant of this authority after the Adam’s fall: “The influence however which we now have over beasts in this life, the use which we make of them, and the things we cause them to do are not effected by that dominion which Adam possessed, but by industry and art. Thus birds and fishes, as we see, are taken by deception and stratagem; and beasts are tamed in various degrees by art. For those animals which are the most domesticated as geese, fowls, etc., were of themselves and by their own particular nature wild. This leprous nature of ours therefore still retains, through the goodness of God, some appearance of dominion over the other creatures. This dominion however is very trifling indeed, and far, very far, beneath the original dominion. For under that there was no need of art or stratagem, to give man influence over the beast. Every creature was put absolutely under a state of obedience to the voice of God when Adam and Eve were commanded by that voice to have dominion over them.” *Luther’s Commentary on Genesis*, translated by John Nicholas Lenker and Henry Cole (Minneapolis, Minn.: Luther Press, 1910), 94. In this regard, it is noteworthy that Bach claimed to have reached his level of success through hard work: “I was obliged to be industrious. Whoever is equally industrious will succeed equally well.” See Ulrich Siegele and Gerhard Herz, “‘I Had to Be Industrious . . .’ Thoughts about the Relationship Between Bach’s Social and Musical Character,” *Bach* 22/2 (Fall-Winter 1991): 5–12. But more significant in Lutheran teaching was the doctrine of the royal priesthood of all believers, based on the biblical passage from 1 Peter 2:9: “But you are a chosen race, a royal priesthood, a holy nation, God’s own people. . . .” (Revised Standard translation) Thus Luther wrote, “First, with respect to the kingship, every Christian is by faith so exalted above all things that, by virtue of a spiritual power, he is lord of all things without exception, so that nothing can do him any harm. . . . Not only are we the freest of kings, we are also priests forever, which is far more excellent than being kings . . .” Martin Luther, *Treatise on Christian Liberty* (1520), translated by W. A. Lambert and Harold J. Grim. <https://history.hanover.edu/courses/excerpts/165luther.html> accessed 27 October 2020.

⁸⁶Jörg Hansen notes that the bottom swirls of the letters are in the correct order: J-S-B. See Hansen, p. 13.

⁸⁷See Christian Overstolz, “Zum Monogramm und zum Taufstein Johann Sebastian Bachs,” <https://docplayer.org/198782425-Zum-monogramm-und-zum-taufstein-johann-sebastian-bachs.html>, accessed 28 January 2021. See also Nicholas Batzig, “The Theological Significance of Eighth Day,” <https://feedingonchrist.org/theological-significance-eighth-day/>, accessed 29 January 2021.

infinity symbol), while the lower loop of the 8 can be read as a zero.⁸⁸ If the S (now placed centrally) represents a second word (in addition to “Sebastian”), and the letters are read (both as letters and numbers) in a quasi-retrograde manner (left-right-left right), the monogram may be signify a greeting for Bach’s 50th birthday: VIVAT: Semper in aeternam JSB 1735 50.⁸⁹

-The 6 letters of the monogram end in serifs. Because the Bs have separate downstrokes, there are a total of 14 serifs in the monogram. Perhaps they allude by their numerical equivalents in the natural order alphabet to B-A-C-H.

⁸⁸Christian Overstolz argues that the “8” figure with its upper, umbrella-like swirls, depicts a stone pine, while the lower loop, with its 9 crisscrossing segments depicts a pine cone. Tracing the history of the pine tree’s symbolic meaning as a tree of life back to antiquity, he relates these emblems to the images on the baptismal font at Georgenkirche in Eisenach where J. S. Bach was baptized, and ultimately concludes that the design of Bach’s monogram is literally centered on his baptism. What is unclear is why Overstolz disregards the swirls on the bottom of the figure “8,” or more fundamentally, why he apparently assumes that Bach designed the globet’s monogram on himself. Also unconvincing are his conclusions that the monogram incorporates “SDG” (which requires finding a D in the top loop of the B) and that the entire monogram consists of 29 puzzle pieces with numerological significance (which requires the surrounding space to be counted as one of the pieces). As an aside, we note that he does not explain the significance of “1-5” on the baptismal font. Maybe the numbers should be read as 1/15, connoting a date for the Christian equivalent of Passover, since Passover was celebrated on the 15th day of the first month (Nisan) in the Jewish religious calendar and its Christian equivalent is Good Friday. Symbolic references to Good Friday and Easter on baptismal fonts (including the chalice-like shape of the baptismal font itself) are appropriate since the ritual of baptism re-enacts the death and resurrection of Christ.

⁸⁹Did Bach and the Krebs family believe, like Buttstett, that the “foundations of music,” as articulated and practiced on earth, would last into eternity? See Buttstett, title page and 174–75; Ruth Tatlow, “Theoretical Hope,” 54–55. Ruth Tatlow quotes Werckmeister’s statement in *Der Edlen Music-Kunst*, chapter summary, p. 42: “Music is a foretaste of Heavenly Harmony . . . [which] presents to us the Wisdom of God.” (“Die Musica ist ein Vorschmack Himmlischer Harmonie. Durch die Music wird uns die Weißheit Gottes vorgestellt.” Tatlow, “Theoretical Hope,” 55, with footnote 91. Continuing to describe Werckmeister’s view, she writes (footnotes inserted parenthetically here):

Harmony can also be seen in God, eternity and in mankind, and that this causes human beings to rejoice whenever they hear music, because harmony reflects both their own image and the image of the wisdom of God (Werckmeister, *Der Edlen Music-Kunst*, pp. 8–9). The mirror image (a development of Bartholdi’s statement, cited also in Walter, [*Praecepta der Musicalischen Composition*, 1708]), with its perpetual and positive reflection that leads to many good things, leads to the following behavioural application: “we [Christian musicians] must help each other to know how to use [music] to glorify the Almighty Creator and to be wary of all misuse thereof.” (Werckmeister, *Der Edlen Music-Kunst*, p. 12).” Tatlow, “Theoretical Hope,” 55.

