PERFORMING BACH CANTATAS WITH MODERN ORCHESTRAS: A MODERN CONDUCTOR'S HANDBOOK FOR APPLYING HISTORICALLY INFORMED PRACTICE TO TODAY'S ENSEMBLES

by

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Part I: Summary of the Current Research

This study provides historical information about Johann Sebastian Bach and his cantatas, with the goal of aiding modern musicians in making more informed performance choices. First, this thesis discusses the scholarship regarding Bach's cantatas. Then, it examines the stages of Bach's professional life and how these events influenced the ways in which he composed his works and his view of their importance. This thesis also looks at the different trends of musical styles, orchestration, and orchestral practices that were developing in early 18th century Protestant Germany.

Much of the detail provided looks at the characteristics of Bach's orchestras, since he developed his compositions based upon the skills of the individuals with whom he worked. As a practical composer, Bach focused on which parts needed to be altered to compensate for a lack of skilled musicians, such as the omission of the second violin in the Fifth Brandenburg Concerto (see pg. 24). This practice allowed him to compose more freely when he had strong players, such as the virtuosic flute solos in several of the second cycle of his *Leipziger* cantatas (see pg. 14). The analyses provided in this thesis will help present-day musicians determine their priorities while performing Bach's cantatas on modern instruments.

Chapter 1: THE CONTEXT OF CANTATA COMPOSITION AND PERFORMANCES

This chapter provides an overview of Bach's cantatas with a specific focus on information that will help modern performers to understand source materials in historical context. The first part of this chapter explores Bach's cantatas before 1723. These cantatas were composed and performed under varied circumstances, with Bach residing in and traveling to numerous cities working with ensembles of different sizes, musicians of different levels of capabilities, and varied expectations from his employers and audiences. The second part focusses on Bach's Leipzig cantatas, those performed after Bach accepted his cantorship in Leipzig in 1723. These cantatas were composed for a comparably stable set of musicians under more uniform circumstances. Particular emphasis is placed on the different themes of Bach's cantata cycles and the musicians he worked with to help contextualize how they influenced Bach's composition. These discussions are intended to aid modern musicians in making historically informed choices when performing these cantatas.

Early Cantatas

Bach's Vocal Works

Before the mid-19th century, Bach's vocal works were rarely given the same weight as his instrumental works.[1] Even after Mendelssohn revived Bach's body of work, it was the later and larger pieces such as B minor Mass and the Passions that garnered the most attention.[2] The often overlooked genre of cantatas, however, should not be ignored. These earlier cantatas of Bach may inform us regarding the expected size and balance of his performing force—and while these are

[1] Christoph Wolff, "Bach's Pre-Leipzig Cantatas: Repertory and Context" in *The World of Bach Cantatas*, ed. Christoph Wolff, translators Cees Bakker and Margaret Ross-Griffel, (New York: W. W. Norton & Company, 1997), 3.
[2] Library of Congress, Music Division, "Felix Mendelssohn: Reviving the Works of J.S. Bach," Library of Congress, accessed February 11, 2019, https://www.loc.gov/item/ihas.200156436/.

indeed "early" cantatas, Christoph Wolff, in the book *The World of Bach Cantatas*, reminds his readers that even as early as Bach's Weimar tenure in 1714, he was already a 30-year-old experienced composer. To contextualize, Bach's Passacaglia in C minor, BWV 581, one of Bach's most important organ masterpieces, had already been composed four years prior. In 1717, Johann Mattheson wrote, "I have seen things by the famous organist of Weimar, Mr. Joh. Sebastian Bach, both for the church and for the fist, that are certainly such as must make one esteem the man highly."[3] Thus, it is important to understand that the designation of "early" by no means implies that Bach's early works lack in maturity and mastery, even if, historically speaking, they were not performed as often as his later works.

Bach composed relatively fewer cantatas before his time at Leipzig (1723–1750), and practically none during his time at Cöthen (1717–1723). Therefore, I consider all of his pre-Leipzig cantatas as early cantatas in this study, despite having served dramatically different functions, target audience, and performance under varied circumstances. Among the early cantatas, I further categorize them into cantatas premiered before 1714 and after his promotion to *Konzertmeister* in Weimar in 1714.

Before 1714: Weimar, Arnstadt, Mühlhausen, and Back to Weimar

One of the most notable trends already evident in Bach's earlier works is the influence of different styles. Bach, early on, laid the groundwork of his future development with an openness to learn and adopt new styles. Conveying Bach's early development as a self-taught composer was so important to his son Carl Philip Emmanuel (C. P. E.) Bach that in a letter referencing his father's relationship to composer George Böhm, C. P. E. Bach crossed out the phrase, "his Lüneburg teacher Böhm," and replaced it with, "the Lüneburg organist Böhm".[4]

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[3] Ibid., 6.
[4] Peter Williams, *Bach—A Musical Biography*, (Cambridge: Cambridge University Press, 2016), 39.

Apart from studying music by others and thus learning a diverse range of styles, Bach was influenced, especially when writing for ensembles, by orchestras and choirs of the time and their specific musical styles.[5] At around the same time as his stay in Lüneburg, Bach visited Hamburg repeatedly. Although those trips are primarily memorable for his encounter with organist Reincken, Bach exposed himself to Hamburg's international music scene, which at the time was predominantly Italian. Musicologist Peter Williams, in *Bach—A Musical Biography*, stated that Bach was quite possibly influenced by having heard Italian arias and recitatives sung in Hamburger theaters.[6] In terms of ensemble music, records show that Bach first attended a major orchestral performance in the city of Celle by the Hofkapelle Celle (court orchestra of Celle), a famous regional ensemble of the time. According to C. P. E. Bach, the ensemble consisted mainly of French musicians.[7] Bach heard the ensemble perform around 1700, and, according to the pamphlet *Obituary*[8] that C. P. E. Bach and Johann Friedrich Agricola wrote, it "[gave him] a good grounding in French taste, which at the time was something totally new in those parts [of the world]".[9] At an early age, Bach, a young church musician coming from the German Lutheran tradition, found himself influenced by both Italian musical ideas and French tastes. The French influence could easily be seen in Bach's much later keyboard work *Ouvertüre nach Französischer Art*, BWV 831, and his orchestral suites. Williams believes that even though most of Bach's works reflect the Italian style, his early works also show a certain degree of French influence, perhaps tracing back to these early 1700s influences.[10]

A few years after Bach's visit to Celle, Bach went on a trip to Lübeck. The Lübeck trip is famously known for Bach's encounter with Buxtehude and the influence that Buxtehude's organ

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[5] Hans-Joachim Schulze, "Johann Sebastian Bach's Orchestra: Some Unanswered Questions," *Early Music* XVII, no. 1 (1989): 3–16, doi:10.1093/earlyj/xvii.1.3.
[6] Williams, *Bach—A Musical Biography*, 49.
[7] Ibid.
[8] The *Obituary*, alternatively titled *The Necrology*, is a pamphlet C. P. E. Bach and Agricola collaborated on that was published 1750. The pamphlet gave a detailed account of J. S. Bach's life and work.
[9] Ibid.
[10] Williams, *Bach—A Musical Biography*, 53.

playing had on Bach. However, just like the trips to Hamburg, the orchestral influences in Lübeck also had a lasting effect on Bach. During his stay, Buxtehude organized a memorial service along with a civil celebration.[11] It was recorded as having a large orchestra of 25 "violins".[12] Whether the term "violins" means 25 string players or 25 violins alone is not clear, but regardless, this would have already been considered an enormous orchestra for the time.[13] One could hypothesize that this visit put the sound of BWV 71, an early cantata, in Bach's ears. BWV 71 is almost certain, from internal and external evidence, to be conceived with the anticipation of being performed by a large force of musicians.[14]

There is no record of Bach having produced any vocal work during his first position as court musician in Weimar in 1703. Even while serving in his next position in Arnstadt seven months later, he was only tasked to compose for a small number of weddings, funerals, and other celebrations.[15] BWV 4, a cantata widely attributed as Bach's first major cantata, is the only cantata currently known from this time period.[16] Bach used this cantata to apply for his next position as organist at Mühlhausen. A short, one-year stay in the city produced the aforementioned BWV 71. He was later hired again in Weimar as organist and chamber musician in 1708 but was only tasked to start composing regular church music in 1714.

Bach composed most of his earlier works (i.e. pieces composed before 1714) for special occasions, and these works had varying performing forces among them. Due to the nature of special and civic occasions, some of the works before 1714 were scored for larger forces than his later cantatas in Weimar, which were composed for normal weekly or routine religious services

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[11] Schulze, "Johann Sebastian Bach's Orchestra: Some Unanswered Questions."
[12] Ibid.
[13] Spitzer provides a list of known orchestra sizes in Table 7.1 (pp. 222–224) of his book *The Birth of the Orchestra*. Among the German major orchestras and courts of the late 17th and early 18th centuries, only one orchestra, the 1712 Vienna court orchestra, had more than 25 string players. This is not to mention the difference between Vienna, an influential cultural center, and Lübeck, a provincial town.
[14] Scoring for a polychoral group of four choirs with at least 14 different parts, and even if BWV 71 was performed on one-to-a-part, it would have already been a comparably large ensemble for the time.
[15] Wolff, "Bach's Pre-Leipzig Cantatas: Repertory and Context," 10.
[16] Ibid.

(see Table 1). The performing forces and context for these earlier works should be examined on a work-by-work basis, as their respective sizes are not indicative of the sizes of the regular ensembles of the time or Bach's typical orchestras.

Table 1 Select Cantatas Before 1714[17]

BWV	Year	Instrumentation	Minimum Instrumentalists Required
4	1707	cornetto, 3 trombones, 2 violins, 2 violas, continuo	10
131	1707	horn, oboe d'amore, bassoon, violin, 2 violas, continuo	8
143	1708	3 corni da caccia, timpani, bassoon, 2 violins, viola, cello, continuo	11
71	1708	3 trumpets, timpani, 2 flutes, 2 oboes, bassoon, 2 violins, viola, cello, violone, continuo (and separate organ part)	15/16
208	1713	2 corni da caccia, 2 flutes, 2 oboes, oboe taille, bassoon, 2 violins, viola, cello, continuo	13

After 1714: Weimar's Later Years

In 1708, Bach declared that he aimed to compose music with the goal of "namely, a well-regulated church music to the glory of God."[18] Even though most of his works before 1714 were originally commissioned for special occasions, one could imagine that he composed some of the works with this stated goal in mind. An example would be the cantata BWV 21, composed just a year before Bach became *Konzertmeister*.[19] It was designated to be performed on the third Sunday after trinity with corresponding scripture readings, yet it was also inscribed on the page to be performed "in ogni tempo" (for any time).[20]

In 1713, Bach composed an audition cantata for a position in the city of Halle in modern Germany; Bach was offered the position but turned it down. Scholars traditionally believe he did

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[17] Compiled from Alfred Dürr, *The Cantatas of J. S. Bach* (Oxford: Oxford University Press, 2005) and Barënreiter Neue Bach-Ausgabe orchestral parts.
[18] Wolff, "Bach's Pre-Leipzig Cantatas: Repertory and Context," 5.
[19] In this context, *Konzertmeister* literally means the master of the concert, or one who oversees ensemble music performances, rather than the lead first violin player.
[20] See manuscript inscription at Johann Sebastian Bach, *BWV 21*, facsimile, Bach-Digital.de. https://www.bach-digital.de/receive/BachDigitalSource_source_00002555

so as leverage for his 1714 promotion.[21] As *Konzertmeister*, Bach's job was not necessarily to direct the orchestra as a violinist in the word's modern sense, although records show he did so at least occasionally. Instead, the position mainly concerned composing cantatas on an on-going basis.[22]

Most of Bach's works composed as *Konzertmeister* in Weimar were limited in scale as Bach worked with the court musicians, who were limited in number. He composed cantatas in collaboration with the local librettist, the court poet Salomon Franck. The Weimar court maintained a relatively standard-sized orchestra of about 12 musicians, although different sources provide numbers ranging from 10 to 16.[23] In addition to the *Hofmusiker* (court musicians) employed by the court, there are also about the same number of *Kammermusiker* (chamber musicians) employed by the city.[24] The orchestra underwent a reorganization in the mid-1710s and documents show that in addition to Bach becoming the concertmaster, two cellists were employed and documented for the first time. This development signified the modernization of Weimar's ensemble at a time when most ensembles across Europe experimented with the use of celli as continuo instruments. The doubling of instruments is another indication of the modernization of this ensemble.[25]

A total of 24 cantatas were purportedly composed, performed, or published during Bach's tenure at Weimar.[26] It is possible that some of these works were composed earlier and later reused in Weimar. However, given the evidence from manuscripts, published materials, and the fact that Bach was not tasked to compose regular cantatas (i.e. cantatas for Sundays and liturgical feasts) prior to his appointment, a high percentage of the cantatas can be presumed to have been

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[21] Williams, *Bach—A Musical Biography*, 155.
[22] Ibid.
[23] Schulze, "Johann Sebastian Bach's Orchestra: Some Unanswered Questions," 6.
[24] Ibid.
[25] John Spitzer and Neal Zaslaw, *The Birth of the Orchestra* (Oxford: Oxford University Press, 2004), 20; Neal Zaslaw, "When Is an Orchestra Not an Orchestra?" Early Music XVI, no. 4 (1988): 484, doi:10.1093/earlyj/xvi.4.483.
[26] Alfred Dürr, *The Cantatas of J. S. Bach* (Oxford: Oxford University Press, 2005), 11–20.

composed during this period. Of the 24 known works, at least 13 were definitively composed after 1714, after Bach became *Konzertmeister*.[27]

Based on the compilation of select cantatas composed in 1714–15 (see Table 2), apart from BWV 31, it is clear the instrumentation of most of the works are comparably standard with a similar count of total musicians—namely, a small number of wind players (often double-handed on multiple instruments) and 4-part strings. This potentially gives scholars an idea of what Bach's orchestra might have looked like for most of his regular cantatas. The instrumentation shows that Bach mostly standardized the musical forces he called for in his regular cantatas. Except for cantata 152, which demands a smaller string section with two specialized variants of violas (specialized in today's terms of a non-standard viola), Bach mostly utilized an up-to-date Italian-style 4-part strings section. This style is modeled after the oratorio tradition of the late 17th century, which first standardized the 4-part strings section to two violins, viola, and continuo as opposed to the older violin, two violas, and continuo or the French 5-part strings section (with three violas).[28] Of note is BWV 165 and 163, as they specifically requested (or were documented as having utilized) cellists for their continuo parts, with the latter specifying a divided cello section.

Table 2 Select Cantatas from 1714–15

BWV	Winds	Strings
132	Oboe, Bassoon	4-part strings
152	Flute, Oboe	Viola d'amore, Viola da gamba, Continuo
155	Bassoon	4-part strings
31	3 Trumpets, Tromba di tirarsi, 3 Oboes, Tenor oboe, Bassoon	6/7-part strings (2 violin parts, 2 viola parts, 2 cello parts, and basso continuo)
165	Bassoon	4-part strings (with cello specified)
185	Oboe, Bassoon	4-part strings
161	Flute-traverso	4-part strings
162	Corno di tirarsi, Bassoon	4-part strings
163	Oboe d'amore	5-part strings (with 2 cello parts specified)

[27] Wolff, "Bach's Pre-Leipzig Cantatas: Repertory and Context," 12.
[28] Spitzer and Zaslaw, *The Birth of the Orchestra*, 114.

The Weimar cantatas, particularly those composed after 1714, showed the advantage of having a seemingly fixed group of musicians, which allowed Bach to work on this genre regularly. Whether or not Bach considered this a success in producing "well-regulated church music" is not currently known. They, however, provided insight into the kind of orchestra for which these earlier cantatas were composed and how they could have been performed.

After leaving Weimar in 1717 for the Calvinist court of Cöthen, Bach temporarily stopped composing cantatas. The court in Cöthen was less enthusiastic towards church music in general, not to mention cantatas, a genre of the Lutheran tradition. While Bach left the world with important instrumental works during his six years at Cöthen (1717–1723), the only two cantatas composed were the audition pieces he later brought to Leipzig, cantatas BWV 22 and 23.[29] Bach's collaboration with ensembles at Cöthen and other activities during this period, of course, could still have easily influenced his artistic decisions for later cantatas. This will be discussed further in Chapter 2.

Leipzig Cantatas

An Unusual Focus on Cantatas

The Leipzig period (1723–1750), famous for being responsible for most of Bach's vocal output, started with a drastic change in Bach's daily duties as compared to his duties over the previous six years in Cöthen. His new title in Leipzig, Music Director and Cantor, implied that his multifunctional roles served purposes beyond those of a court composer or musician. For instance, rather than just overseeing a band of court musicians, he was given significantly more church and educational responsibilities.[30] During this time, Bach was tasked with organizing music for all five of the city's churches and one university church, teaching at the St. Thomas School, maintaining the general discipline and behavior of the students there, and hiring and

[29] Wolff, "Bach's Pre-Leipzig Cantatas: Repertory and Context," 15.
[30] Williams, *Bach—A Musical Biography*, 268.

scheduling the city musicians (a total of eight *Stadtpfeifer & Kunstgeiger*, the two levels of civil servant musicians), all while maintaining the roster of instrumentalists and copyists.[31] In addition, Bach documented and reported related financial expenditures, answered to the City Council, composed music as needed, and completed seemingly trivial and tedious tasks, including procuring candles for chapels and reporting the conditions of the instruments to the city.[32] Bach quickly realized the heaviness of his duties and swiftly delegated some of the work to others. For example, he was reported to having an older schoolboy to handle teaching duties at St. Thomas and hiring external technicians to tune instruments instead.[33]

With all the extra duties weighing on Bach in this new position, he still managed to devote a significant amount of time to composing music for the church. These compositions included 27 cantatas in the first year of his employment alone, including one (BWV 75) presented on May 30, 1723, two days before he was officially introduced as the new cantor of St. Thomas.[34] The reason Bach appropriated so much of his time for composing amid his unthinkably busy schedule is especially interesting, since, as Peter Williams pointed out, he was not expected to compose cantatas himself.[35] Bach's position as cantor did not require him to compose, and he could have scheduled his own previously composed works or other composers' works for the Sunday services. Williams proposed that Bach might have followed in the footsteps of his predecessor Kuhnau, who seldom used other composers' music.[36] It is also possible that, for the people in Leipzig, it was expected that the cantor focus on cantatas.[37] It is particularly interesting, considering that Bach's students and sons, who later held similar positions, often used more works by Telemann and Graupner than those of their own.[38] Williams pointed out that Bach

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[31] Ibid.
[32] Ibid.
[33] Ibid., 266.
[34] Dürr, *The Cantatas of J. S. Bach*, 384.
[35] Williams, *Bach—A Musical Biography*, 267.
[36] Ibid.
[37] Ibid.
[38] Ibid.

composed music as "a born musician [who] would take a great deal of trouble and always turn a cantorate into a creative musical office, whether or not aspiring to stir the beliefs of his listeners, to impress other potential employers, or […] to surpass his university-educated predecessor."[39] It is possible that Bach's self-imposed discipline was the explanation for composing large numbers of church cantatas himself.

Interestingly, despite the large number of cantatas composed in the first few years of Bach's tenure in Leipzig, C. P. E. Bach largely omitted mention of his father's focus on this genre when writing the *Obituary* pamphlet. This omission could have been an oversight by C. P. E. Bach, or it could possibly even further suggest that for Bach and his Leipzig audience, composing cantatas regularly was so expected that this was nothing out of the ordinary. Whatever the reasons may be, Bach, at least to his future audience, was finally able to compose "well-regulated church music" as he aspired to do years ago.

Bach's Musicians

Bach's musicians in Leipzig warrant a dedicated discussion. Compared to his previous positions, which came with orchestras of varying sizes and musicians of varying capabilities, Bach's collaborators in Leipzig were comparably stable in terms of the musical institutions of the city that provided, paid for, organized, and auditioned the musicians. However, it is also true that Leipzig, despite being a much larger metropolis than the areas Bach had worked in, was not able to match its size with comparable musical talents. There were eight musicians employed by the city, which included four *Stadtpfeifer* (city pipers, or wind players), three *Kunstgeiger* (art violinists, or string players), and one apprentice. This number of musicians was less than half of those at the court ensembles of Cöthen or Weimar. Bach's predecessor Kuhnau complained about this to the city council in 1709, asserting that eight musicians were not enough to cover "all the

[39] Ibid., 272.

necessary wind instruments" of two or more trumpets, two oboes or cornetts, three trombones, one German Fagott, one French Bassoon, and "a string band" of at least eight string players.[40]

Judging from the instrumentation and the numbers of the surviving parts, most of Bach's cantatas were realistically performed by more than the eight city musicians. John Spitzer pointed out that Bach consistently had access to a 20-member orchestra, including his students and sons.[41] While younger students of St. Thomas School sang in the choir, older students, including those in the university who studied under Bach, were also available to play in his orchestras when called upon.[42] Currently, there is no known documentation of Bach's musicians during his first years in Leipzig. However, from later sources in the 1740s, it is known that Bach heavily relied upon his current and former students to play in better organized orchestras, such as the ones accounted for in the *tabula musicorum*, a list compiled by town chronicler Johann Salomon Riemer.[43]

The Cantata Cycles

According to C. P. E. Bach's account in the *Obituary* pamphlet, Bach composed a total of five cantata cycles. These are cantata sets with works specified for particular Sundays and schedules that corresponded to a full liturgical church year.[44] Scholars debated the method of counting the five cycles, as the documentation of the cantatas do not clearly indicate division of the later cycles. Further clarification is especially difficult now when an estimated one third of the cantata oeuvre was lost after Bach's death and subsequent estate disbursement.[45] Since the exact number of cycles do not affect this current research, I will discuss the cantatas according to the following categorizations:

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[40] Spitzer and Zaslaw, *The Birth of the Orchestra*, 248.
[41] Ibid., 248–249.
[42] Ibid.
[43] Schulze, "Johann Sebastian Bach's Orchestra: Some Unanswered Questions," 12.
[44] Carl Philip Emmanual Bach and Johann Friedrich Agricola, "The Necrology / Obituary 1750 on Johann Sebastian Bach," Bach on Bach, trans. Peter Bach, accessed November 29, 2018, https://www.bachonbach.com/johann-sebastian-bach/the-life-of-johann-sebastian-bach-facts-biography-video/johann-sebastian-bach-necrology-obituary-1750-1st-bach-biography/.
[45] Certain databases, including Bach-Digital which draws its source from Bach Archiv Leipzig, Stattsbibliothek zu Berlin, and Leipzig University, provide an approximate number of around 1/3.

- First Cycle: Cantatas from 1723–1724
- Second Cycle: Cantatas from 1724–1725(Chorale Cantata Cycle)
- Third Cycle: Cantatas from 1725–1728
- Fourth Cycle: Cantatas from 1728–1729 (the Picander Cycle)
- Later Cantatas (These do not form a cycle.)

Bach's first cycle started in May of 1723 and concluded on Trinity Sunday, June 4, 1724. This cycle includes 37 new compositions, 11 reused and/or reworked Weimar cantatas, *St. John Passion*, and additional Latin settings. A large portion of this cycle contains two parts or a companion cantata. Traditionally, the first part of the cantata or the first cantata was presented before the sermon. Part II or the companion was designated to be sung after the sermon. [46] The 2-part cantatas occasionally employed sinfonias as an overture to the second part, allowing the congregation to contemplate as the finishing of the sermon leads to the concluding vocal works.

Peter Williams noted that the first cycle does not show signs of having a "concrete plan,"[47] at least when compared to the second and third cycles. The incoherent themes and lack of an overarching structure across different works of the cycle do not show a clear, well-crafted plan. On the other hand, the amount of work put into the first cycle is unparalleled compared to later cycles, especially during Christmas and Eastertide. Williams pointed out that seven services and nine major works were presented over a span of 13 days, between the Christmas of 1723 and the Epiphany of 1724. The first version of *St. John Passion* was also performed during this cycle, situated between non-stop new and reworked cantatas for the Lent and Easter season. The performance of *St. John Passion* amid the busy schedule was particularly impressive as it

[46] Williams, *Bach—A Musical Biography*, 275.
[47] Ibid.

contrasts with the slower year of 1727, with some scholars suggesting that the slowing down of Bach's cantata composition could be attributed to the work put into *St. Matthew Passion*.[48]

The second cantata cycle started on the first Sunday after Trinity, June 11, 1724. This cycle took on an ambitious project, which is now understood as the "chorale" cycle. With this cycle, Bach used hymns and chorales, often well-known to his congregation, as both musical and literary motifs.[49] One of the most important features of the works of this cycle is the opening chorus. Bach often set the chorale text and melody to the opening chorus using a variety of compositional devices, including fugal elements, concertante materials, and other creative devices.[50] A solo flute, one that was rarely used in orchestras of the time, is often employed in this cycle. While the musical effects of the works are impressive, Williams noted that Bach, as a practical composer, tempered the difficulty of the treble and bass parts in some of the later cantatas of the cycle, possibly due to the original overestimation of his musicians.[51] Alongside this choral opening structure, Bach started to utilize a six-movement structure, with one or two chorales in their original 4-part voicing included as independent movements.

Bach composed 40 works for this cycle. The year that this cycle was performed coincided with the 200th anniversary of the first Lutheran hymn book's publication, and Masaaki Suzuki of Bach Collegium Japan suggested that the theme of chorales could have been prompted by the celebration of this event.[52] Bach's focus chorale themes were not limited to cantatas. For instance, in the 1725 Good Friday service, Bach presented a second, revised version of the *St. John Passion*, which included an opening chorale fantasia, not unlike that of a cantata's opening movement. This ambitious project, one that triggered numerous stylistic, formal-structural, and

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[48] There is no clear source for one single scholarly research study, yet numerous music dictionaries and online databases (including Bach-Cantata.com) pointed out the possibility. This could not be verified, yet it presents itself as a logical hypothesis.
[49] Williams, *Bach—A Musical Biography*, 287.
[50] Ibid.
[51] Ibid.
[52] See booklet of Johann Sebastian Bach, *Cantatas from Leipzig*, Bach Collegium Japan, Masaaki Suzuki, BIS CD-1321.

artistic transformations, ended abruptly on March 25, 1725 without warning or explanation. Bach continued to finish his second cycle with "normal" cantatas, which concluded on Trinity Sunday of 1725.[53]

A third cycle was constructed by works composed between 1725–1728. At the start of the new cycle in June 1725, Bach introduced his own reused works, works by other composers (most of which were possibly by Telemann, with a few unidentified pieces)[54], and 13 new compositions before Trinity Sunday in 1726. Less than one-third of new original works were used, comparatively less than his previous two cycles. For the annual passion service, Bach presented the mysterious *St. Mark Passion*, a work by an anonymous composer that is partially lost today. It was originally and most likely erroneously attributed to Reinhard Keiser and, less frequently, attributed to Bach himself. After Easter, Bach used comparably easier works borrowed from his cousin Johann Ludwig Bach, the Kapellmeister of the Meiningen court. Peter Williams again pointed to Bach's reduction of commitment and energy while further accepting the limitations of his Leipziger performers. At the beginning of the 1726–1727 church year, Bach became yet again more productive and composed a total of 22 cantatas.[55] All of his new cantatas composed between Trinity Sunday 1726 and 1727 were for Sundays that he had not composed a cantata for in the previous liturgical year. It is clear that Bach intended to fill up the gaps and still prepare a full cycle, even if it took him more than his typical time frame of a year to complete. Bach is considered to have presented the first version of *St. Matthew Passion* on Good Friday in 1727,[56] although some older sources point to 1729 as the premiere date.

One musical character that emerged around 1726, around the time of Bach composing his third cycle, was the increased use of solo instruments and, particularly of note, the use of the solo

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[53] Ibid.
[54] Dürr, *The Cantatas of J. S. Bach*, 926.
[55] Ibid.
[56] Robin A. Leaver, "St Matthew Passion" in *Oxford Composer Companions: J. S. Bach*, ed. Malcolm Boyd (Oxford: Oxford University Press, 1999): 430.

organ. The solo organ was not often used in music of that era, not even in secular settings. It was hypothesized that Bach's original intention was to use the solo organ as an substitute for a missing solo instrument.[57] The cantata BWV 146, which was either composed for the third Sunday after Easter in 1726 or 1728, was one with a sinfonia that is related to Bach's later Harpsichord Concerto, BWV 1052, which is in turn related to an organ concerto that was possibly based on a lost violin concerto.[58] The relationship between these interconnected works suggests the possibility of the "missing instrument" hypothesis.

After Trinity Sunday, 1727, Bach again slowed his pace of cantata compositions. Instead, this year saw the revision of a few old works and the possible composition of one single cantata, the aforementioned BWV 146, along with additional possible cantatas that are now lost. At the end of this three-year-period which constitutes Bach's third cantata cycle, 35 cantatas in total could be counted.

The fourth and last set of a documented cycle is more similar to the second cycle, in that it is another systematic attempt to create a coherent, thematic cycle. In this case, Bach chose to work with his close collaborator and librettist of the *St. Matthew Passion*, Picander. Picander started publishing his libretto for cantatas in June of 1728, when Bach's new cycle began. Evidence is not clear if Bach did not have time to set the first few settings into music or if the music was simply lost, but, according to surviving records, the first cantata Bach set to music in this cycle was for Trinity XXI, well into October of 1728. A total of ten cantatas survived from this cycle, which include incomplete works and works possibly composed or completed by C. P. E. Bach.[59]

After 1729, Bach's output of cantatas significantly decreased. In the last 21 years of his life, there are only 18 sacred cantatas documented, along with a few possible lost works. Of these

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[57] Williams, *Bach—A Musical Biography*, 291–2.
[58] Barenreiter's critical notes include detailed description of the relation between the two works.
[59] "Ich Bin Ein Pilgrim Auf Der Welt," Bach Digital - Objekt-Metadaten, accessed November 25, 2018, https://www.bach-digital.de/receive/BachDigitalWork_work_00001501?lang=en.

later works, only nine sacred cantatas were composed for the regular liturgical year; the rest were composed for civic festivals, weddings, and other occasions (see Table 3). Additionally, among the nine sacred cantatas, six belonged to the liturgical years 1730–1733. This means that the composition of liturgical cantatas all but stopped in 1733, with only two late exceptions of BWV 14 and 191 (which may or may not be counted as a cantata, as it was for Christmas Day).

Table 3 List of Bach's Sacred Cantatas After Trinity, 1729[60]

BWV	Type	Purpose / Sunday	Year Composed
51	Liturgical	Trinity XV	1730
112	Liturgical	Misericordias Domini	1731
158	Liturgical	Easter III	1731
29	Civic	Town Council	1731
140	Liturgical	Trinity XXVII	1731
36	Liturgical	Advent	1731
80	Religious Festival	Reformation	1731
100	Unspecified	Unspecified	1732
177	Liturgical	Trinity IV	1732
9	Liturgical	Trinity VI	1732
97	Unspecified	Unspecified	1734
14	Liturgical	Epiphany IV	1735
197	Civic	Wedding	1736
195	Civic	Wedding	1737
30	Religious Festival	St. John's Day	1738
1083	Unspecified	Unspecified	1743
191	Liturgical	Christmas	1745
69	Civic	Town Council	1748

Traditionalists hold that Bach may have felt that his work was completed after completing four cycles, and the number of works were sufficient for weekly performances in services. Since reusing the works required limited revisions, some believe that Bach had achieved his goal of producing well-regulated church music. [61] On the other hand, there is evidence that could point to other explanations. For instance, some of the later cantatas resorted to fewer and

[60] Compiled from Dürr, *Cantatas of J. S. Bach*, and Bach-Digital.
[61] Williams, *Bach—A Musical Biography*, 295.

fewer choral movements. At around the same time, St. Thomas's choral library purchased an old Renaissance set of choral music for use in service. The existence of easier music and the decrease in frequency of difficult choral settings appearing in cantatas might suggest that Bach either felt the choir's limitations were worsening, or that he simply stopped trying to improve their ability and performance quality.[62] Another possible explanation could be the shift in Bach's focus. Beginning in 1729, Bach began working with the collegium musicum and composed a number of secular orchestral and chamber works. He composed most of his orchestral overtures during this time along with his violin concerti, harpsichord, and multi-harpsichord concerti.

The different cycles showed Bach's changing foci, which may have been influenced by the quality and quantity of his players, the trends of the time, the texts available for him to set, and other internal and external causes. These cycles do not provide direct answers to the questions this research seeks, but they provide scholars with important context regarding how Bach responded to the changing circumstances, responses that could assist modern musicians in making informed decisions as they face their own artistic decisions or practical limitations.