Whereas Mattheson made a distinction between sounding and non-sounding Harmony, Werckmeister and Buttstett understood the sounding and non-sounding aspects of Harmony to be an integrated whole, and they believed their view to be the correct scriptural interpretation of harmony. It led them also to believe that well-proportioned music composed on earth would last into eternity.” Tatlow, “Theoretical Hope” 57.

However, as noted above, Pieter Bakker argues that “Buttstett and Mattheson are not at all talking about the continued existence of particular works, but about the continued existence of musical theory.

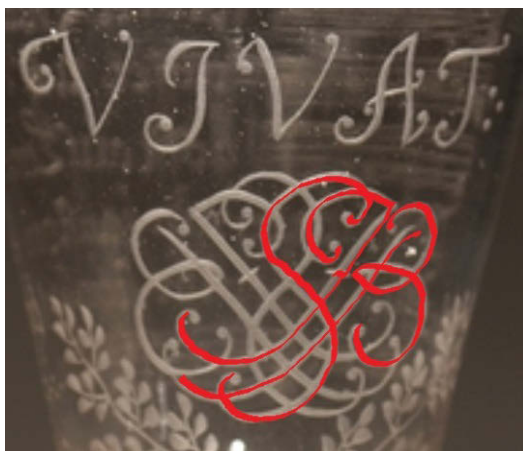


Figure 12. Front of the Goblet with Four Numbers

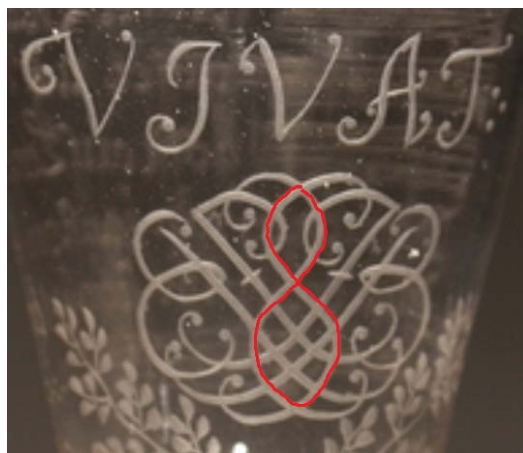


Figure 13a. Image of Number 8

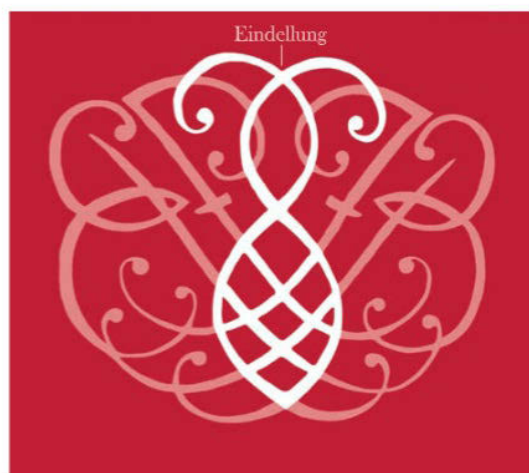


Abb. 7

Figure 13b. Christian Overstolz: Central Figure = Stone Pine and Pine Cone as a “Tree of Life”
(For an evaluation of his ideas, see footnote 87.)

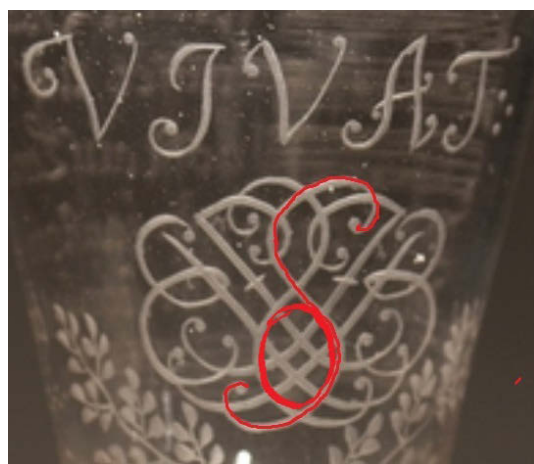


Figure 14. Image of Number 50



Figure 15. Goblet Reverse

The reverse side of the goblet contains a poem with interspersed groups of four notes.

Line 1. B \flat -A-C-H, Theurer Bach! [Perhaps read aloud in German as “B-A-C-H Theurer Bach!”]

Line 2. G-G \sharp -F-F \sharp ruffet, ach! [H-C-A-B down the equivalent of a major 3rd; first note is down a minor 3rd;

Orthographically correct would be G-A \flat -F-G \flat]

Line 3. E-D \sharp -D-C \sharp hofft auf Leben, [C-H-B-A down the equivalent of a major 3rd; first note is down a minor 3rd.

Line 4. So du ihnen nur kanst geben,

Line 5. Drum erhör ihr sehnlich, ach!

Line 6. Theurer B \flat -A-C-H Bach.

B-A-C-H, dear Bach!

G-G \sharp -F-F \sharp calls, Ach!

E-D \sharp -D-C \sharp hopes for life,

Which you alone can give,

Therefore hear their ardent, Ah!

Dear B-A-C-H Bach.

-Lines 2 and 3 have verbs that would normally be read as singular declarative (“somebody calls, “ah.”)⁹⁰

-Line 4 has a verb that is plural declarative (“Which you alone can give to them.”) Conclusion: There are at least 2 donors.

-Line 2 is B-A-C-H in retrograde [H-C-A-B], down four semitones (=a major third). However, normal transposition would be G-A \flat -F-G \flat .

-Line 3. E-D \sharp -D-C \sharp (B-A-C-H in a kind of retrograde [C-H-B-A] down another major third.

-The three lines present the total chromatic pitch set.

“-Bach” is repeated as words and musical notes.