[62] Ibid.

Chapter 2: THE SIZE, INSTRUMENTATION, AND BALANCE OF BACH'S ORCHESTRAS

This chapter first looks into the orchestras that Bach worked with and the ones that he knew. With this information gathered, the second half of the chapter puts the orchestras into context, taking into consideration both the historical development of orchestras and the orchestras' sizes and functions when compared to choirs. A short discussion is then offered on ways to interpret the information in this chapter.

Bach's Orchestras at a Glance

Several sources provide scholars with historical evidence regarding Bach's performing forces. Before examining them, these sources need to be put into context for the purpose of this research. There is no practical use directly comparing today's orchestras with Bach's in an attempt to identify what the ideal forces are. On the contrary, the *interpretation* of these materials is much more important in determining the sources' overall implications. Scholars need to understand how Bach viewed his orchestra, especially in relation to other orchestras at the time, in order to better comprehend how his orchestra might have sounded, how he tailored his works to suit his performing forces, and what the ideal sounds might have been in his mind.

In order to do so, I will begin by examining two types of orchestras: those that Bach personally worked with as a composer, performer, or director and those that he heard. Bach either briefly worked with or heard a number of ensembles outside of those at his place of employment, and he even used them as examples to plead for better funding and more musicians. It is a reasonable assumption that these orchestras contributed to shaping Bach's conception of the ideal size, balance, and structure of an orchestra.

Bach's Orchestras

Tracing back to the beginning of his employment, Bach first had a brief, seven-month tenure as part of the household staff at Weimar in 1703. However, this might not have significantly influenced his musical development. It is known that there were five trumpeters and one timpanist serving at the time of Bach's service. However, Bach was designated as a lackey rather than as a musician. It is doubtful that this short period of time made any meaningful impact in terms of his familiarity to the orchestral sound and culture. Weimar's influence will be discussed later during his 1708–1717 employment at the court as organist and *Konzertmeister*.

Following this, Bach moved to Arnstadt, Thuringia (now in modern Germany) to take on his first extended employment as organist of the Neukirche. Here, he did not organize any cantata performances, as Bach refused to provide any music other than those on the organ.[1] Musicologist Hans–Joachim Schulze pointed out that Neukirche was the smaller of the two churches in Arnstadt, and the more affluent citizens attended the other church, Oberkirche. The difference in the congregations may have influenced Bach's decision to refrain from providing more "elaborate" music for his congregation.[2] There is no evidence that indicates that Bach worked with any ensemble in Arnstadt. Except for two early cantatas (BWV 4 and 150) that could have been composed during the last few months of Bach's stay in Arnstadt, no works for larger ensembles survived from this time, nor is there evidence indicating any cantata performances. It is also possible that the two Arnstadt cantatas were not heard in Arnstadt at all, as BWV 4 was composed for his audition at Mühlhausen, while the purpose and the exact date of composition of BWV 150 remains unclear.[3]

The first position at which Bach composed for and directed an orchestra was in Mühlhausen, Thuringia. The city had six *Stadtpfeifer* employed—that is, civic musicians with

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[1] Schulze, "Johann Sebastian Bach's Orchestra: Some Unanswered Questions," 5.
[2] Ibid.
[3] Spitzer and Zaslaw, *The Birth of the Orchestra*, 245.

titles of "city pipers", which originally indicated wind players. However, most *Stadtpfeifer* played more than one instrument, including possible string instruments. According to scholar John Spitzer, the small number of musicians in no way constituted an orchestra.[4] However, Bach's BWV 71, one of his early large-scale cantatas, was composed for Mühlhausen and has 15 instrumental parts, not counting potential instrumental doublings.[5] To perform this work, Bach must have had access to additional musicians, whether they were students, amateur players, out-of-town players, or players hired by other means.[6] The large number of parts compared to the small number of available musicians also suggests that Bach was possibly following the 17th century tradition of some German orchestras of expanding parts to create a grander soundscape rather than expanding the size of the orchestra.[7] While it is currently not known how often Bach had access to larger orchestras, BWV 71 serves as an example of Bach's utilization of a more practical approach, in which he aimed for the sound of a larger orchestra but made do with enough parts to create a sound that is "close enough".

Following Mühlhausen, Bach entered his Weimar period (1708–1717), during which a clearer picture of what his regular orchestras looked like is known. Each period after Weimar is denoted by accounts of performances, payroll documents, and orchestral parts that can, to a certain extent, identify historically-existing Bach orchestras, as shown in Table 4. This table provides a partial list extracted from John Spitzer and Neal Zaslaw's *The Birth of the Orchestra.* It should be noted that, in the earlier records of Weimar and Cöthen, the string sections were comparably smaller, with much larger sections of winds, brass, and percussion. The string sections gradually became up to date with Italian style 4-part strings. A 16-foot double bass instrument was later introduced alongside the increased usage of the cello. The wind instruments show signs of a two-part winds set up, and the ratio of strings gradually surpassed that of the

[4] Ibid.
[5] Johann Sebastian Bach, *Cantata BWV 71*, ed. Christine Fröde, (Kasel: Bärenreiter Verlag, 1992).
[6] Charles Sanford Terry, *Bach's Orchestra* (London: Oxford University Press, 1958), 3.
[7] Spitzer and Zaslaw, *The Birth of the Orchestra*, 219.

winds and brass. Whether this represents a trend in the development of Bach’s ideal orchestral balance is unclear, as a solid conclusion cannot be drawn from this small number of datasets. However, it could indicate developments that correspond to the gradual change in other locations during the same time period and help contextualize possible orchestral balances for modern musicians.

Table 4 Bach's Orchestras

Place and Date	Strings	Winds	Brass & Percussion
Weimar, 1714	4 violins/viola 1 singer doubling on strings 1 violone	1 bassoon	5 trumpets 1 drum
Cöthen, 1717	3 violins 1 cello 1 viola da gamba	2 flutes 1 oboe 1 bassoon	2 trumpets 1 drum
Leipzig, 1730	2 violins	2 oboes 1 bassoon	2 trumpets
Ideal Orchestra, proposed 1730	2–3 violin I 2–3 violin II 2 viola I 2 viola II 2 cellos 1 violone	2–3 oboes 1–2 bassoons	3 trumpets 1 drum
Leipzig, 1746	5 violin I 5 violin II 1 viola 1 cello 3 violoni	1 flute 2 oboes 2 bassoons 2 horns	

During Bach’s Weimar period (1708–1717), his orchestra was small. According to sources dating from 1714, there were six string players and one bassoonist, along with six players on brass and percussion in Weimar, as demonstrated in Table 4. Another document cited by Schulze from 1702 showed that Weimar had two distinct organizations of musicians: (1) 12 Kammermusiker (chamber musicians), which included a Kapellmeister, vice-Kapellmeister, four singers, three violinists, one bassoonist, and two trumpeters; and (2) ten Hofmusiker (court

musicians), which included five trumpeters, one timpanist, one singer, one organist, and two auxiliary musicians.[8] Apart from the singers listed in the 1702 document, the organization of ensembles did not change much in number between 1702–1714.

Some interesting evidence provides insight into the ensemble size and types of musicians during Bach's Wiemar period, particularly related to the above mentioned *Kammermusiker* and *Hofmusiker*. For instance, Schulze cited Spitta's research, which uncovered an account recalling "sixteen well-rehearsed musicians dressed in Heyducken costumes."[9] Since no town *Pfeifer* group existed in Weimar, as they did in other cities like Mühlhausen, these "sixteen well-rehearsed musicians" could not have been from the *Pfeifer*. However, the number 16 does closely correspond to the instrumentalists of both the *Kammermusiker* and *Hofmusiker* combined. From this, it may be assumed that the performance cited here was carried out by the court musicians, and the 16 musicians were perhaps the number of well-trained musicians available at the time. This number 16 also suggests that, for some of the larger works composed at this time, such as Bach's Easter cantata BWV 31, outside musicians or other servants not labeled as musicians in their payroll may have been hired.[10] The latter is not out of the question, as Bach was also first employed as a lackey rather than a musician in Weimar in 1702.[11] To summarize, Bach's Weimar orchestra was small but provided all the necessary instruments. This included a full string section, one double-reed player with additional available for hire, and ample trumpet players.

Following Weimar, Bach moved to Cöthen in 1717, where the orchestral environment changed dramatically, both in the quality and quantity of musicians available for hire. Bach's larger works in Cöthen largely corresponded to the number of musicians the court provided, as compared to his Weimar works. According to Table 4, the Cöthen orchestra was similar to a bare-

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[8] Schulze, "Johann Sebastian Bach's Orchestra: Some Unanswered Questions," 6
[9] Ibid.
[10] The Easter cantata BWV 31 called for additional musicians including three trumpets, three oboes, viola *divisi*, and cello *divisi*.
[11] Ibid.

bones version of a classical orchestra with a full string quartet (with one violinist doubling as violist), an additional continuo player (da gamba), two flutes, two double reeds on the winds, two trumpeters, a timpanist, and three unspecified additional musicians on the payroll. Apart from the list of personnel and their duties, it is also important to know that: (1) the court trumpeters often doubled as string players; (2) Bach personally played in the orchestra as violinist, violist, or harpsichordist; (3) Bach's students were documented as having assisted; and (4) the Duke of Cöthen himself, who was a violinist and da gamba player, also played with the orchestra.[12] The court continued to expand, especially after Berlin dismissed a huge number of musicians in 1713, which prompted the newly unemployed musicians to look for work elsewhere. As such, the Cöthen Kapelle increased in both size and quality. By 1718, the court had 18 players and maintained a reputation of being an "extraordinarily brilliant" orchestra.[13]

Once again, Bach's works during that era can be used as internal evidence to further support the understanding of the sizes and make up of orchestras. For instance, Bach's Brandenburg Concertos have been assumed to have been composed during this time and were the repertoire of the Cöthen Kapelle. Even if some scholars presented doubts to this assumption,[14] the close correlation between the instrumentation of the concertos and the staffing of the orchestra can be used to support this understanding. John Spitzer summarized German musicologist Heinrich Besseler's study,[15] noting that, if Bach continued the tradition of one-to-a-part concerti, the number of musicians needed directly supports the hypothesis that the works "belong" to Cöthen. He argued that, with the doublehanded wind players included among the strings, the nine string players along with the two basso continuo players of the Cöthen Kapelle perfectly make up the instrumentation of the third concerto. Spitzer further quoted Besseler's study in arguing that

[12] Spitzer and Zaslaw, *The Birth of the Orchestra*, 247.
[13] Schulze, "Johann Sebastian Bach's Orchestra: Some Unanswered Questions," 8.
[14] Ibid.
[15] Heinrich Besseler, "Critical Notes" in *Sechs Brandenburgische Konzerte*, ed. Herinrich Besseler and Alfred Dürr (Kassel: Barënreiter Verlag, 1956), 18.

the lack of the second violin in the fifth concerto could be due to Bach's intention to play the virtuoso harpsichord part himself, leaving only one qualified violinist to play. The sixth concerto, with the *divisi* viola da gamba part, was possibly joined by the Duke on his da gamba. The fluidity of instrumentation between pieces supports the idea that Cöthen had one of the best orchestras in the region that was well staffed and well supported by the ruling class.

However, in the 1720s, the orchestra started to shrink in size, partially due to retiring musicians and the dukedom's shift in focus to military expansion and other projects.[16] It is possible that this contributed to Bach's intention to leave Cöthen. In fact, evidence from Bach's first concerto, as illustrated by Schulze, suggests that Bach imagined a larger orchestra than that of the Cöthen Kapelle. Schulze pointed out that Bach reused the opening movement of the First Brandenburg Concerto in his cantata BWV 52. Later in Leipzig, when this work was revived, Bach made two copies for both violin parts, suggesting that there were at least three or more violinists per part.[17] This might indicate that Bach had the intention of performing this piece with a larger orchestra, a size that Cöthen was not able to provide towards the later of Bach's years in the court's service. It should be noted that reusing materials for a larger orchestra may not be sufficient evidence to prove Bach always wanted a larger orchestra for that work, but they could nonetheless lead us to believe that, even if Bach did not originally conceive it to be performed with a larger ensemble, he certainly preferred it when circumstances allowed.

Following Cöthen, Bach entered his most prolific period of cantata composition in 1723 when he moved to Leipzig to take on the prestigious cantorship position. The scholarship on Bach's Leipzig orchestral activities is vast. Therefore, for the purpose of this project, I will focus on summarizing the orchestral background, which includes the history and context of the orchestral institutions, Bach's reaction to their instrumentation and comments on their quality, and other historical evidence that provides insight into actual sizes and balances of his orchestras.

[16] Schulze, "Johann Sebastian Bach's Orchestra: Some Unanswered Questions," 9.
[17] Ibid.

One of the most quoted documents regarding Bach's orchestra is his 1730 memorandum for, "a well-appointed church music", which called for at least two to three first violinists, two to three second violinists, four violists, two cellists, one violone player, two oboes, one bassoon player, three trumpeters, and one timpanist, forming an orchestra of 18 musicians.[18] (See Table 4 for a more complete description of possible balance and numbers.) Relying on the traditional interpretation of Charles Sanford Terry, it can be observed that, first, no flutes were deemed necessary, but they are mentioned and occasionally used in the works. Second, brass players were customarily listed among the trumpeters, who often not only played all the brass instruments of the time but also strings and winds. Bach made no distinction between horn players, trumpeters, or other brass players. This does not mean that Bach only asked for trumpeters; rather, he intended to have three brass players at his disposal to be assigned to duties on the horn, trumpet, or other possible instruments.[19]

In addition to what Bach wrote in the above memorandum, his predecessor Johann Kuhnau also twice voiced concerns regarding the lack of quality musicians.[20] According to Kuhnau, for pieces with two choirs, an ideal orchestra included two or more trumpets, two oboes, three trombones, one *fagott* (German bassoon), one *basson* (French bassoon), four violinists in each section (eight in total), two violas, violoni, violoncellos, colascione, and timpani. The balance and instrumentation request differed slightly, but the general idea and even the proportions are similar.[21] On the other hand, John Spitzer points out that Bach's situation was probably not quite as desperate as his memorandum suggests, because, apart from the eight musicians of the *Stadtpfeifer* and *Kunstgeiger*, Bach often used his students, apprentices, and sons to supplement his orchestra.

[18] See the translation of the full memorandum in Andrew Parrott, *The Essential Bach Choir* (Suffolk: Boydell Press, 2000), 163–170.
[19] Terry, *Bach's Orchestra*, 8–9.
[20] Schulze, "Johann Sebastian Bach's Orchestra: Some Unanswered Questions," 11.
[21] Ibid.

As previously noted, most of Bach's violin sections were left with duplicate parts, such as the cantata BWV 52 that quoted the First Brandenburg Concerto. Bach more than likely had access to at least three violinists for each section. Compared to most one-to-a-part situations in Weimar and Cöthen, the amount and frequency of duplicate parts in Leipzig indicates that Bach's orchestra, according to Spitzer, was much more "orchestral" than those of any of his earlier positions.[22] That said, the "orchestral" conception should be interpreted with caution. Terry warned that we must not conclude that most of Bach's works during this period were always performed with an orchestra of 18 to 20 musicians. In fact, Terry asserts that they were performed with far fewer. Evidence of this can be found in the voicing of the chorales in 1744, which comprised of five sopranos, two altos, three tenors, and seven basses. Considering the heavy instrumental doubling on the soprano line and the number of the choristers available, Terry concludes that most regular cantata presentations were done with fewer than 12 players.[23]

Bach's Leipzig orchestra had a mix of professional and amateur musicians, and the list of professional players Bach worked with was well documented. The ambiguity of his orchestra lies with his amateur players, namely, his students, sons, apprentices, and apprentices of the professional players. Leipzig employed the aforementioned eight musicians, who were separated into two institutions, the *Stadtpfeifer* and *Kunstgeiger*, each with its own history and traditions. The former held a higher social prestige and traditionally played wind and brass instruments, while the latter traditionally played the violin and earned significantly fewer benefits and wages. Beginning with the rise of the cantata in the late 17th century and early 18th century, the groups began to play together as a chamber ensemble.[24] However, by Bach's time, the difference

[22] Spitzer and Zaslaw, *The Birth of the Orchestra*, 248–249.
[23] Terry, *Bach's Orchestra*, 9–10.
[24] Ibid, 14.

between the two ranks had long ceased to be their instrumental specialties. Professional musicians tended to graduate from the *Kunstgeiger* to the better paid *Stadtpfeifer* if given the opportunity[25]

Understanding the exact composition of Bach's Leipzig orchestra is further complicated by musicians' expected expertise on multiple instruments. For instance, Terry quoted a 1769 document, which commented on a particular *Kunstgeiger* as having bad oboe tone, an inability to play the Zugtrompete, a lack of technique as a trombonist, and as being useless as a violinist. Ironically, this musician later moved on to join the ranks of *Stadtpfeifer*.[26] Aside from the disparaging nature of this document, it showed that, at this time, professional musicians were still expected to be competent on multiple instruments. This further complicates the possibility of understanding the exact composition of Bach's orchestra, even with well-kept records indicating his list of professional city-employed musicians. Another layer of complication is that city-employed musicians held lifelong offices. Although they sometimes became less proficient in their technique or simply were too old to play, they were still given priority for paid opportunities. This in mind, Schulze acknowledged Bach's comparably modest requirements in his memorandum and suggested that Bach was probably satisfied with fewer but better instrumentalists.[27]

In 1743 in Leipzig, Bach finally assembled a group of 16 musicians based on merit rather than seniority to perform in concert.[28] A document describing one of the *Große Konzerten* (Grand Concerts) from 1746 is quoted in Table 4. Additionally, a similar concert used the following instrumentation: five first violins, four second violins, three violas, two violoncellos, two violone, two horns, two flutes, two oboes, two bassoons, and one harpsichord.[29] While these later performances were organized 20 years after his most active period of cantata composition, these

[25] Terry's book compiled information from the musicians' careers. Most of the *Kunstgeiger* eventually won a position of the *Stadtpfeifer*. See Terry, *Bach's Orchestra*. 14.
[26] Terry, *Bach's Orchestra*. 18.
[27] Schulze, "Johann Sebastian Bach's Orchestra: Some Unanswered Questions," 11.
[28] Ibid.
[29] Ibid.

numbers might still indicate what Bach's ideal orchestra looked like, especially when the proportions were not too far from those of the memorandum 15 years prior, or even Kuhnau's remarks from 1709, almost 40 years prior.

As previously mentioned, Bach also had a collaboration with *Collegium Musicum* in Leipzig between 1729–1744. However, while this collaboration provided Bach with opportunities to experiment with large orchestral textures, it is not particularly important when it comes to determining the size of Bach's orchestras for cantatas. Only a small number of secular cantatas were performed by the Collegium, an even smaller selection of which contained duplicate violin parts.[30] Most of Bach's other orchestral performances (note: not all performances were orchestral[31]) with the *Collegium Musicum* were performed one to a part. Therefore, the ensemble more closely resembled the Cöthen court orchestra than the newer, larger orchestras Bach was pushing for with his later cantatas and instrumental concerts.

Judging from Bach's and Kuhnau's comments, the expectation of an ideal orchestra for the Leipziger composers and musicians were similar. With Dresden's and other leading and well-funded Kapellen switching to a four-part string set up along with winds and brass,[32] Leipzig longed for the same balance and instrumentation for its ensembles, if not slightly smaller and a few years behind the trend. Most of Bach's later performances used an ensemble of between 20 and 30 musicians. Scholars have suggested that earlier performances could have regularly used a similar number of performers for more important occasions, and the size of this kind of ensemble could easily qualify as an orchestra in modern terms. Pieces suitable for this number of performers will be the focus of this research, with detailed numbers and possibilities discussed below, along with case studies presented in Chapter 7.

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[30] Secular cantatas with extra parts include BWV 193a, 198, 205a, 206, 207a, 208a, 213, 214, and 215. This list is compiled from Spitzer and Zaslaw, *The Birth of the Orchestra*, 249.
[31] Werner Neumann, "Das 'Baschische Collegium Musicum'" *Bach-Jahrbuch* 47 (1960): 5–27.
[32] For a more detailed discussion on orchestral development around Bach's time, see pp. 30–31.

Orchestras Bach Knew

Apart from the orchestras in cities and at occasions where Bach was employed at, he also had the opportunity to listen to or even briefly work with several other ensembles. Schulze summarized these orchestras and ensembles in his article *Bach's Orchestra: Some Unanswered Questions*.

The first well-documented ensemble that Bach knew of was the musicians at Celle in modern day Germany. This included a *Hofkapelle* (court orchestra) of 13 full-time musicians, along with an additional six violinists (who could include players of lower string instruments) available to play the "recht und französische Music ([in the] right [style] and French music)."[33] This ensemble was known to be an exceptionally well trained orchestra. Among those listed on the *Hofkapelle* payroll (which does not include the violinists), were four singers, one viola da gamba player, one cornettist, one organist, and one low wind/brass player on the bassoon or trombone.[34] The proportions of this ensemble were close to Bach's first orchestra in Weimar. Since the violinists were separately listed, it could be interpreted that the group did not always play together. However, it is possible that there were occasions that a group of 20 musicians played together, as was seen in Bach's Weimar performances.[35]

When Bach moved to Arnstadt, the highlight of his time there was not necessarily in Arnstadt itself but in his famous visit to Lübeck. Schulze suggested that, in addition to listening to Buxtehude's organ playing, Bach may have attended Buxtehude's performances of *Castrum doloris* and *Templum honoris*.[36] These are two performances of music now lost but are suggested to have had a sizable performing force. According to the libretti, and as pointed out by Schulze, there were, "trombones and trumpets with mutes", "two choirs of kettle-drums and trumpets", "tutti for all choirs and organs", "two concerted choirs of hunting horns and oboes", and a

[33] Schulze, "Johann Sebastian Bach's Orchestra: Some Unanswered Questions," 5.
[34] Ibid.
[35] Ibid.
[36] Ibid.

"*sinfonia all'unisono* with 25 violins".[37] Lübeck had eight *Ratsmusiker* (town musicians) that could have been supported by eight auxiliaries and another eight supporting musicians. While the 24 available musicians did not form the large forces needed for the works, Buxtehude must have hired additional people, whether from within or beyond Lübeck. The influence this work had on Bach was apparent. Schulze attributed the large BWV 71, which called for multiple choirs (i.e. a group of musicians rather than singers), trumpets, and drums, to Buxtehude and Lübeck's influence on him.[38]

Dresden was among the cities that Bach visited during his time in Weimar and could have been influential to Bach. Supporting evidence exists that provides scholars with more information on the ensembles and orchestras in Dresden and its surrounding areas. One example of this is the Dresden court, which John Spitzer described when he discussed the development of the late 17th century German *Kapellen* (court orchestras) in his book, *The Birth of the Orchestra*.[39] In the 1670s, which were the last years of the German master Heinrich Schütz's life, the Kapelle had an organization of multiple "choirs", which was a remnant of the Italian tradition from the century prior (note: a "choir" in this context includes a group of singers and instrumentalists, not just a group of singers in its modern sense[40]). In the last decade of the 17th century, multiple choirs began consolidating into one ensemble, adopting a full string section and forming a French style five-part strings structure. The French system quickly gave way to the once again Italianized four-part strings while the orchestra continued to expand. It was during these last few years that Bach visited Dresden and subsequently kept in close contact with some Dresdener musicians.[41] In his 1730 memorandum, Bach also used Dresden as an example for a model of a good orchestra

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[37] Ibid, 5–7.
[38] Ibid.
[39] Spitzer and Zaslaw, *The Birth of the Orchestra*, 213–262.
[40] Ibid.
[41] Schulze, "Johann Sebastian Bach's Orchestra: Some Unanswered Questions," 6.

and how musicians should be treated and paid.[42] This in mind, it is clear that Dresden had an impact on Bach's conception of the orchestra.

Another orchestra that Bach knew of and that may have influenced him was in the city of Halle. Towards the end of 1713, Bach was offered a position in Halle, which he eventually turned down, potentially using the offer as leverage to obtain his new *Konzertmeister* position at Weimar. The ensemble available at Halle was one that lends insights into orchestration details. In the late 17th century, the city employed five *Stadtpfeifer* and three *Kunstgeiger*. The number of personnel changed over time between the two organizations, but the overall number remained small. Several cantatas of Friedrich Wilhelm Zachow, the previous music director at Halle, were similar to Bach's BWV 71 and were written for ensembles with parts much more numerous than the town's official musicians could cover. Schulze particularly noted the occasional call for *divisi* violas, along with the indication for "4 Hauboits", which were made up of the oboe, two oboe d'amores or tailles, and the bassoon. The offer letter for the Halle position for Bach indicated that he would have the ability to request other musicians when needed to fulfill his duties.

After declining Halle and taking the position in Weimar, Schulze noted that Bach visited at least 11 out of the 26 Thuringian cities that had regular opera performances.[43] Particularly of note is Meiningen, where Bach's cousin Johann Ludwig lived. Bach later used many of Johann Ludwig's cantatas for his third year at Leipzig, and these utilized a comparably smaller orchestra of two violin parts (four violinists), one violist, two oboes, two horns, and one basso continuo.[44] The styles and the orchestration possibly influenced Bach's view on large ensemble music[45] and could have been useful as Bach continued on to Cöthen and became devoted to composing more instrumental music of chamber and, to a lesser extent, orchestral caliber.

[42] See the translation of the full memorandum in Parrott, *The Essential Bach Choir*, 163–170.
[43] Ibid.
[44] Ibid.
[45] Ibid.

During Bach's Cöthen period, important visits to other cities included von Brandenburg's Berlin Kapelle, Karlsbad, Hamburg, and other places like Schleiz and Zerbst, where there is unfortunately little knowledge of the respective musical activities.[46] In Berlin, although there were only six full-time musicians, Schulze argued that, with more than 20 music stands in their inventory, and since string players share their stands while performing, performances of large orchestras were presumably taking place.[47] The orchestration of the Brandenburg Concerti could be argued to have been based on, at least partially, the Berliner court orchestra's size and abilities.[48] Compared to Berlin, Karlsbad was a much smaller city without salaried musicians of its own. However, as a meeting place for European rulers, the visitors' own retinue would have included musicians or even orchestras. In fact, Bach's two visits to Karlsbad were because of this reason, as he accompanied Prince Leopold of Cöthen.[49]

Not long after Bach's second visit to Hamburg, he applied for the position of organist there. He travelled to the city in November of 1720 and performed on the organ and possibly directed his BWV 21, a large scale cantata that is one of the most ambitious of Bach's works before his Leipzig period.[50] Schulze pointed out that the orchestral conditions in Hamburg were not too different from that of Lübeck's, and Bach perhaps had no issues staffing a large orchestra for his performance.

After Bach assumed his cantorship in Leipzig in 1723, he established or maintained contacts with cities including Dresden, Berlin, Kassel, Gera, Altenburg, and Naumburg.[51] Summarizing the orchestras Bach knew, along with the cities he held positions in or had performed at, it can be assumed that Bach was familiar with towns that incorporated different

[46] Ibid.
[47] Ibid, 10.
[48] Betsy Schwarm, "Brandenburg Concertos," Encyclopædia Britannica, August 25, 2015, accessed November 25, 2018, https://www.britannica.com/topic/Brandenburg-Concertos.
[49] Bach's connection to Karlsbad could be further explored in Bach-Cantatas.com's database at Aryeh Oron, "Karlsbad," Bach-Cantatas, accessed November 25, 2018, http://www.bach-cantatas.com/Tour/Karlsbad.htm.
[50] Schulze, "Johann Sebastian Bach's Orchestra: Some Unanswered Questions," 10.
[51] Ibid, 10–11.

types of musical organizations. Bach knew the musical environment in larger cities of Dresden and Berlin, which often included a *Hofkapelle*, a smaller court ensemble, *Stadtmusik* organizations, and auxiliary musicians. He was equally familiar with smaller cities, such as Lüneburg or Arnstadt, which might only have had a handful of professional musicians that, even with the help of apprentices and amateur musicians, struggled to fill a full orchestra to Bach's liking. From Bach's understanding and his response towards the different circumstances, it can reasonably be concluded that Bach shared similar ideas to some of his colleagues and that the basic structure of an ideal orchestra should include a string section larger than a simple string quartet along with winds and brass when called for. It could be argued that Bach, with his personal experience with different kinds of orchestras and ensembles, formed his idea of "well-regulated church music" under the influence of the different circumstances he was familiar with and may have preferred one over the other. However, this chapter does not suggest that Bach intended all of his works for an orchestra of this size, since any experienced composer composes according to what resources she or he has rather than an imaginary perfect ensemble. The orchestras and ensembles presented above are meant to provide scholars and musicians with a clearer picture of Bach's influences and a context to base modern orchestral decisions upon. Further discussions on Bach's intentions follow in Chapter 7.

Bach's Orchestras in Context

Considering the Historical Development of Orchestras

Additional parameters for understanding Bach's orchestras as they relate to circumstances immediate to Bach can be found by tracing the orchestral development in Thuringia and its surrounding areas. An exploration of the orchestral development through source materials follows.

To provide context, I will first examine the overall trend of German instrumental ensembles in the 17th and 18th centuries. The Germans formed their orchestras slightly later than the Italians and the French.[52] The musical styles and orchestral instrumentation were gradually imported from Italian and French orchestras and were thus similar to a degree, but the patronage structure was completely different. For instance, in Italy, households of the nobility or the rich sponsored their own musical retinue, so there might have been several competing orchestras in one city, along with orchestras and ensembles playing for the opera, oratorios, and serenatas, as well as separate church orchestras. Contrastingly, in France, a unified and powerful central government provided a single patronage system which employed a number of different ensembles in Paris, granted monopolies to theater orchestras, and allowed provincial municipalities to form similar, yet smaller, systems around Paris. In the German principalities, there was often only one orchestra in a city and cannot compete with the Parisian ensembles in their resources. However, the hundreds of German rulers each sponsoring their own courts made up for it in the sheer number of ensembles in the region. Additionally, a few more free German cities employed their public servant town musicians. The difference in political systems in European countries influenced the structural differences in the market for musicians.[53]

In the 17th century, the internal organizations of early German orchestras, or pre-orchestras, closely followed the development of Italian and French orchestras. For instance, John Spizter summarized the activities of the *German Lullists*,[54] who were German musicians who trained musicians, especially string players, in the French method, championed by Lully. They imitated Lully's dances and overtures and composed works with the word "France" or "French" in their titles. Some larger courts, notably Stuttgart, went so far as to import complete string bands from France.[55] Bach himself composed French-influenced works, including orchestral

[52] Spitzer and Zaslaw, *The Birth of the Orchestra*, 213.
[53] Ibid.
[54] Ibid, 218.
[55] Ibid, 250–251.

overtures, French dance movements, and the keyboard suite *French Overture*. Apart from the influence of the German Lullists and the French style he learned from their music, Bach acquired some of his knowledge of French music from his visits to the Celle Kapelle performances, which often hired French musicians and demonstrated the "correct French style", as mentioned above.

The Italian influence, according to Christoph Wolff, could be traced back to the *intermedii* (plural of intermedio, a late Renaissance and early Baroque form of Italian theater music) music of two centuries prior to Bach. Intermedii, as performed by ensembles slightly before Bach's time, provided the essential factors of the distinction of fundamental and ornamental instruments.[56] Italian composers continued to develop the technique of composing for fundamental and ornamental instruments and eventually created the *concertato* style and the use of tutti/ripieni and solo musicians. German orchestras gradually adopted this distinction between tutti-ripieni and solo musicians. Wolff noted that the solo musicians in the German Kapellen were mostly full-time personnel, while the ripienists perhaps carried out their musical duties on the side. In this context, it can be argued that in Bach's first position as a lackey, which is seemingly unrelated to music, he could have been occasionally fulfilling duties of an orchestral ripienist in the Italian-influenced tradition.