-By using the note G to begin Line 2, the numeric equivalents of lines 1 to 3 and 4 to 6 make a total of 14 and 41, respectively (41 being the retrograde or *Krebs* of 14).

Interpretation

Two primary theories have emerged:

1) The donors were the Krebs brothers, students of Bach.⁹¹

Arguments:

-Lines 2 and 3 are versions of B-A-C-H in retrograde/crab (*Krebs*), an allusion to the Krebs brothers.

⁹⁰Eric Chafe suggests that line 2 should be read as imperative plural (“You people should call ‘ah!’”). See Chafe, *Tonal Allegory*, 27–29.

⁹¹Friedrich Schnapps, “Das Notenrätsel des Bach-Pokals und seine Deutung,” *Bach-Jahrbuch* 35 (1938), 87–94; Friedrich Smend, “Der Pokal im Eisenacher Bach-Museum,” *Bach-Jahrbuch* 42 (1955): 108–112.

-Bach had made a joke about only one *Krebs* (crab) being caught in this *Bach* (brook).⁹² Crayfish can only live in a “Bach.” In this regard, Jörg Hansen notes that the big C (which occurs only in the first staff line of the goblet’s inscription) may depict a literal crab (*Krebs*). He argues further that, because it does not recur in subsequent lines, efforts to create a multi-voice “score” are not justified.⁹³

2) The donors were nobles from Dresden.⁹⁴

Arguments (consisting largely of counter-arguments to the Krebs theory):

-The four-note motto in line 2 is enharmonically incorrect so it is not literally a crab (retrograde) of B-A-C-H.

-The goblet probably came from a Dresden royal glass factory; a similar goblet was given to King August III on 15 April 1733.⁹⁵

-Students would not have addressed Bach as “Theurer”

-The Krebs boys were not rich enough for such a gift.

-While line 2 might refer to Graf von Fleming (G - F), the second line E-D#-D-C# cannot yet be linked to a Dresden noble, but the lamenting quality of the descending chromatic motive may suggest Count Hermann Carl von Keyserling, who was in poor health. (But note that Graf von Fleming had died in 1728, before the presumed date of the goblet’s manufacture.)

Additional Observations and Interpretive Possibilities

- The notes in lines 1 and 2 present Fa-Mi, Fa-Mi and Mi-Fa, Mi-Fa, respectively, while the notes in line 3 complete the chromatic set. Together, the three lines were perhaps intended as an allusion to “Fa Mi et Mi Fa est Tota Musica”—a modification of the common adage as it is found also in Bach’s Faber canon and the canon on the title page of Kirnberger’s *Anleitung*.

- In Bach’s *Entwurf* of 1730, he lists his accomplished students, among them, “Krebs major und minor.”⁹⁶ This phrase presumably refers to Johann Ludwig Krebs (baptized 12 October 1713 – 1 January 1780)⁹⁷ and Johann Tobias Krebs, Jr. (1716–1782). Since Lines 2 and 3 are transposed progressively down the equivalent of a major third and the first pitches are progressively down a minor third (and the third line comprises a descending chromatic minor third), the intervallic arrangement may allude to “Krebs major” and “Krebs minor.”

- Although line 2 is not an orthographically correct retrograde version of B-A-C-H, the author perhaps chose to use sharps to match the accidentals in the third line. Bach often used sharps for cross and cross-bearing.⁹⁸ Perhaps the author wanted to stress *Kreuz* and so avoided flats, using G# and F# instead.⁹⁹

- The numeric equivalents of the notes/letters starting lines 1 to 3 and 4 to 6 result in totals of 14 and 41, respectively. These numbers may allude not only to Bach and J. S. Bach using gematria, but also to “Krebs,” since 41 is the retrograde of 14.¹⁰⁰ The first letters of the lines beginning with words (lines 4 to 6) are S, D, T, perhaps referring to subdominant, dominant, and tonic. Their numerical equivalent is 41, the “Krebs” of Bach (14) and the sum of “J. S. Bach.”¹⁰¹

- The poem is anguished in tone and the presence of the complete chromatic pitch set suggests extreme misery. Traditional theorists of Bach’s time viewed chromaticism as representing earthly imperfection. See, for example,

⁹²See Forkel’s biography of Bach in *New Bach Reader*, p. 457 with footnote 25, which cites Reichardt’s *Musikalsicher Almanach* of 1796, attributing the pun to Bach himself. For a fuller citation of Reichardt, see below.

⁹³See Jörg Hansen, p. 14.

⁹⁴Conrad Freyse, “Ein Bach-Pokal,” *Bach-Jahrbuch* 33 (1936): 101–108; “Die Spender des Bach-Pokals,” *Bach-Jahrbuch* 40 (1953), 109–118; “Noch einmal: Der Bach-Pokal,” *Bach-Jahrbuch* 43 (1956): 162–164.

⁹⁵Freyse 1953, 113–114.

⁹⁶See *NBR* no. 151, p. 150 and *BD I*, no. 22, p. 63.

⁹⁷According to Johann Friedrich Reichardt, “Joh. Seb. Bach . . . zog viele vortrefliche Schüler; mit keinem soll er mehr zufrieden gewesen seyn, als mit Krebs in Altenburg, von dem er auch zu sagen pflegte: das ist der einzige Krebs in meinem Bache.” See Reichardt, *Musikalische Almanach* (Berlin: Johann Friedrich Unger, 1796), IX. Anekdoten aus dem Leben merkwürdiger Tonkünstler, no. 8.

⁹⁸However, in BWV 12/3 he mixes sharps and flats to get a whole chromatic pitch set.

⁹⁹Smend argues that the letters were to be spoken (in the rhythm of the poem) and even if it had been notated with A ♭ and G ♭, it would have had to be read as G-G ♭-F-F ♯ (presumably to match the sounds in line 3, which has sharps. Smend, 111.

¹⁰⁰Smend, 112.