Regarding the size of orchestras, Spitzer noted that, even with the Lullist influence, most German orchestras remained as one per part or performed very little doubling. This was despite the fact that Lully performed with large orchestras and that his Académie Royale orchestra maintained a roster of over 40 musicians in the late 17th century and expanded to over 70 in the next century.[57] Bach's methods were similar to the Lullists' half a century earlier, in that he

[56] Christoph Wolff, "Choir and Instruments" in *The World of Bach Cantatas*, ed. Christoph Wolff, trans. Cees Bakker and Margaret Ross-Griffel (New York: W. W. Norton & Company, 1997), 144; a detailed description of the background of fundamental and ornamental instruments can be found in Howard Mayer Brown's, *Sixteenth Century Instrumentation: The Music for the Florentine Intermedii* (Dallas, TX: American Institute of Musicology), 1973.
[57] Spitzer and Zaslaw, *The Birth of the Orchestra*, 188–189.

multiplied the parts rather than players when trying to achieve a grander orchestral sound.[58] This move was contrary to the trend in Italy, in which, during the early 17th century, orchestras began to switch from their polychoral texture with up to 20 parts to simpler styles exemplified by Corelli's three- to four-part texture. The simplification occurred when orchestras expanded to employing 30 or more musicians, creating large string sections but very few parts.[59]

These trends provide scholars with more information when making decisions regarding performances of Bach's pieces with modern ensembles. However, it is also important to note that what Bach did should not *per se* be the first priority for modern musicians to follow. His decisions were first and foremost done in relation to his immediate environment and warrant further discussion for adapting them for the modern environment.

Considering the Choir

The evidence regarding the size of the choir and orchestra, along with their strengths and weaknesses, could often be used in conjunction with the associating works to cross reference and provide more insights into the qualities and quantities of each ensemble. The traditional consensus on Bach's choir and orchestra is one described by Terry in his book *Bach's Orchestra*, citing 17 choristers in both 1730 and 1744 as the regular corresponding number for his instrumentalists. The constant doubling of the soprano parts, despite having more than one-third of the choir singing that part, also indicated the possible weakness of the section.[60] This idea has been challenged by some sources, including a reinterpretation of the 1730 memorandum cited in Andrew Parrott's *The Essential Bach Choir*. In addition to the ideal orchestra Bach described, Bach also included indications of his ideal choir, which included four to eight soloists and at least eight ripienists, thus making the smallest acceptable choir of 12 to 16 members. With an 18 piece orchestra and a 12 to 16 member choir, Terry's assumption of a 1:1 ratio, especially with his

[58] Ibid, 249; 491.
[59] Ibid, 69.
[60] Terry, *Bach's Orchestra*, 9.

documented evidence of 17 choristers, could be quite accurate. However, just as Bach's description of an orchestra differed from his actual practice, the accuracy of the numbers described in the 1730 memorandum, and whether this actually represented Bach's ideas, could be doubted.

Parrott used additional sources, including contemporary accounts and iconography sources, to further examine the possible choir to instrumentation ratio. His data overwhelmingly showed that the voices were significantly outnumbered by instrumentalists. In Hamburg in 1721, the singers to instrumentalists ratio was 6:7 to 20:21. Johann Mattheson's two separate arguments called for 4:19 or 7:17. At Rudolstadt Kapelle in 1742, it was 12:31. Leipzig's own Great Concerts during 1746–1748 used a ratio of 6:20.[61] Other iconographic evidence shows a ratio range from 2:5 to 1:7.[62] Evidence from selected cantatas and *St. John Passion,* using existing vocal parts, also confirms that the range for Bach's own ratio was around 1:2 to 1:6, not very different from the iconographic source results. Parrott concluded that, for Bach's music, at least according to actual practices of the time, most works were performed by singers one to a part, however numerous the instrumentalists were.[63]

Interpreting the Sources

In his article *Aspects of Performance Practice*, Ton Koopman began his section on *Instruments from the Baroque Period* by stating: "Ideally, one should perform Bach's cantatas on the instruments of his day. Bach knew the Baroque instruments inside and out, and he was fully aware of what his musicians could and could not do."[64] If scholars and musicians can share this idea and apply the information gathered in this chapter directly to performances, this project could end here. However, Bach, as a practical musician, was also dealing with issues any modern

[61] Parrott, *The Essential Bach Choir*, 118–119.
[62] Ibid, 128.
[63] Ibid., 129.
[64] Ton Koopman, "Aspects of Performance Practice" in *The World of Bach Cantatas*, ed. Christoph Wolff, trans. Cees Bakker and Margaret Ross-Griffel (New York: W. W. Norton & Company, 1997), 208.

musician would face, namely, the lack of adequate instruments, lack of funds, difficulties in finding suitable players, and the aforementioned older *Stadtpfeifers*, who made up the core musicians of Bach's orchestra and who had lost their ability to play at a high level. Even if musicians could perfectly produce results to those that Bach was anticipating, scholars still do not know whether the sound, balance, and, more importantly, effect will turn out as intended.

These are the issues facing specialist ensembles that have already mastered their understanding and technique on period instruments and are often accompanied by musicologist consultants. For modern instrument ensembles, the difficult decisions on instrumental choices, the number of players and singers, the ratio of players to singers, and the more nuanced musical style and applications are even more difficult to make. Among all the choices, there is one major obstacle that there is no easy way to overcome, and that is the expectation of the audience. For Bach's audience, who were used to listening to a capella church music from a mere 40 years prior and had only recently acquired the taste of listening to church cantatas performed by four singers and eight instrumentalists, the impact of certain works cannot be fully reproduced. When they encountered the premiere of the *St. John Passion*, with 25 musicians on stage, or his BWV 31, with three trumpets and drums majestically sounding in a church's nave, these performances most likely produced an effect that is simply unreproducible in this day and age with audiences familiar with the 100 piece Mahler orchestra or even Schoenberg's 250 performers in his *Gurre-Lieder*. Therefore, it is more important for this thesis to seek out ways to interpret the current information on Bach's ensembles for the modern ensembles than to strive to match the instruments Bach used and his balance or number of musicians.

Since it is understood that there is no way to reproduce the exact effect of Bach's original works for the contemporary audience, this thesis will focus less on the sound and numbers themselves, especially when there are already numerous specialist ensembles aiming towards, among other things, an historically authentic sound. Instead, this thesis will focus on ways modern orchestras can, in the most historically informed way possible, aim to best represent the

features and artistic qualities of the pieces in a modern context to its audience, even if it means occasionally sacrificing a more historically accurate sound.

There are a few ways to categorize and analyze the information from this chapter for the modern musician. On a case by case basis, it is possible to understand whether or not Bach's original instrumentation was composed based on his limited resources. Using Mühlhausen's small orchestra as an example, the unusually large orchestration for BWV 71 most likely meant that Bach was anticipating musicians one to a part, since there is no way Bach could have afforded more musicians to double. Historical evidence can also be traced for doublings on the same or similar (reused) works. Bach often revised works for later use, and these revisions sometimes contained more duplicate parts than they did before. Even if this does not mean Bach was anticipating a particularly large orchestra, it demonstrates that Bach was open to having more players. Following the same procedure, Bach's reused materials could also be traced to acquire additional information, as exemplified by the concerti movements recycled as cantata sinfonias. There were instances when the orchestral size differed significantly, and this cannot serve as clear evidence in support of one way or another. These cases at least show that Bach accepted both ways of performing the works, whether that was because of artistic decisions or practical constraints. The distinction this information provides can assist with making decisions when utilizing one to a part or larger string sections.

Another way to look at the issue is to consult materials outside of Bach's own writings or compositions. For instance, Kuhnau's words (see pg. 26) support an ideal orchestra similar to Bach's 1730 memorandum. Further, a document by Mattheson suggested an orchestra of around 20 musicians. Summarizing these documents shows that it is not as important regarding how many musicians Bach actually used regularly but the ideals shared by composers of the same culture, time period, and genre of music.

Comparing Bach's works to other composers' works or orchestras that he heard could also show contemporary musicians what Bach might have wanted to achieve in his works. Bach

composed BWV 71 after visiting Lübeck, and this piece showed the influence of Buxtehude's work. Hamburg, having a similarly sized orchestra as Lübeck, provided Bach with the opportunity to perform his audition piece BWV 21, a revised work from four years prior, which is another large-scale cantata that apparently did not face any noticeable constraints on orchestral personnel. Since Bach composed the work specifically for a larger ensemble that he knew would have been able to perform the piece with ease, it can be assumed that this piece could have been performed by a larger orchestra to better represent Bach's intentions.

While the information above may inform us about the size of Bach's orchestras, it does not help with internal balance issues. Parrott's work concluded that Bach often used singers on a one to a part basis, even when the orchestra was bigger. However, the ratio fluctuated greatly between pieces and, for modern orchestras, does not specify the actual balance of the sound, even if the numbers of singers and instruments were clear. The sources presented above also do not help with balancing the winds and the strings or even the balance between different string instruments or sections.

Chapter 4 will focus on practical issues like these and seek to find a modern way to resolve them in a way that balances the objectives of remaining historically informed and making sense to the modern ear. As for interpreting source material, this chapter argues for a better representation of the orchestral effects to the audience rather than the actual numbers, a clearer and more historically accurate balance rather than the exact ratio, and a creation of an overall soundscape that fits the historical trend of the time rather than following Bach's written instructions or actual historical performance records. Even though Bach's words are clear indications which could be followed, they do not always represent the composer's intentions, nor do they always suit the instruments, voices, or the acoustics of the performance spaces of today when performed with modern orchestras.

Chapter 3: CONTINUO, DUAL ACCOMPANIMENT, AND DIRECTING

The issue of choosing appropriate continuo instruments has been a point for debate for centuries. Due to the limited scope of this project and its focus, I do not aim for an accurate recreation of Bach's continuo group for every work. On the contrary, the goal for this chapter is to summarize an acceptable set of instruments that fits the historical context that would have been appropriate for Bach's works given the circumstances. This chapter focuses on presenting source materials that are particularly informative for the modern performer concerning practical choices of continuo instruments. An important source for the summarization in this chapter is based on Lawrence Dreyfus' book *Bach's Continuo Group,* in addition to citations from other sources.

Keyboards and Dual Accompaniment

The Prejudice Against Harpsichords

In the first half of the 20th century, it was widely accepted that Bach used the organ as his sole continuo keyboard instrument for most of his works, while occasionally using the harpsichord to accompany secular music.[1] It was after the Early Music Revival starting in the 1950s that musicians began to challenge this theory.[2] Lawrence Dreyfus, in his book *Bach's Continuo Group*, traced the development of this hypothesis and concluded with two separate lines of research that contributed to this belief.

Interestingly, the debate did not start with scholars arguing against harpsichords for the sake of authenticity; it was the opposite. When Robert Franz, a 19th century composer and liberal interpreter and propagator of Bach's works, utilized clarinets and bassoons along with a full organ to perform the cantatas, his critics, led by Heinrich Bellermann, the purists of their time, argued that the liberal usage of organs, especially using multiple modern organ colors spanning

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[1] Lawrence Dreyfus, *Bach's Continuo Group* (Cambridge, MA: Harvard University Press, 1987), 10.
[2] Paul C. Echols and Maria V. Coldwell, "Early-music Revival," Grove Music Online, February 11, 2013, accessed November 25, 2018, https://doi.org/10.1093/gmo/9781561592630.article.A2235052.

wide registers, were against Bach's intentions. Bellermann asserted that Bach, "only [used the organ] in tutti sections of large-scale movements to support his weak choristers, while he used the harpsichord everywhere else."[3]

The first example of those who were against the use of harpsichords was not based squarely on historical evidence, nor was it aiming to realize the composer's intentions that 20th century musicians often aimed for. It was an assumption made by Bach scholar Spitta, whose thorough investigation, barring assumptions, are otherwise still frequently cited. Based on his own nationalistic, ideological, and theological bias, Spitta argued that Bach was against using the harpsichord. In fact, Spitta's research showed that Bach tuned harpsichords, requested maintenance, and utilized them often, yet Spitta used missing records of expenditures to argue that the harpsichord was removed. Spitta further used the harpsichord as evidence of the influence of the Italian style to argue that Bach was against the harpsichord and believed that, since harpsichord was considered an instrument lacking in expressive capabilities by 19th century musicians, Bach must have felt the same way towards it.

Musicologist Anrold Schering's study in the 1930s expanded upon Spitta's work. His works are still widely cited but also contain certain assumptions, as pointed out by Dreyfus. Schering, following Spitta, uncovered that there are numerous pieces of evidence pointing to the maintenance and use of harpsichords in churches, yet he based his argument against harpsichord usage on the idea that it "goes against German church customs."[4] This information is in accordance with the knowledge that German churches believed operas were unfavorable and that all the cembalo parts were only for special circumstances or for a hypothesized yet unproven portable organ that utilizes chamber pitch rather than the normal, one full tone higher, choir pitch.[5]

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[3] Ibid, 13.
[4] Ibid, 21.
[5] Ibid, 19.

Evidence for Harpsichord Usage

Since two of the strongest proponents against harpsichord usage both conceded that there is evidence pointing to the historical usage of the instrument, it is more logical to examine the evidence for using harpsichords and to understand how often, rather than if, Bach used them in cantata performances. From source materials, scholars can better understand what harpsichords were used for, both in terms of repertoire and their roles in ensemble playing, in order to further determine how modern orchestras should use them.

One of the first and most important pieces of evidence is from records of harpsichord upkeep, tuning, and maintenance. In the 1709 document by Kuhnau (quoted above to also include indication on orchestra sizes), he argued to allocate funds for the "two large harpsichords" to be regularly maintained.[6] Bach's job, at least for his first ten years in Leipzig, was also recorded to have included maintaining two harpsichords.[7] It can be argued that the harpsichords saw more use than just for rehearsals or substitutions when organs were undergoing repairs, as the expenses and attention to the instruments were too costly for the harpsichords to only serve a minor role.

Other accounts, even though mostly indirect, can also point to Bach's usage of the harpsichord during services and performances. In 1726, Johann Samuel Beyer, the cantor at the nearby Freiberg Cathedral, petitioned to have his church purchase a harpsichord, for he believed it was necessary to accompany with it. Beyer cited the practices of using harpsichords for accompaniment in "Leipzig and in other noble locales", and he pointed out that the instrument was regularly used, especially for occasions like passions, resurrection Sundays, and "other solemn concerted works."[8] Mattheson, who was based in nearby Hamburg, stated that he preferred having harpsichords in churches, as they served as an "indispensable foundation to church, theater, and chamber music."[9] Johann Cristian Kittel, who joined the St. Thomas School

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[6] Ibid, 23.
[7] Williams, *Bach—A Musical* Biography, 266.
[8] Dreyfus, *Bach's Continuo Group*, 23
[9] Ibid.

choir in 1748 as a 16 year old chorister, later recounted that Bach, two years before his death, always had one of "his most capable pupils" accompany him on the harpsichord when performing church music. Bach also periodically intervened to furnish the accompaniment without getting in the way of the player.[10] Dreyfus also cited a reference letter Bach provided for his harpsichord student Friedrich Gottlieb Wild, in which Bach stated that Wild "has helped to adorn our church music with his well-learned accomplishments on […] *the Clavecin,*" which directly implied that Wild's participation as a harpsichord player would have been part of church music performances[11]

Some of the most compelling evidence for harpsichord usage comes from surviving parts. Not all continuo parts specified their instrumentation. Several had the word "cembalo" indicated, but a majority of them did not have any written indications.[12] Since the organs of the time were tuned at the choir pitch, a full tone above the chamber pitch to which other instruments, including the harpsichords, were tuned, surviving continuo parts could easily provide information as to which instruments were used. One could argue that the parts could not prove with complete confidence either stance, since keyboard players are known to have been able to sight-transpose. However, it should be noted that when two or more parts of the same work dating from the same time survive, it could suggest that the original figured part (not transposed to choir pitch) were not for the organ.[13]

Apart from the points above, further arguments for the harpsichord's regular involvement with church music include iconography sources, written accounts supporting dual accompaniment, and the conventions of the director leading from the harpsichord (*maestro al cembalo*). These further arguments will be presented in the following sections in this chapter.

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[10] Ibid, 29.
[11] Ibid.
[12] Ibid, 32.
[13] Extensive lists and discussions regarding this issue can be found in see Dreyfus, *Bach's Continuo Group*, 10–71. (Chapter 2.)

The Case for Dual Accompaniment

Johann Mattheson was one of the earliest documented composers and performers who wrote about the practice of dual accompaniment for harpsichord and harpsichord matched with an organ.[14] Early in the 18th century, Italian operas introduced dual harpsichord accompaniment according to pit diagrams.[15] While we cannot say for certain whether the Italian opera tradition directly influenced Mattheson, it was the reason why Spitta discounted the weight of Mattheson's words and saw him as "a Handelian proponent of Italian opera [and] of secular influence."[16] Mattheson described the practice of having two harpsichords and/or a smaller *Positiv* organ in church performances. This description could not be used directly to support that Bach also utilized this practice, but it could be used to argue against the notion that no sacred music used harpsichord accompaniment unless the organ was out of service. Mattheson's words could be used to confirm that, in Protestant Lutheran Germany, there was one school of thought actively encouraging, or at least not discouraging, the usage of harpsichord in churches.