¹⁰¹See Jörg Hansen, 14.

statements by Werckmeister, Buttstett, and Walther, specifying that the closer something is to its origin, the more perfect it is. Conversely, the farther away a proportion is from the unity, the more imperfect it is.¹⁰² Along these lines, Eric Chafe suggests that Bach's *Canon per tonos* is an allegory of earthly life with its imperfections.¹⁰³ He writes, "According to Werckmeister, the temperament required to make these [chromatic] keys useable bore associations of imperfection. . . . The closed circle of keys is not the awaited fulfillment; it remains rooted in the imperfection of temperament and the enharmonic change that is hidden in its realization represents what Werckmeister called a 'grosse Metamorphosis in der Harmonie,' a 'Verdruss,' and not a sign of transcendence."¹⁰⁴ Thus, Chafe argues, Bach's enharmonic canon (per tonus) "Ascendenteque Modulatione ascendat Gloria Regis" (a modulating canon in *The Musical Offering*, which ends a tone higher than it starts and which is inscribed "as the modulation rises, so may the King's glory"), represents not fulfillment/transcendence but the utter limitations and imperfections of earth. It requires proportions that are the farthest from the unity. With the introduction of the seventh partial, "the tones and semitones indicate . . . continued emphasis on mortality and imperfection; the semitone serves as basis only of a man-made system"¹⁰⁵

Since the tone of the poem (both chromatic notes and lyrics) is essentially that of a lament (Friedrich Smend notes that it is hardly congratulatory),¹⁰⁶ perhaps the chalice was also intended as an allusion to Bach's suffering—a cup of sorrow. In this regard we may compare the aria in Bach's 1727 St. Matthew Passion: "Gerne will ich mich bequemen Kreuz und Becher anzunehmen, Trink ich doch dem Heiland nach. . . ." ("Gladly will I submit myself to taking up cross and cup, drinking as my Savior did"). This is supported by antithesis in the poem itself: chiasmic form (ABCBA),¹⁰⁷ and "Ach" vs. "hofft auf Leben." Chafe sees this as a reflection of Luther's Theology of the Cross. "The *ruffet, Ach / hofft auf Leben* antithesis of the goblet poem expresses the cornerstone of this sequence: a life of tribulation lived in hope of the afterlife."¹⁰⁸

• Both Johann Ludwig and his father, Johann Tobias, Sr., were strong supporters of Bach. Johann Ludwig's father studied with both Johann and Bach, and he was especially interested in counterpoint (like Walther, he liked to use canonic structures).¹⁰⁹ His first wife (mother of Johann Ludwig and Johann Tobias, Jr.) died in 1721. In 1723, he married Katharina Dorothea Beyer (mother of Carl Tobias). She was the daughter of a wealthy citizen¹¹⁰ and, as a result, Johann Tobias, Sr. could have helped pay for the goblet.¹¹¹

¹⁰²See Werckmeister, pp. 30 and 101 as noted above; Johann Gottfried Walther, *Praecepta der musicalischen Composition* (1708). See p. 79 of the 1955 edition, where Walther writes: "Reg. 1. Proportio quo vicinior aequalitati eo perfectior. Reg. 2. Proportio quo remotior ab aequalitate eo imperfectior. Das ist. Je näher eine Proportion der Unität oder Gleichheit, je vollkommener und begreiflicher ist sie; je weiter aber eine Proportion der Unität oder Gleichheit abgelegen, je unvollkommener und verwirrter ist sie." Ruth Tatlow also lists Johann Joseph Fux, Lorenz Mizler, and Heinrich Georg Neuss as being in the "same theological climate" as Bach. See *Bach's Numbers*, p. 91.

¹⁰³See Eric Chafe, "Allegorical Music: The 'Symbolism' of Tonal Language in the Bach Canons," *Journal of the American Musicological Society* 3/4 (Autumn 1984): 358.

¹⁰⁴Chafe, "Allegorical Music," p. 361, quoting Werckmeister, *Harmonologia Musica oder Kurze Anleitung zur Musicalischen Composition* (Frankfurt and Leipzig, 1702): 5–6.

¹⁰⁵Chafe, "Allegorical Music," 361–362.

¹⁰⁶"Schwerlich ist dies eine Congratulation." See Smend, "Der Pokal im Eisenacher Bach-Museum," *Bach-Jahrbuch* 42 (1955): 109.

¹⁰⁷See Chafe, *Tonal Allegory*, 28.

¹⁰⁸Chafe, *Tonal Allegory*, 36; for the full discussion, see 33–37.

¹⁰⁹*MGG* 7, col. 1727.

¹¹⁰*MGG* 7, col. 1727.

¹¹¹Could Wilhelm Friedemann have brought the goblet from Dresden? During the later 1720s, "Friedemann accompanied his father several times to Dresden and thus became familiar with the city where he was later to live and work. . . . Bach took up his duties [in Dresden] on 1 August 1733; he was required only to play the organ for divine service and for the figural music performed on feast days, for which he was paid a modest salary of about 80 Reichsthaler. However, the appointment gave him time to pursue other interests. He cultivated the acquaintance of Dresden court musicians such as J. G. Pisendel and S. L. Weiss, and presumably took an active part in the musical life of the court. . . . It seems certain that he made close contacts with music-loving aristocrats, including the Russian ambassador Count von Keyserlingk . . ." Christoph Wolff and Peter Wollny in *New Grove Online*, s.vv. "Bach, Wilhelm Friedemann," accessed 22 October 2020.

Both Johann Tobias, Sr., and his son Johann Ludwig served as copyists for Bach.¹¹² Johann Ludwig was, in fact, one of the most zealous guardians of Bach's legacy,¹¹³ even writing a fugue B-A-C-H (which, incidentally, combines the B-A-C-H motive with a descending chromatic minor third or fourth).¹¹⁴ As a famous organist and composer of organ works, he was especially known for his fugues (which show remarkable linear tension)¹¹⁵ and for his chorale arrangements.¹¹⁶ However, after studying some nine years with Bach (from 27 July 1726 until May of 1735),¹¹⁷ he had trouble getting a job. Already in 1733 he had unsuccessfully applied for an organ position in Naumburg.¹¹⁸ Bach then wrote a recommendation for another (unidentified) application on 24 August 1735.¹¹⁹ But Johann Ludwig remained in Leipzig, studying law and philosophy at the University of Leipzig,¹²⁰ playing harpsichord in Bach's Collegium Musicum, and serving as substitute director for Bach in Bach's church duties.¹²¹ He finally got an organ post on 4 May 1737, at the Marienkirche in Zwickau, citing that he had studied keyboard and composition under Bach.¹²² Given this state of affairs, it is reasonable to assume that, as he neared the end of his studies with Bach, Johann Ludwig clung to his master teacher for professional support, and that he was empathetically aware of Bach's deep disenchantment with church officials in Leipzig at that time.

¹¹²Many of Bach's organ works are preserved solely through Johann Ludwig's manuscript copies. See *MGG* 7, col. 1738.

¹¹³*MGG* 7, col. 1732.

¹¹⁴There are three extant manuscripts. See *MGG* 7, col. 1727.

¹¹⁵"linearer Spannkraft" (*MGG* 7 col. 1733). See Krebs's chorale prelude on "Ach Gott, erhöre mein Seufzen." WV 513, which covers all 12 pitch classes in the first 5 beats of the piece and incorporates the ascending chromatic tetrachord 12 times in 36 measures (total length is 49 measures). This is a good example of depicting total misery with chromatic completion. The text of the chorale, as given in Gottfried Vopelius's *Das privilegierte Vollständige und vermehrte Leipziger Gesangbuch . . .* (Leipzig, 1758), no. 733 (p. 326), vividly describes the poet's misery in a prayer of supplication:

Ach Gott! erhöre mein Seufzen und Wehklagen, laß mich in meiner Noth nicht gar verzagen: Du weißt mein'n Schmerz, erkennst mein Herz; hast du mirs aufgelegt, so hilf mirs tragen.

Ohn deinen Willen kann mir nichts begegnen; du kannst verfluchen, und auch wider segnen: Bin ich dein Kind, und habs verdient, gib wieder Sonnenschein nach trübem Regnen.

Pflanz nur Geduld durch deinen Geist ins Herze, und hilf, daß ich es acht für keinen Scherze: Zu deiner Zeit wend ab mein Leid; durch Mark und Bein dringt mir der große Schmerz.

Ich weiß, du hast meiner noch nie vergessen, daß ich vor Leid mir sollt mein Herz abfressen. Mitten in Noth denk ich an Gott, ob er mich schon mit Kreuz und Angst thut pressen.

Es hat kein Unglück nie so lang gewähret, es hat doch endlich wieder aufgehört: Beut mir dein' Händ', und machs ein End; auf dieser Erd mein Herz nichts mehr begehret.

Soll ich noch mehr um deinetwillen leiden; so steh mir, Herr! mit deiner Kraft zur Seiten: fein ritterlich, beständiglich, hilf mir mein' Widersacher all' bestreiten.

Daß ich durch deinen Geist mög überwinden, und mich allzeit in deinem Haus laß finden, zum Preiß' und Dank, mit Lobegesang: Mit dir thu ich in Liebe mich verbinden.

Daß wir in Ewigkeit bleiben beysammen, und ich allzeit dein'n auserwählten Namen preis' herzelich: Das bitt' ich dich, durch Jesum Christum, unsern Herren. Amen!

At least two additional stanzas can be found in other online sources, which seem less reliable because of their spelling errors.

Bach also set this chorale in simple four-part arrangement, BWV 254 (which does not cover all 12 tones).

¹¹⁶Regarding J. L. Krebs's chorale arrangements, see *MGG* 7, cols. 1730, 1731, 1733.

¹¹⁷*BD* I, no. 71.

¹¹⁸*BD* I, no. 71, p. 140.

¹¹⁹*BD* I, no. 71.

¹²⁰*MGG* 7, col. 1727.

¹²¹*MGG* 7, col. 1728.

¹²²*BD* I, no. 71, p. 140.



Figure 16. Johann Ludwig Krebs - Fugue on BACH, mm. 1–17

Bach's Lamentable Circumstances around 1730

Evidence of Bach's disenchantment with his position after 1730 has been well documented but we will review some key developments here. In 1729, Bach takes over directing the Collegium. On 23 August 1730, he writes the *Entwurf*, outlining the minimum resources required for him to fulfill his duties. On 28 October 1730, he writes to Georg Erdmann outlining his difficulties in Leipzig and exploring the possibility of moving. On 27 July 1733, he writes a letter to the Elector asking for the court title of composer-in-residence (enclosing presentation parts for a *missa*) to boost his status and authority in Leipzig. In 1735, he completes the Christmas Oratorio with its many parodied movements. The following years were marked by his acrimonious conflict with the rector about the authority to appoint of prefects.¹²³

Furthermore, Bach lost a number of talented singers in the years 1730–1735, among them three sons. The students included:¹²⁴

- C. P. E. Bach (1714–1788), Bach's pupil at St. Thomas 1723–1731. On 1 October 1731, Emanuel matriculated at Leipzig University; in September 1734 he moved to the university in Frankfurt an der Oder.
- Wilhelm Friedeman Bach (1710–1784), Bach's pupil at St. Thomas 1723–1733.
- Christian Friedrich Schemelli (1713–1761), Bach's pupil at St. Thomas 1731–1734.
- Johann Gottfried Bernhard Bach (1715–1739), Bach's pupil at St. Thomas 1723–1735.
- Johann Ludwig Dietel (1713–1773), Bach's pupil at St. Thomas 1727–1735.
- Johann Ludwig Krebs (1713–1780), Bach's pupil at St. Thomas 1726–1735.