Dreyfus further summarized some of the arguments of those who object to using harpsichords in sacred music. Schering, one of the most important early 20th century Bach scholars, did not present much evidence against dual accompaniment but based his argument on this assumption: "How impossible it must have been to continuously maintain the tuning of the harpsichord—which so easily goes out of tune […] The very thought is unthinkable."[17] This assumption could be easily convinced otherwise, both by the successful demonstration of specialist ensembles later in the century and by consulting historical documents, which include

[14] Mattheson wrote: "one can use a pair of [harpsichords] in special circumstances […] [harpsichord] has a far finer effect with the choir." Also, "it would not be bad for a number of reasons if nice and quickly-speaking small positive organs without the reed stop could be united with the harpsichord in churches, or even if a pair of [harpsichords] were present if there is a strong chorus." Dreyfus, *Bach's Continuo Group*, 24.
[15] Spitzer and Zaslaw, *The Birth of the Orchestra*, 142–143.
[16] Dreyfus, *Bach's Continuo Group*, 24.
[17] Ibid, 69. The information is based on Arnold Schering, *Johann Sebastian Bachs Leipziger Kirchenmusik* (Leipzig: Breitkopf & Härtel, 1954), 88–89.

the Dresden Kapelle's orchestra, which was recorded as having two harpsichords, C. P. E. Bach's discussion of the role of two harpsichords in recitatives, and Bach's own use of dual harpsichord in non-liturgical works.[18]

The last piece of evidence for dual accompaniment comes from the perspective of a harpsichord director, which will also be discussed in detail in the next section. It was Spitta who noted that, beginning in 1713, it became "more and more usual to conduct from the harpsichord".[19] Carl Gotthelf Gerlach, Bach's contemporary and the organist in Leipzig's Neukirche, also noted that he occasionally had to play the organ with his back facing the choir so he could not conduct the cantata. Therefore, he asked for additional funding for hiring continuo players.

For the modern performer, judging from the information provided here, it could be safe to assume that dual accompaniment is historically accepted. Even if Bach did not personally use dual accompaniment on every cantata, he often had both the organ and harpsichord accompanying simultaneously. Additionally, this technique was widely used in other Lutheran churches, and there is no known evidence that can soundly prove otherwise. For particular pieces, such as the two orchestras of St. Matthew Passion and other cantatas that may or may not have original parts, a closer case by case examination could be useful. In general, however, using dual accompaniment would be closer to how Bach's contemporaries expected their cantatas to be performed.

Maestro al cembalo and the Violin Leader

Conductors had been around for at least a century before Bach. In Paris, loud time-beaters beat time with their stick stomping the pit in the Académie Royale de Musique.[20] During the late 17th century through the early 18th century, silent time-beaters who directed choirs began

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[18] Dreyfus, *Bach's Continuo Group*, 69.
[19] Ibid, 16.
[20] Spitzer and Zaslaw, *The Birth of the Orchestra*, 388.

to be mentioned. Schering's book on Bach in Leipzig pictured carvings of Kuhnau conducting the choir with a paper roll,[21] which was common in 18th century Germany.[22] This begs the question of whether Bach also conducted with a paper roll. In the book *Obituary*, it was noted that, "in conducting he was very accurate, and of the tempo, which he generally took very lively, he was uncommonly sure."[23] The word conducting ("Dirigiren") was used, hinting that Bach was perhaps not leading on an instrument.

However, other sources, including another from early 20th century scholar Max Schneider, pointed out that Bach directed from the violin and came to the harpsichord occasionally.[24] This could be supported by Kittel's account (see pg. 44), in which Bach was seen close to the harpsichord during performances so as to allow him to intervene when he deemed necessary. C. P. E. Bach's accounts seem to support this, as he recounted that his father was able to keep the orchestra in better order when playing the violin than playing the harpsichord.[25]

The same statement could also be interpreted that Bach did conduct and direct from the harpsichords. C. P. E. Bach's other accounts stated that, "should someone hasten or drag, the keyboardist is the one who can most readily correct him."[26] Another account from 1738, written by the rector of St. Thomas, J. M. Gesner, noted that Bach was giving the beats with nods, foot-taps, or a warning finger, while singing and playing his own part.[27] This seems as if Bach was working as a maestro al cembalo, expertly directing the orchestra while playing. A report concerning Bach's performance of the secular cantata *Trauerode*, the only of its kind directly describing Bach's performance of a vocal work, stated that Bach was playing the harpsichord during the performance.[28] Since all three scenarios have sufficient accounts supporting them,

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[21] See Tafel II & III of Schering, *Jahann Sebastian Bachs Leipziger Kirchenmusik.*
[22] Dreyfus, *Bach's Continuo Group,* 31.
[23] Ibid, 32.
[24] Ibid, 18.
[25] Ibid, 32.
[26] Ibid.
[27] Williams, *Bach—A Musical Biography*, 513.
[28] Dreyfus, *Bach's Continuo Group,* 32; Williams, *Bach—A Musical Biography*, 550.

Dreyfus concluded that it is possible that Bach filled all three roles as needed, either as the conductor, the maestro al cembalo, or the violinist leader.

Bassoon

The use of the bassoon as a continuo instrument is an interesting case. The main question to be answered is when the bassoon should be used as a continuo instrument. To answer this question, one must first understand under what circumstances the bassoon was used and whether there was more use of the instrument when it was not specified in the score and parts. Taking a quick survey of Bach's cantatas, there are 42 cantatas with bassoon specified, whether on the score or on a specifically copied part. This figure is among all the surviving and lost but documented cantatas, approximately 280 in total.[29] The rough number of 15% of pieces that included bassoon is relatively significant but not prevailingly so.

One of the earlier surveys on Bach's bassoon use was conducted by Terry, who examined 42 cantatas. Terry observed that Bach was conservative in his scoring for the bassoon and that he rarely prescribed it to play notes C_3 or below.[30] Bach was probably also conscious of the ability of his bassoonists in Weimar and Cöthen; he only had one bassoonist available for hire in each location. In Leipzig, since the bassoon was not part of the qualifications to serve on the *Stadtpfeifer* positions, the instrument was frequently assigned to the apprentice, whose skills, in Terry's words, could not have been considerable.[31] Terry further argued that the infrequent use of the bassoon indicates that Bach probably did not consider the bassoon as a regular continuo instrument, and this can be further confirmed by how Bach often used the instrument when completing a wind trio with two oboists. Bach rarely had the bassoon play along with the string continuo instruments when the oboes were not present.[32] Only occasionally did Bach give the

[29] Dürr, *The Cantatas of J. S. Bach*, 964–967.
[30] Terry, *Bach's Orchestra*, 114.
[31] Ibid.
[32] Terry, *Bach's Orchestra*, 116.

bassoon a more important line outside of its normal role of an accompaniment instrument for the double reeds or simply as a ripienist.[33] In BWV 177 and 197, Bach wrote exquisite bassoon parts for a rare talent in his orchestra. This showed that Bach's bassoon usage was perhaps largely dependent on whether he had access to good players.

Dreyfus used another historical narrative to interpret Bach's usage of the bassoon. Around the turn of the 18th century, there were two types of bassoons that were very different in their design, sound, and even their perceptions by others. The German bassoon, often indicated by the Germanic name of *fagott*, was considered to have a strong sound and coarse tone quality.[34] Its origin as an outdoor piper did not help its status among other musicians. It is not known how Bach viewed the German *fagotts*, but Dreyfus used an early incident from 1705 in which Bach offended his bassoon player by insulting the instrument, which may indicate his early negative perception of the *fagott*.[35] It should be noted that Bach was 20 years old at the time, and his ideas may have changed as he matured as a composer and person. The social status of the French bassoonists, or players of the *basson*, were much higher when compared to players of the *fagott*.

This status carried over when these instruments were introduced to Germany. The reputation of this type of bassoon as being elegant, graceful, and noble changed how composers used the instrument.[36] There are no documents showing Bach's change in attitude, but the general change in perception of the instrument, and, subsequently, its instrumentalists, are something to be considered. In a 1730 memorandum, Bach requested "one, or better, two bassoons", which might indicate his later view of the instrument. Kuhnau's writing also supported that the French and German bassoons perhaps served different functions, as he proposed an orchestra that included one *fagott* and one *basson* player.[37] A Weimar bassoon part by Bach also showed that

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[33] Ibid, 115.
[34] Dreyfus, *Bach's Continuo Group*, 108.
[35] Bach called his bassoonist a *Zippelfagottist*, which Dreyfus translated as "nanny-goat-bassoonist". Ibid, 110.
[36] Ibid, 111.
[37] Schulze, "Johann Sebastian Bach's Orchestra: Some Unanswered Questions," 11.

musicians during Bach's time might have access to both instruments. A motet by Johann Christoph Schmidt, later adopted into use by Bach, noted in the parts *Fagotto ô Basson Concert*.[38] A copy of the Schmidt motet exists copied under Bach's hands. It is not known whether Bach altered the original piece or simply copied it.[39] Dreyfus first presented Terry's view, which points to Bach's possible lack of interest in using bassoons unless specifically indicated. However, he also countered the idea, citing Alfred Dürr and Konrad Brandt's belief that, since bassoonists were available to Bach, he could have utilized them whenever possible, especially if he had specifically asked for them in 1730.

Table 5 Structure of BWV 18 (Weimar Version)

Number	Type	Instrumentation
1	Sinfonia	1 bassoon, 4 violas, 1 cello (separate line), continuo
2	Secco recitative	Bass solo, bassoon, cello and continuo (same line)
3	Recitative and chorale	Tenor solo, bass solo, full choir, 1 bassoon, 4 violas, cello and continuo
4	Aria	Soprano solo, 4 violas, cello and continuo
5	Chorale	Tutti

Dreyfus's view on the bassoon took more account of a developing historical narrative. Tracing the bassoon parts throughout Bach's time, it is found that, in his earlier years in Weimar, Bach paid more attention to what the bassoon should play, carefully noting the places where the bassoon should *tacet*. In secco recitatives, where parts for other continuo instruments were still notated with long notes per the convention of the time, Bach indicated the specific lengths he wished the bassoonist to play. In other bassoon parts, he specified diminutions for the bassoon so it played fewer notes than other continuo instruments.[40] The Weimar cantatas also showed Bach's decisions to pair the bassoon with the oboes but not with the strings. Dreyfus noted that, while the

[38] Dreyfus, *Bach's Continuo Group*, 120.
[39] Ibid.
[40] Ibid, 125. See also BWV 199.

bassoon played in the outer movements of the cantatas, there is no clear rule when it comes to the middle movements. Dreyfus believed that the BWV 18 from this time could be used as an example (see Table 5). Bach used the bassoon in all but the penultimate movement. The choice of having the bassoon in a secco recitative but not a full aria certainly showed that there is no strict convention in using the bassoon or not.

That said, Dreyfus' argument is comparably flawed, as he did not consider the musical styles. No. 4, the movement without bassoon, is clearly influenced by the Italian style, in which all strings except continuo instruments were playing in unison. It is essentially a string piece; the reason Bach had the bassoon *tacet* is clear from its stylistic evidence.

Despite Dreyfus' weak argument, the trend still stands as he presented it. Bach paid a significant amount of attention to his bassoon parts in Weimar. When he resumed composing cantatas in Leipzig, the individual treatment of the instrument became significantly less used. Most of the time, the bassoon played from the exact same part or transcription of the continuo line.[41] This might mean that Bach had less time to work on bassoon parts amid a significantly increased workload or that the bassoon began to be viewed as part of the regular continuo group and thus required less attention. The argument for the latter, at least partially, could be seen in the *Cum Sancto* movement of the B-minor mass. Dreyfus noted that the bassoon took on two different roles: the traditional bass role and the continuo group role. The bassoon supports the choral bass when it doubles the voices, which is the traditional role, and then jumps back to the continuo line for ritornello passages, which is the continuo group role.[42] Dreyfus concluded that the changing historical position of the bassoon contributed to Bach's use of the instrument. The German bassoon, along with the Germanic tradition, called for the bassoon to support the choral bass sections, and this was a practice that predated the rise of cantata performances in Lutheran churches. The French *galant* bassoonist was, on the other hand, "prized for his special, elegant

[41] Dreyfus, *Bach's Continuo Group*, 124–125.
[42] Ibid, 126.

timbre."[43] The reconciliation of the two traditions, as noted by Dreyfus, or following the development of the changing trends, could place the position of the bassoons in orchestras in what Bach might have eventually arrived at in terms of his views and expectations of the bassoonist. A more detailed discussion on the practical applications of the utilization of bassoons will be further discussed in case studies in Chapter 7.

Strings

Cello

In the continuo chapter of *Bach's Orchestra,* Terry cited written accounts by C. P. E. Bach and analyzed many (mostly Leipziger) cantatas[44] to establish that, while a keyboard is always present, other supporting instruments were not often specified. This was largely due to the fact that Bach did not always know which instruments would be present each Sunday as he composed his cantata.[45] This assertion seemed to be contrary to the common practice throughout the 20th century for the renditions of Bach cantata performances, which was to utilize a cello accompanying the keyboard instrument on most occasions. Fifty-five years later, Dreyfus' book seemed to agree with Terry, noting that "what may surprise us about Bach's continuo group is how utterly unlike a modern ensemble it is—no assigned seats, no hierarchical positions, [and] a fluctuating number of personnel".[46] Even when the continuo group is vital to the performances by giving, in Quantz words, "vigor to the whole piece", the continuo group is staffed by constantly changing members, which contributed to "no significant alteration of effect."[47] Terry and Dreyfus both listed examples of the unusual instruments used, including the horn, trombone, and other possibilities.[48] It is important to note that, as I continue to examine Bach's usage of the cello as a

[43] Ibid, 131.
[44] Terry, *Bach's Orchestra*, 150.
[45] Ibid, 153.
[46] Dreyfus, *Bach's Continuo Group*, 175.
[47] Ibid.
[48] Ibid, 175–176.

continuo instrument, there was not a strict rule of what the singularly correct combination is [49] and that Bach's choices of instruments could have been based on both artistic choices and practical constraints.

Similar to the development in the usage of bassoons, Bach's earlier works showed him specifying the use of the cello more often in Weimar and later specified the instrument less and less, both in parts and in his scores. In Leipzig, there was more evidence supporting the use of the cello but fewer parts and scores indicating it.

One of the earlier examples against the assumption of using cello throughout all continuo groups was Bach's practice of composing large scale ensemble works. One of the first of this kind, BWV 71 was conceived as a multiple-choir [50] piece in the 17th century tradition. In the cantata, Bach arranged the instrumental forces into four choirs, the percussion and brass choir, the recorder and cello choir, the double reeds, and a string quartet (with violone playing the fourth part).[51] Composed in 1708, this was perhaps before ensembles adopted the more fashionable single choir system. The discussion of Dresden Kapelle in Chapter 2 (see pg. 31) showed that this comparably progressive orchestra only started to consolidate its choirs into a single large ensemble in the 1690s. It can be assumed that, for a smaller town like Mühlhausen, this older practice of using multiple choirs was still in place. In this practice, similar to and perhaps influence by the popular *intermedii* style, there was no single continuo or bass group. Bass instruments in each choir shared and served this function, instead.[52] Since Bach started composing cantatas without having a single continuo group, it cannot be stated that all continuo groups required the cello. Instead, it can be safely assumed that, among the earlier cantatas, unless Bach specifically assigned the cello to the continuo group, it was not used.

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[49] Ibid, 132.
[50] "Choir" in its polychoral sense of the word, pointing towards a small collection of instrumentalists and voices, rather than a vocal chorus in its later meaning.
[51] Dreyfus, *Bach's Continuo Group*, 132.
[52] Howard Mayer Brown, *Sixteenth-century Instrumentation: The Music for the Florentine Intermedii* (Dallas, TX: American Institute of Musicology, 1973), 18.