Although Bach had lost interest in writing church cantatas by 1730, he wrote a very aggressive one at the beginning of 1735. "Wär Gott nicht mit uns diese Zeit," BWV 14, performed on 30 January, is based on Luther's hymn paraphrase of Psalm 124,¹²⁵ which rails against the psalmist's enemies while celebrating divine protection. Perhaps intended to fill a gap in Cycle II at the fourth Sunday after Epiphany (a Sunday that had not occurred in 1725 because Easter fell early), the cantata is strikingly operatic, with advanced chromatic harmonies contrasting sharply in the first movement with a retrospective motet style and structure (stringent counterpoint with inversion, absence of ritornello, and instrumentally delivered cantus firmus).

¹²³Bach had been on good terms with the rector as early as September 1735, when he requested Ernesti to serve as godfather to his last son, Johann Christian. Ernesti had also served earlier as godfather to an older son, Johann August Abraham. See Christoph Wolff, *Johann Sebastian Bach. The Learned Musician* (New York: W. W. Norton, 2000), 349, 500 f.n. 24. For an account of the dispute, see *NBR*, nos. 180–186. It is noteworthy that a Krebs (presumably Johann Ludwig) stepped in to direct the first choir on August 12, 1736, when Bach's fight with Rector Johann August Ernesti over the appointment of prefects reached a crisis point. See Bach's letter to the Leipzig town council dated the next day, in *NBR*, no. 182 (p. 174), *BD I*, no. 33 (pp. 85 and 87). By the 1740s, Bach apparently led few choir performances himself, relying on prefects to do this. See Michael Maul, "'Having to perform and direct the music in the Capellmeister's stead for two whole years': Observations on How Bach Understood His Post during the 1740s," translated by Barbara M. Reul, *Understanding Bach* 12:37–58.

¹²⁴See <https://www.bach-cantatas.com/Other/Pupil-List.htm#B>, accessed 21 October 2020. See also *NBR*, pp. 315–17.

¹²⁵Interestingly, Bach left no markings at this psalm in his Calov Bible Commentary.

Over the period of about seven-and-a-half years at this time, Bach also experienced many family deaths:
 on 29 June 1726, a three-and-a-half year-old daughter,
 on 1 November 1727, a newborn son,
 on 21 September 1728, a three-and-a-half-year-old son,
 on 4 January 1730, a newborn daughter,
 on 31 August 1732, a one-and-a-half-year-old daughter,
 on 25 April 1733, a four-and-a-half-year old daughter, and
 on 6 November 1733, a newborn son.

Bach's despair and resignation is also apparent from many passages that he marked in his 1733 Calov Bible Commentary.¹²⁶ Given Bach's vocation as a musician, one would expect the Psalms to receive a great deal of attention. As a Lutheran church composer, he might be expected to focus on theological biblical books such as the St. Paul's epistle to the Romans. Instead, of a total of 267 pages marked by Bach, 43 (16%) are from the short book of Ecclesiastes. That is more than 9 times its proportionate share in terms of overall length of the Bible. As Eric Chafe notes,

Ecclesiastes is especially interesting in this regard, for it is the most pessimistic, virtually nihilistic book of the Bible . . . Yet Bach usually underlines, not the extraordinarily harsh text itself, but Calov's commentaries. The reason for this seems clear. Because it is based on the negative tone of Ecclesiastes, the commentary reiterates the fundamental doctrine of Luther's theology of the cross: the patient endurance of suffering, persecution, worldly injustice, and the like (after the model of the Christ of the Passion), and the necessity of leaving the outcome of events both worldly and spiritual in God's hands."¹²⁷

John Eliot Gardiner writes,

It is entirely possible that Bach's growing disenchantment with cantatas in the 1730s arose from a sense that the communality of belief that he had once shared with his congregation was breaking down, and that, for whatever reason, he was now failing to make his mark. . . . The official accusations leveled at him in this decade—that he was in essence “working to rule”—can be interpreted not so much as a sign of any indifference to his responsibilities, let alone as a personal loss of faith, but as a protest at the shabby way the council, the consistory and the school rector were treating him, and his resignation to the likelihood that things would never change as long as he remained in Leipzig . . . Now Bach the church cantata composer-performer starts to fade out of vision¹²⁸

The extended Krebs family undoubtedly knew of Bach's disenchantment. In this connection, Eric Chafe writes,

The last lines of the poem [on the goblet] can now be interpreted as beseeching the composer to provide more artistic and spiritual manna, even perhaps, more church music. Such an entreaty from his pupils, set in the language of musical notes, came at a time when Bach's regular production of new church music might have fallen off somewhat, when, in the 1730s, the composer had turned to publishing instrumental music and consolidating the large church works of the preceding decade.¹²⁹

It is evident that Bach began a period of self-reflection as he neared his 50th birthday—perhaps not surprisingly, since both of his parents had died shortly after turning 50. It was evidently at about this time that Bach compiled what his son, Carl Philipp Emanuel, called the Old-Bach Archive. Christoph Wolff notes,

¹²⁶Richard Cox, *The Calov Bible of J. S. Bach* (Ann Arbor, Mich.: UMI Research Press, 1985).

¹²⁷Chafe, *Tonal Allegory*, 38.

¹²⁸John Eliot Gardiner, *Bach: Music in the Castle of Heaven* (New York: Alfred A. Knopf, 2014), 528.

¹²⁹Chafe, *Tonal Allegory*, 34.

The Archive contained most of the surviving compositions produced by the older generations of the Wechmar line Bach family It happened that Bach amassed the Archive at about the time that he witnessed, with pride, his older sons leaving the parental home and taking up careers as professional musicians in their own right. . . . [Furthermore,] in about 1735, . . . Bach undertook a careful documentation of both a family tree and a Genealogy that contained a brief commentary on each male member—virtually all of them musicians—to complement the Archive. Bach, at the age of fifty, was opening a broad historical spectrum that induced him to look in two directions: the musical past of the family and its future—ancestors on one side and his own children on the other—with himself in the middle. The past, present, and future of the family tangibly mirrored the past, present, and future of the music within his realm and reach. His own music would now serve as a foundation for the music of a new generation, which also included his students . . . So he embarked on a journey of reflection to critically survey his major works and set the stage for such large-scale projects as *The Art of Fugue* and the *B-Minor Mass*.¹³⁰

In view of Bach's struggles around 1730–1735 and, more particularly, his disengagement from church music during that time, we may surmise that the Krebs family sought to get him re-involved and used the chromaticism inherent in the spelling of Bach's name (in three transpositions) to clothe their message. While the chromatic nature of B-A-C-H, in its most immediate sense, suggests an aspect of lamentation, it may also symbolize “cross” or “cross-bearing”—the latter being a central theme in Lutheran theology. Thus, Erich Bergel writes,

Das B-A-C-H in [Bachs] “Kunst der Fuge” ist nicht nur ein persönliches autobiographisches Bekenntnis, sondern es ist ein Symbol, dessen Chromatic er selber mit den Worten “Christus Coronabit Crucigeros” gedeutet hat.”

(The B-A-C-H in [Bachs] “Art of Fugue” is not merely a personal autobiographical confession; rather it is a symbol whose chromaticism that he himself interpreted with the words “Christus Coronabit Cruicigeros.”)¹³¹

Eric Chafe explains,

The name [BACH] was melodic in an interesting manner, for it made use of the variable mi/fa that signified the “poor weak singer”¹³² yet it moved, potentially at least, from flat to sharp and from minor to major, like the “Christus Coronabit Crucigerros”¹³³ canon, which introduces (incidentally) the tones of Bach's name when it moves from flat to sharp and minor to major harmonics toward the end. (See the tone sequence B flat, A, [D], C, B at the end of the fourth measure of the second part.)¹³⁴

Whether or not Bach intended to imbue the B-A-C-H motive with such symbolism, it is clear that one reason for Bach's misery in the 1730s was his increasing alienation from prevailing musical trends. Even though he synthesized traditional and progressive styles in his later works, Bach tended to favor complexity—a learned style in which chromaticism played an important part. As the dispute with Johann Adolph Scheibe ultimately demonstrated, Bach's values put him increasingly at odds with proponents of the Enlightenment, not the least of whom was Johann August Ernesti, rector at St. Thomas from 1734,¹³⁵ who was undermining the role of music at the St. Thomas

¹³⁰See Wolff, *Johann Sebastian Bach: The Learned Musician*, 420–21.

¹³¹Ergel Bergel, *Bachs letzte Fuge* (Bonn: Brockhaus, 1985), 195, cited in Chafe, *Tonal Allegory*, 51.

¹³²“Luther . . . described the mi/fa semitone as analogous to the Gospel and the other tones to the Law, for the Gospel gave the law its meaning; furthermore he called the Dorian mode an analogue of the ‘poor weak sinner’ because of its use of the variable B fa/mi.” Chafe, *Tonal Allegory*, 39.

¹³³Christ crowns the cross-bearers. For a discussion of the theological message of this riddle canon, see Melvin Unger, “Chiastic Reflection in the B-Minor Mass: Lament's Paradoxical Mirror,” in *Exploring Bach's B-minor Mass*, ed. Yo Tomita. (London: Cambridge University Press, 2013), 135–36.

¹³⁴Chafe, *Tonal Allegory*, 39–40. See also p. 51.

¹³⁵See Christoph Wolff, *Johann Sebastian Bach*, 323.

School.¹³⁶ In her study of Bach's wedding cantata, BWV 210 (a parody of an earlier work, *O angenehme Melodei*, BWV 210a), Charlene Pauls argues that Bach's juxtaposition of galant elements with extremely chromatic, newly composed recitatives reflects his personal response to the aesthetic debate of his time. She writes,

That there was a specific intention to address the progressive critics who denigrated traditional musical forms cherished and honed by Bach is evident in both textual and musical amendments made in *O holder Tag* [BWV 210]. Terms that were intimately associated with the intense aesthetic debates of the day, such as *Melodie*, *Harmonie* and *angenehme*, are put into entirely different contexts in the later revised version. Whereas the title and subsequent plot of BWV 210a celebrates the *angenehme Melodei*, or "pleasing melody" of Music as conveyed in a "pleasing" galant style of composition, all references to *Melodie* disappear in BWV 210. Instead, *Harmonie* becomes the central focus of the amended text. After the opening pointedly ironic twists of plot that present *Harmonie* as a source of derision, an impassioned argument in its favour forms the core of the libretto. I posit that this change of emphasis is not coincidental. Musically, the newly composed inner recitatives create another poignant dichotomy underscoring the message. Whereas *O angenehme Melodei* interpolates galant arias with more typical, transitional recitative movements, the new recitatives written for *O holder Tag* are some of the most complex, lengthy, and chromatic recitative writing found in any of his cantatas. The insertion of these movements serves to transform the context of the contiguous arias both through the lengthy texts as well as through the chromatic harmonies employed. Again, the replacement of these key central recitatives transforms the work to such a degree that their inclusion speaks of Bach's deliberate intent to create new significance to the message. The calculated dichotomies of this cantata, a work infused with galant idioms used as a vehicle for Bach to address critics dismissive of polyphonic complexity, serve to magnify the impact of the message. The duality of the music and message actually serves to heighten the impact and create a more powerful musical response than any of the written rebuttals produced by Bach's defenders.¹³⁷

CONCLUSION

It is clear from our survey of Bach's sacred cantata recitatives that Bach used chromatic saturation to depict utter misery, depravity, and/or hopelessness, apparently occasionally even aligning chromatic completion with significant measure spans. Although he embraced some of the galant idioms of his progressive contemporaries, he cherished the intricacies of traditional counterpoint. What is less clear is the extent to which Bach identified with the musico-theological theories of his fellow countrymen Werckmeister and Buttstett. Did Bach care about speculative matters? C. P. E. seems to dismiss the idea, when he wrote to Forkel, his father's biographer, on 13 January 1775,