Dreyfus further presented his argument using cantata BWV 182, composed in Weimar in early 1714, which specifically marked cello *tacet* for a number of passages. He also noted cantata BWV 199, a similar early cantata, which only had the cellist playing in four of the eight movements. This suggests that, as late as the mid-1710s, Bach was still treating the cellist as a ripienist and only doubling the continuo instruments when needed. This is similar to how the German bassoon was used as a ripieno instrument before the French *basson*'s soloistic and *galant* characteristics began to earn the instrument a different role. From this revelation, it can be ascertained that when Bach reused certain Weimar cantatas in Leipzig, he had new cello parts copied. These parts included passages and movements Bach had previously marked *tacet*, signifying a change in his views of cello as a continuo instrument. After Bach was made *Konzertmeister* in Weimar and was given the duty to compose more cantatas, the majority of his cantatas were given cello parts, all clearly marked, often in Bach's own handwriting.[53]

The involvement of the cello in cantatas after the Leipzig period was much more straightforward. Numerous documents, including Bach's 1730 memorandum, supported the idea that Bach used the cello frequently. Bach's cantatas in Leipzig were copied by students or other copyists, and they usually labeled all continuo group instruments as *Continuo*. Thus, it is very rare for the word "cello" or "violoncello" to be included in scores and parts, except occasionally on the covers among the list of instrumentation. According to Dreyfus, the lack of specification in the parts could also have resulted from how the cellist might read from the figured part of the harpsichord player's copy or the part shared with the bassoonist.[54] Most often, it was just omitted, as it would be superfluous to mention it when it was used so regularly.

[53] Dreyfus, *Bach's Continuo Group*, 134.
[54] Ibid.

Violone

The main issue concerning the violone lies with the fact that there was not a single instrument universally referred to as the violone at that time. Multiple instruments were designated by this name, and they varied from region to region. Dreyfus's case study [55] on the Brandenburg concerti concluded that, among the six concerti and their multiple revisions, three different types of violoni were used. Various types of the instrument differed between their size and design, the number and tuning of the strings, the range and register, and how they read their music (as written or transposed an octave lower). Some of the most concerning questions for modern musicians to consider are regarding when Bach used the violone as a continuo instrument when unspecified and whether Bach used the 8-foot or the 16-foot violone.[56]

The first and oldest violone is the German violone, a smaller instrument tuned a fifth lower than the viola da gamba, which played at the written pitch. Dreyfus believed that this instrument was used in earlier works, including those from Mühlhausen and Weimar, with its last appearance in Cöthen. Some early versions of the Brandenburg concerti most likely used this instrument as well.[57] As discussed earlier, the cello was not as omnipresent as it became in later cantata performances. This at-pitch violone served a double role of being the stringed continuo instrument while occasionally jumping down an octave to double the bass line, simulating the notes of a 16-foot instrument. Dreyfus noted that the use of this type of violone was "before composers had adopted the idea of a ubiquitous doubling bass instrument."[58]

Contrary to the smaller violone jumping down an octave, C. P. E. Bach, in his 1765 preface to the publication of Bach's chorales, noted that, when the bass descended so low that it could not be played, the player should play an octave higher.[59] This most likely referred to one of

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[55] Dreyfus, *Bach's Continuo Group*, 142–151.
[56] The 8-foot violone sounds, at pitch, similar to a cello, while the 16-foot instrument sounds an octave lower.
[57] Dreyfus, *Bach's Continuo Group*, 165.
[58] Ibid.
[59] Ibid, 158.

the few 16-foot register sounding violone. The use of the 16-foot violone could be supported by different pieces of internal and external evidence. First, the organs of the time were made with 16-foot stops, and there is no reason to believe that they did not utilize the register when performing cantatas. The sound of a doubled bass note was already present in the ears of the musicians and the congregation. Later on, in Leipzig chorales, there were times when the tenor line dropped below the bass line, further making the case that a 16-foot instrument or stop needed to be used to keep the harmonic integrity. Occasionally, the continuo parts that divide in two had the lower instrument, with the downward stems leaping up an octave. Dreyfus believed that Anna Magdalena Bach copied the leaping part to the violone and the part with upward stems to other continuo instruments (presumably playing on pitch). This would have been a special effect that called for the double bass instruments to play in unison at pitch.[60]

There are two types of larger and lower violone used in Bach's cantatas, a six-string, fretted double-bass gamba which is tuned in D, and a four-string *violone grosso* in C. The former was a double bass version of the viola da gamba with strings tuning an octave below it. Often times, Bach's violone parts are seen as avoiding notes lower than low D. Dreyfus used this as proof that Bach was using the six-stringed instrument in D. An interesting piece of evidence that Dreyfus provided was an error in the manuscript, in which Bach accidentally assigned a C# to the violone and later corrected it to play the whole phrase an octave higher.[61] Finally, the C instruments were used in some revisions of earlier works in which Bach was avoiding the lower notes, yet he revised the piece by adding them again.[62]

While different types of the instrument provided different uses and had slightly different orchestral roles, Dreyfus pointed out that Bach chose his instrumentation practically and was constrained by the availability of the instruments.[63] Regarding the choice between the small G-

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[60] Ibid, 161–162.
[61] Ibid, 147.
[62] Ibid.
[63] Ibid, 137.

violone and cello, which have a very similar register, Dreyfus believed that Bach and his contemporaries could not have taken the issue of timbre very seriously.[64] This could also be used to argue that, between the two 16-foot instruments, the most important information available is that Bach was using a double bass instrument, rather than whether the differences in timbre and sound should be recreated.

Two additional notes regarding the usage of violone in Leipzig are worth mentioning. First, the *Stadtpfeifer* exam included testing the musicians' violone skills. The cello, however, was notably not part of the exam.[65] There are also some surviving parts with violone omitted from certain movements without a particular reason, while having another instrumental part scribed on the back of the sheet, often a brass part. This suggests that the player was serving double duty and performing both a brass instrument during certain movements and violone during others.[66] Some of the *tacet* movements were later added on as well, suggesting that when Bach had enough musicians to cover all the parts, the *tacets* were practical decisions rather than artistic.

Summarizing the information on violone, it can reasonably be concluded that works before Weimar were performed without a 16-foot instrument, while works in Leipzig almost always used a double bass violone. However, like the other issues discussed above, the actual instrumentation of a given cantata needed to be examined on a case by case basis. Parts containing leaps up or down, parts that avoided certain registers, and parts that omitted movements could all contribute to making the decision of whether to double the root notes an octave lower.

Other Stringed Continuo Instruments

Not infrequently, Bach used the viola da gamba for different kinds of settings. Dreyfus pointed out that, in Bach's time, the gamba was no longer an ordinary instrument used for

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[64] Ibid, 165.
[65] Terry, *Bach's Orchestra*, 153; Dreyfus, *Bach's Continuo Group*, 157.
[66] Dreyfus, *Bach's Continuo Group*, 157.

accompaniment. Since it was unusual, Bach's use of the instrument was always for something specific. Either Bach called for its special tone quality or used it as a rhetorical device. Bach associated the viola da gamba with two ideas: the pastoral and the elevated.[67] In the pastoral context, Bach used the gamba to accompany recorders, as seen in BWV 106. The elevated idea came from Bach's association of the instrument with royalty icons, thanks in part to the use of the instrument by French court composers.[68] Bach most often utilized the viola da gamba as a solo instrument. However, when he used it as part of the continuo group, he usually paired it with another solo gamba. Dreyfus attributed the reason why Bach only used the da gamba one single time as a standalone continuo instrument to the reversed bow strokes of the instrument, making articulating short bass notes more difficult than on the cello.[69] It is also important to point out that, even when Bach used the gamba as a continuo instrument, Dreyfus believed that there were most often other rhetorical explanations. For example, the St. John Passion viola da gamba solo has contrasting notions of grief and heroism. Dreyfus also noted the St. Matthew Passion's part, in which the gamba was used as a French-rhythm-dominated recitative, and the cantata BWV 198, in which it was used as a French chaconne. To summarize, it can be understood that the viola da gamba was mostly used for special effects and rhetorical meanings. This was in contrast to the choice of violone, which was mostly limited to practical constraints rather than artistic decisions. The gamba was one of a number of competitor instruments serving the same register but was mostly chosen for artistic reasons.

Another popular instrument of the time, and notably absent from Bach's repertoire, is the lute. Bach only composed two large scale works that explicitly included lute solos, even though both Bach and the musicians of Leipzig were perhaps familiar with it. In fact, Bach's predecessor Kuhnau complained about the lack of access to good lutes for his cantatas in his 1704

[67] Ibid, 166.
[68] Ibid.
[69] Ibid, 167.

memorandum.[70] While Bach's memorandum did not include the lute, there were numerous leading luthiers of the time who resided in Leipzig, including Bach's close friend Johann Christian Hoffman. Dreyfus concluded that, while it is unknown how much Bach used lutes as continuo instruments, using one would not be inappropriate at all, given his close relationship with luthiers. However, the complete lack of written evidence or parts suggests that Bach seldom, if at all, personally asked for one to be part of an ensemble.

Historically Informed Modern Performances

To sum up this chapter and all of Part I of this document, Dreyfus' words are perfectly suited: "There is nothing magical in discovering what happened at one or another performance of a particular church cantata; after all, these were occasional works in which Bach gave little thought to posterity."[71] Accordingly, one could argue that there is less substantial value in pursuing an exact reenactment of Bach's performances. The value of this summary lies in how to interpret the materials presented above in order to assist the modern performer in making historically informed decisions that not only aim for accuracy or historical correctness but acknowledge the same challenges that Bach faced. These challenges are still present today in some form, and Bach's approach to reconciling practical issues with artistic vision could inspire the ways in which modern musicians make similar choices. This will be discussed in Part II of this thesis.

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[70] Ibid, 170.
[71] Ibid, 176.

Part II: Performing Cantatas with Modern Orchestras: Discussion and Case Studies

This part of the study aims to interpret the summaries from Part I and to transform them into performance suggestions. There are countless choices that a performer must make when performing any piece of music. It is even more so when performing well-researched repertoire such as Bach's cantatas when musicians can consult the bountiful amount of scholarship from the 20th century early music revival. However, when trying to apply historically informed knowledge to modern orchestras, there are a number of issues for which a single best solution simply does not exist. This project aims to find logical and acceptable solutions to these that, given the information available, are at least close to what would have been appropriate if the issues had presented themselves during Bach's time.

This part of the research is by no means an attempt to try to narrow down the best practices for any issue raised in this section. However, the outcome would be, to the best knowledge of the project, as historically informed as possible while keeping the practicalities of the modern orchestra and contemporary concert conventions in balance. Fortunately, balancing the artistic and the practical was what Bach had to do every day. In this study, I aim to balance the historical and the practical, to facilitate and allow performers of today to apply their artistic input.

Chapter 4: ORCHESTRA SIZE AND BALANCE

Between One-to-a-Part and Multiplying Strings

One of the first choices a musician must make when performing a Bach cantata with a modern assembly of a choir and a chamber orchestra is to determine how large the performing force should be. One must decide whether the performance should be one to a part as a certain strand of proposed research suggests or whether doubling certain instruments is permittable and, if so, by how much. In order to make these decisions, I propose to first investigate the composer's intentions in terms of the orchestral effect. The aural and visual impact would be significantly altered if a one to a part, almost chamber-like, piece was performed by a 50-person group or vice versa. This is not to say that the first performance, or even Bach's expected orchestral and choral size, was the right and only way but that the intended *effect*, whether to convey a sense of majestic grandiosity or tender sweetness, could be communicated through the makeup of the ensemble.

Conductor and scholar John Butt cautioned musicians not to put too much emphasis on "what the first performers did," but to ask, "How did this music come to be written like that in the first place?"[1] Butt further elaborated on his belief that historical performance should be focusing on the original *creation* of music rather than the original *reception*.[2]

In the case of Bach's BWV 71, one of his earliest largescale works, it could be examined by asking the questions that Butt proposed. Cantata BWV 71 was composed in 1708 in Mühlhausen, shortly after Bach's visit to Lübeck. If modern musicians are to follow the hypothesis proposed by Schulze (see pg. 30), that Bach was present during Buxtehude's cantata performances and was indeed influenced by that experience when composing BWV 71, it could reasonably be hypothesized that the system of multiple instrumental choirs and the large number

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[1] Bernard D. Sherman, *Inside Early Music* (Oxford: Oxford University Press, 2003), 175.
[2] Ibid.

of parts were trying to recreate a grand effect similar to that which Buxtehude's orchestra presented. In this case, since we have previously established that the number of parts correlates to the number of musicians available, it would not be inappropriate to keep the performing forces small (i.e. one to a part) to recreate the sound that Bach might have imagined. The smaller group of musicians that create an exceptionally textured piece of music might be able to produce the effects Bach put into the music. The possible usage of an orchestra this size could be further supported by another piece of evidence. Since his youth, Bach was familiar with the Hofkapelle in Celle, a notable group that performed well. The court chapel, which employed 19 musicians, was large compared to other regional courts. It is very possible that this was the largest orchestra that Bach had seen before visiting Lübeck. If this is correct, the ensemble of 15 instrumentalists and four singers that performed the 15-part cantata would be the exact size of that in Celle. Its size perfectly provides Bach an orchestra that is larger than most performances the audience of Mühlhausen's tiny six piece "orchestra" had seen.

One final argument to support playing BWV 71 one to a part would be to honor the tradition of polychoral music. Even though there is no stipulation for how big a polychoral ensemble should be, the separate choirs need to be more or less balanced between groups. For a modern orchestra, a string section could vary in size with the winds and brass adapted to the correct balance. However, for a polychoral ensemble, or even a late Baroque ensemble, the internal division was not viewed as sections grouped by instrumental families.[3] Thus, duplicating strings would not make as much sense since strings were not considered a separate section at this time. Duplicating certain instruments would only throw the multiple choir structure off balance. In this case, the intended effect of the orchestration, the orchestral development, and Bach's

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[3] The consolidation of choirs, which led to the grouping of instrumental sections within an orchestra, developed slowly through the Baroque and Classical periods. According to Spitzer and Zaslaw, it was not until the "international orchestral consensus" of the 18th century that orchestras finally began to be viewed as a combination of two (or three, adding brass) major sections, rather than choirs or the five or four voice structure. Spitzer and Zaslaw, *The Birth of the Orchestra*, 334–337.

understanding of orchestras around him all supported the decision to perform this piece one to a part.

Later, when Bach moved to Cöthen, most of the works were still performed one to a part, according to research cited above (see pg. 23). We have established that the ensemble at Cöthen might have directly influenced the orchestration of the Brandenburg Concerti and the number of parts. The concerti, although not cantatas, could still provide scholars with information on Bach's practice with orchestral doublings. Even when the concerti were probably originally performed one to a part, the modern approach could vary, depending on what the musician wants to achieve. For the Third Concerto, since there is not a *concertino* (a virtuoso smaller group of soloists) group present, the music of the whole nine-part strings was composed virtually giving equal weight to each part, with each of them carrying their own virtuosic and soloistic passages. With such distinct quality and distribution of parts, it would be best if the piece was performed one to a part to keep the chamber music effect, and the soloistic passages performed by a single soloist rather than a tutti section. On the other hand, the First Concerto was composed similar to symphonic work with multiple doublings written in, including the indication of a *violone grosso* playing the 16 foot register.[4] Therefore, there is no strong case against this piece being performed by a modern orchestra with further doublings and a larger string section.

For Bach's Leipzig period, the 1730 memorandum recorded that Bach asked for a larger orchestra. However, this information cannot prove that all of Bach's works were composed for a larger group. Certain scholars, including Joshua Rifkin, continue to advocate for one-to-a-part performances of these later works. He believed that, even when certain parts and documentation proved that Bach sometimes had access to a larger string section and an orchestra of around or more than 20 musicians, Bach could still have been composing for smaller ensembles when he

[4] See pg. 24. The opening movement was later reused as a sinfonia, which may indicate that the symphonic effect of the piece was more apparent to Bach compared to the more chamber music-like concerti.

knew the works would be performed by smaller groups.[5] However, Spitzer, as the foremost scholar on orchestral music, was previously cited as believing the frequency of the duplicate parts sufficiently allowed scholars to assume Bach's Leipzig orchestras were much more orchestral than Weimar and Cöthen.[6] Spitzer also believed that, despite Bach's recorded complaints to the city council, Bach regularly had access to an 18 to 20 member orchestra.