¹³⁶Philipp Spitta writes, "The most nationally German of all the arts was looked upon no longer as a means of culture, but as a ground of contention. And not by him alone; for the rest of the professors, some of whom had been Ernesti's pupils, followed their rector's lead, and thus Bach fell more and more into an isolated and doubtful position." (Spitta, *Johann Sebastian Bach* [New York: Dover, 1951], translated from the German by Clara Bell and J. A. Fuller-Maitland, vol. 3, p. 13. When Johann Gottlieb Biedermann, rector of the school in Freiburg, published a pamphlet in May 1749 in which he called all musicians depraved and wicked, Bach was so incensed that he commissioned Christoph Gottlieb Schröter of Nordhausen to write a rebuttal—a response Bach ultimately considered too weak and consequently rewrote (to Schröter's great frustration). See Wolff, *Johann Sebastian Bach*, 423–24. Bach's 1749 revision of BWV 201, "Der Streit zwischen Phoebus und Pan" is seen, in part, as a response to Biedermann (Wolff, *Johann Sebastian Bach*, 445). BWV 210, although written earlier (1741?), confronts similar sentiments. See, for example, the fourth recitative (characterized by a highly chromatic vocal line and six tritone leaps in the continuo bass), with its text: "Soll die Music verderben, die uns so grossen Nutzen gab? . . . O nein! . . . In dessen lass' dich nur den blassen Neid verlachen, was wird sich dein Gesang aus Satans Kindern machen? Genug, das dich der Himmel schützt, wenn sich ein Fein auf dich erhitzt. Getrost, es leben noch Patronen, die gern bei deiner Anmut wohnen." (Shall music, which has been of such great service to us, perish? . . . Ah, no! . . . Meanwhile, laugh at pallid envy; of what concern are Satan's children to your song? Enough that heaven protects you when a foe fumes at you. Be comforted that there are still patrons who would gladly live by your charms.)

¹³⁷Charlene Pauls, "Cantata BWV 210, "O holder Tag, erwünschte Zeit," A Response by Bach to a Changing Musical Aesthetic," doctoral dissertation (University of Toronto, 2013), pp. 204–205.

The account of my late father's life [given] in Mizler, dearest friend, was thrown together by the late Agricola and myself in Berlin, and Mizler added just the section from the words "He joined the Society" to the end. It is not worth much. The departed, like myself or any true musician, was no lover of dry mathematical Stuff.¹³⁸

Furthermore, Mattheson's 1740 *Grundlage einer Ehren-Pforte* reports that Lorenz Mizler's study with Bach included as little of the mathematical foundations of music as his studies with Mattheson.¹³⁹ Bach's love of contrapuntal artifice (which progressive theorists disparaged) is especially obvious in his canons. Some of his works also appear to indicate an affinity for Werckmeister's emphasis on "ratio" and the traditions of solmization. Perhaps Bach even thought that perfect proportions would endure to eternity. Although Bach was very aware of the new "gusto" in which sense/affect was overtaking number/proportion (with the related preference for immediately appealing melody over the intricacies of counterpoint), like Werckmeister, he was practical.¹⁴⁰ In 1722, he responded by demonstrating his contrapuntal craft within the chromatic possibilities of a well-tempered tuning system. That this entailed embracing "imperfections," did not dissuade him. In fact, Bach's approach to chromaticism in the following decades allowed him to demonstrate his mastery of "tota musica" while expressing his own life philosophy of sustained, faithful vocational service despite the injustices and vicissitudes of life. However, this commitment to vocational perseverance did not preclude turning to other pursuits, which began as early as 1729. Having completed a substantial and varied corpus of music for the Lutheran service, and experiencing ongoing impediments in his contractual duties, Bach turned to activities and projects that held personal interest for him, among them, directing the Collegium Musicum and creating summative works in various genres. Perhaps the donors of the Bach goblet hoped that their gift—with its allusions to associations that chromaticism had for the master—would persuade Bach to reconsider these priorities.

¹³⁸Translated by David Rumsey, "Bach and Numerology: 'Dry Mathematical Stuff?,'" *Sidney Society of Literature and Aesthetics* 7 (1997), 143.

¹³⁹Dieser hat ihm gewiß und wahrhaftig eben so wenig die vermeinten mathematischen Composition-Gründe beigebracht, als der nächstgenante. Dafür bin ich Bürge." (This one [i.e., Bach] certainly and truly taught him [i.e., Mizler] as little about the supposed mathematical foundations of compositions as the one mentioned next [i.e., Mattheson]. I can guarantee that.) See Mattheson, *Grundlage einer Ehren-Pforte* (Hamburg, 1740), p. 231.

¹⁴⁰Pieter Bakker writes, "Werckmeister, in contrast to the theorists on which he based his work, was a man of practical experience. In his writings, the universal music of the quadrivium is connected with things of the world. This combination doesn't only lead to a broad-minded view of history, whereby Werckmeister differs from the earlier Praetorius and the later Mattheson in that he doesn't regard his own time as the absolute highpoint, but also explains his progressiveness in music-technical matters. He respects older writers and composers and at the same time thinks that the future still has lots of good things in store. Music had not yet achieved its ultimate goal. F.n. 18: Andreas Werckmeister, *Hypomnemata musica* (Quedlinburg 1697), pp. 36 and 41. "Den GOtt würde unsern Nachkommenden noch viel Wunder erzeugen [. . .] GOtt offenbahret seine Wunder, immer, nach einer Zeit zur andern, uns anders and weiter, als unsern Vorfahren." [For God will reveal many wonders to those who come after . . . God reveals his wonders continually from one age to the next, further and broader to us than to our forebears.]