Given the trend of enlarging orchestras in the early 17th century, most materials seem to agree that whenever Bach had the opportunity to use a larger orchestra, he did so. Even when scholars could not prove that all of Bach's later cantatas were composed for a large orchestra, there are documented occasions showing that Bach almost always made use of the extra musicians when a large orchestra was available. Bach made use of bigger orchestras, either by doubling the instruments or having new parts copied.[7] Examples, such as the violone player doubling on horns, which Bach later copied in a full part without the *tacets* originally placed because of the limitations, showed this trend.[8] The fact that Bach's earlier cantatas had additional parts made when they were reused in Leipzig shows us that, even when Bach was working with older works that were composed for smaller ensembles, adding more doubling instruments or tutti musicians was not a practice out of the ordinary.

Therefore, according to the information available, including the context of orchestral developing trend, it could be suggested that Bach established a pattern of adapting works for larger orchestras when available. Bach often asked for and, on several documented occasions, had access to relatively large orchestras. Bach's Leipzig cantatas, as well as earlier cantatas, can sufficiently be proven to have been performed in Leipzig by a larger chamber orchestra with tutti string players forming a section. The information above informs us that as long as the strings do

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[5] Joshua Rifkin, "More (and Less) on Bach's Orchestra," *Performance Practice Review* 4, no. 1 (1991): 12, doi:10.5642/perfpr.199104.01.2.
[6] Spitzer and Zaslaw, *The Birth of the Orchestra*, 248–249.
[7] See pg. 55.
[8] Terry, *Bach's Orchestra*, 153; Dreyfus, *Bach's Continuo Group*, 157.

not sound out of balance compared to the solo wind instruments or the continuo group, the string section could reasonably be enlarged for later cantatas. Two or occasionally three desks would be appropriate, given Bach's statements and practice. More strings would be acceptable if they could play soft enough when needed.

For earlier cantatas, it is important to find internal evidence that uncovers the possible reasoning behind Bach's instrumentation and other choices. In the case of BWV 71 discussed above, the case for one to a part could be made based on the polychoral quality, Bach's knowledge of other orchestras of the size, and the common practice of expanding parts instead of players.[9] This example indicates that making the choice of one to a part or an ensemble with duplicate strings could be based on style, context of the orchestral development at the time, the expectation of both the composer and the audience, orchestral texture, and the balance among sections, instruments, and voices. By focusing on the reasons behind Bach's choices in composition and basing arguments of practical choices on that, this follows Butt's recommendation of investigating the original creation rather than the reception.

On the other hand, there is no evidence during this time period that supports the doubling of the winds. Even in the 19th century, when doubling winds were common, Robert Franz's multiple winds arrangements were still opposed by purists of his time.[10] Apart from this, Bach often used winds as solo instruments or participants in duets, trios, or concertino groups of soloists. Therefore, the soloistic and chamber music quality should be maintained. It could reasonably be believed that, even when a larger string section is used with a modern orchestra, no doubling of the winds is necessary, nor is the practice appropriate for the music. An additional discussion on making decisions between having one to a part or tutti strings will occur in the case studies in Chapter 7.

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[9] The "German Lullists" as discussed in Chapter 2, because of budgetary constraints, often copied the French style, not by recreating a large French string orchestra, but by expanding the number of parts to create an aural illusion of a larger ensemble.
[10] See pg. 42.

Between Singers and Instrumentalists

Earlier studies on the topic of balancing the singers and instrumentalists often concluded that the singer count is similar to the number of instrumentalists.[11] Terry's view, as cited in Chapter 2, holds that 17 choristers, along with a similar number of instrumentalists, were Bach's regular numbers of musicians. Schering's study on Bach's choral sizes concluded that most of Bach's surviving parts, which consistently numbered four with one available for each voice, were shared by three voices, a concertist and two ripienists, making the normal choir a small 12 member chamber choir.[12] Rifkin believed that it was Terry and Schering's subconscious bias towards a larger choir that led them to conclude with a larger number than what the uncovered materials suggested.[13] Similar to his advocacy for one to a part instrumentalists in Bach's orchestral pieces, he also believed that Bach's choirs were mostly vocal quartets without ripienists. Parrott's study on the topic, also cited in Chapter 2, painted a similar picture, in which he not only used Bach's materials but compared them with other composers from the same time who worked similar jobs in regions around Leipzig. Most of the materials show that four singers were used against a much larger ensemble of 15 to 19 instrumentalists. Only occasionally during festivals would more singers be called. In fact, the ratio for Bach's choir was already slightly higher than some of the other composers, at 1:2 to 1:6, as compared to 2:5 and 1:7.[14]

There are questions as to whether this number of singers could counterbalance the much larger orchestra, especially when people may perceive early music singing as light, transparent, and angelic. It could be counter-argued that, since the evidence overwhelmingly agrees on the tiny vocal section paired against the much larger orchestra, it in fact sheds more light on this issue than those raised; the assumption of voices being light and difficult to outweigh the instruments is

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[11] See pg. 36.
[12] Parrott, *The Essential Bach Choir*, 189–191.
[13] Ibid, 208.
[14] Ibid, 128. See also Chapter 9 of Parrott's *The Essential Bach Choir* for more studies and discussions from period iconographic sources.

a notion that originated in contemporary times with a modern imagination. The hard evidence of the popularly used singer-to-instrumentalist ratios should not be questioned with modern assumptions but, instead, should serve as answers to them. Additionally, it could be logically assumed that musicians like Bach and Mattheson, who put so much emphasis on the text and its relationship with the music, would not allow voices to be drowned out by the instrumentalists. It is possible that the voices might be louder than currently assumed and the instruments might have played lighter or had different tonal qualities than what can be conceptualized today. The acoustics of the spaces might be also have been used to the singers' advantage.

On this issue, Parrott quoted German-Dutch composer and theorist Johann Adolf Scheibe's words from 1745, which suggested hiding the trumpets and timpani behind other instruments to maintain a distance between them and the voices.[15] This shows that Scheibe was aware of this issue and suggested the solution of separating the instruments using physical space and objects, such as instruments and players in between to dampen the sound. Even more telling is, when based on his suggestion of having four or five violins per part, the vocal parts could, "where possible, have more than one to a part".[16] This suggests that, at Scheibe's time, and with larger orchestras, it still needed to be noted that choirs needed more than one to a part, further strengthening the argument that Bach's choir was most probably often one to a part and that musicians of the time were perfectly aware of the possible balance issues. Notice that, with Scheibe suggestion of having more than one singer to a part to counter the four to five string players per part, it would not be difficult to speculate that the balance was probably fine during Bach's time, with a much smaller orchestra than that of Scheibe's time.

Two additional arguments that Parrott presented would also be informative for the modern performer making choices on orchestra and choir sizes. Firstly, Bach did use ripienists when needed. Using BWV 71 as an example, in a piece that utilized the usually large

[15] Ibid, 132.
[16] Ibid.

orchestration including three trumpets and a set of timpani, surviving voice parts show that at least four additional singers were called for. It is interesting to note that, while Bach most likely used one-to-a-part instrumentalists for this otherwise grandly composed cantata, he also chose to double the number of singers. Second, doubling does not necessarily mean better balance. Parrott cited research on perceived loudness, which concluded that while the human ear can easily pick up incremental volume changes, such as those in a crescendo or decrescendo, comparing two distinct sounds of different volume would require one to triple for a human to realize the difference.[17] With the outcome of this research, Parrott calculated that even with a choir four times bigger, the notable volume would not even be twice as loud to the human ear.[18] Parrott concluded his study on balance by arguing that the function of the vocal ripieno group had more to do with sonority than with balance or volume.

When making choices for the modern ensemble, it is important to consider whether an enlarged instrumental ensemble, as permitted with later cantatas per the previous conclusion, requires a larger vocal ensemble to balance. Having a larger choral ensemble is also permissible according to historical practice. However, one should use the same principle of determining the vertical structure, compositional technique, and the number of parts to consider if making the ensemble larger loses the transparency and cleanliness in the sonority of a vocal ensemble that consists of only solo singers. To determine this, a similar approach must be utilized. A performer must first determine what Bach might have been focusing on in the choral writing of a given piece. If the performer believes that the sonority of the vocal group is more important, the corresponding orchestra might have needed to be reduced to accommodate a smaller choir or vice versa.

The major difference between considering whether to enlarge the orchestra or the choir lies in historical evidence. There are clear indications throughout Bach's lifetime that the

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[17] Ibid, 138–139.
[18] Ibid.

orchestras around him, as well as his own orchestras, were gradually expanding. However, choruses in this region did not see this development as clearly. This is especially telling considering Bach's former student Scheibe's statement regarding the need for "more than one" singer from decades after Bach's death. It is possible that choirs did not expand as much in Bach's immediate region, at least compared to orchestras.

Because of the complexity of the matter laid out above, this thesis would, therefore, not be able to produce a conclusive suggestion as to whether to use soli singers or to enlarge the chorus when balancing against a larger modern orchestra. Contemporary instruments are most likely carrying much more weight and penetration in their sound. Nonetheless, there are several possible suggestions that could be made. First, a musician could work with voices that are larger and more soloistic. These singers could then work with modern instrumentalists who are often able to play very soft when instructed to. It is also possible for a performance to utilize a larger chorus but single out passages to *tacet* the ripieno singers, as Bach had done with several of his cantatas. The approaches mentioned above could certainly be mix-and-matched as needed. Just as the historical sources on orchestral and choral sizes could cross reference each other and provide musicologists with clearer pictures of Bach's ensemble for performers today, the size of the two components are still codependent and would rely on the performers to decide what to choose and which tradeoffs could be tolerated when striving to perform in a historically informed yet modernly adapted fashion.

Chapter 5: DISCUSSION ON INSTRUMENTATION FOR THE MODERN ORCHESTRA

Period Strings Versus Modern Strings

Around Bach's time, the standard 4-part string quartet, as it is known today, had already become the foundation of most German orchestras' string sections, namely the two violins, viola, and cello (or other 8-foot bowed bass instrument).[1] Influenced by the Italian church ensembles switching from being brass-based to string-based,[2] as well as French string bands that gradually added wind instruments to their ranks,[3] the German orchestras adopted a similar string section in terms of instrumentation. Bach only composed ten cantatas that did not use a standard string section of four principal parts (*divisi* notwithstanding). Among the ten, only one was dated after Bach moved to Leipzig in 1723.[4] From this and other information regarding Bach's close contact with major ensembles in Dresden and Berlin, it can be assumed that Bach's idea of a string-based orchestra, with a string quartet serving as the foundation, is close to that of other orchestras of the time in the same region.

It was about that time that the different kinds of violins, including the *piccolo* which Bach used, and ones with varying body widths, gradually became standardized, while the cello remained more flexible in its construction, size, structure.[5] This paper will not delve deeply into the varying styles and their effects on the instruments but instead focus the general differences between instruments of the time and modern instruments, in order for the modern performer to make appropriate adjustments when performing Bach's music.

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[1] See pg. 21.
[2] Spitzer and Zaslaw, *The Birth of the Orchestra*, 56–63.
[3] Ibid, 63–65; 77–79.
[4] Terry, *Bach's Orchestra*, 122.
[5] Jeremy Montagu, *The World of Baroque Classical Instruments* (Woodstock, NY: The Overlook Press, 1979), 65–66.

Across the different shapes, sizes, and makers of instruments, one of the major differences between instruments of Bach's time and current modern instruments is the tension of the strings.[6] The lower bridge, and in some cases, the shorter neck contributed to this lesser tension.[7] Its physical difference to modern instruments makes the period instruments inherently limited in the volume. The gut strings, especially when used for the upper strings, produce a softer tone, which is considered by some as the, "ideal coloring for Baroque violin music"[8] During Bach's time, low strings on the instruments might have used gimped gut strings, as these produce a larger and more responsive sound when compared to simple gut strings that are tuned lower. Gamut Music, a company that makes modern replicas of Baroque strings, noted that these gimped gut strings were to be used on the lower two or three strings of most Baroque string instruments.[9]

The bows of that period influenced not only the sound but also the articulation of the notes the instruments produced. Compared to Tourte bows, which are mainly used or modified after the 19th century that are ideal for sustaining notes and producing a "rich and massive tone"[10] and a variety of different articulations, earlier bows were said to be played more transparently in tone and arguably produced crisper articulations.[11] Bach also used mutes for his ensemble music, the usage of which is further supported by Quantz's mentioning in his essay of 1752 from Berlin.

This basic information on Baroque string playing might provide little for the modern player to rely on, since words like transparent, coloring, and light give hints at what tone quality to strive for but remained vague in their application and the actual sonority. Therefore, it is more important to consult information on the perception of the instruments from people of the time. It

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[6] Robert Donington, *The Interpretation of Early Music* (New York: W. W. Norton & Company, 1992), 531–532.
[7] Ibid.
[8] Ibid, 533.
[9] Gamut Music, a specialist period strings manufacturer describes the gimped gut strings product on their page: https://www.gamutmusic.com/gimped-gut.
[10] Werner Bachmann et al., "Bow (Fr. Archet; Ger. Streichbogen; It. Arco)," Grove Music, December 05, 2017, accessed November 25, 2018, https://doi.org/10.1093/gmo/9781561592630.article.03753.
[11] Donington, *The Interpretation of Early Music*, 533.

is also more telling to investigate how people viewed the instruments when compared to other instruments. These two points warrant further investigation and will provide modern performers with information that could better generate a similar effect in relation to other instruments rather than recreating an exact period sound.

17th century French scholar Marin Mersenne pointed out that the violin, which may or may not mean the violin but also the string family in general, had more effect "on the spirit of the hearers than those of the Lute or other [plucked] string instruments" and that they were "more vigorous and indeed penetrating".[12] The lightness and transparency of the late 20th century Early Music Revival often conveyed vigorousness; but describing the sound as penetrating gives scholars an arguably different point of view on the effects of the Baroque violin, especially when compared to the repertoire of the modern violin. It could be posited that the sound of the instruments was indeed light compared to the modern violin but was considered by the audience of the time as penetrating. This could be true, yet this argument could also support a counterargument: since the contemporary ear is accustomed to the penetrating sound of the modern violin, Baroque music today must be performed with even more vigor and determination in order to create the same result and effect to the modern audience.

Another piece of supporting evidence comes from Leopold Mozart's violin treatise in which he urged beginners to "play strongly" and that the roughness of sound will decrease.[13] He continued by adding that the sound will be purified and the "purity will be combined with the strength of tone."[14] With Baroque bows, gut strings, and lighter tension, the Baroque violin would still sound less strong than a modern violin, but from Mozart's treatise, it could be assumed that, at least for good teachers, a strong and full tone is still preferred. The same document provided an additional word of caution against playing too lightly noting that "you should not confine yourself

[12] Ibid, 537.
[13] Ibid.
[14] Ibid.

to the point of the bow with a certain kind of quick stroke which hardly presses on to the string but must always play solidly."[15]

Summarizing the information provided above, it can be argued that the modern string section should achieve the following: 1) a full sound that projects, 2) solid bow strokes rather than short and light, and 3) an engaged playing style that conveys the vigorousness required of the music, while acknowledging that Baroque strings by nature sound different than modern ones.

In order to achieve these rather contradicting attributes, modern performers must refrain from creating an artificial lightness to imitate what an imagined Baroque style might sound like. Instead, this thesis proposes that the performers using modern instruments should approach the music as if it is no different from music from other periods and play with the same type of full and rounded sound that is appreciated in Beethoven, Brahms, or Mahler. While doing so, the performers must be conscious of the difference in instrumental organology and adjust accordingly since the upper gut strings naturally sound softer than the lower gimped strings. The notes played on those strings should be played at a softer dynamic than written or otherwise played. The shorter bow and decreased bow tension could be recreated with faster bow speed and lighter bow pressure, while proceeding with caution as to not fall into what Leopold Mozart warned against. Instead of limiting the modern violinist's repertoire of modern techniques, the different colors lost in the high-tension modern strings should, instead, be achieved by carefully choosing from the full-array of modern techniques, including those like *sul tasto*, which typically would not be associate with Baroque playing by some modern orchestral players.

I believe that the characteristics of Bach's styles can only be achieved when modern instruments utilize their wider range of capabilities to present and interpret their historically informed decisions rather than limiting what they do. This is not to advocate for the full modernization of Bach or Robert Franz's arrangements, nor is it following Mahler's idea of

[15] Ibid, 537.

performing works in the style of what the composers *would have wanted* should they have had access to modern instruments. Rather, I believe that, in accordance with the same principle inspired by John Butt discussed in Chapter 4, it is more important to investigate the original creation rather than the reception. The question of "why it was written like this and how we could achieve that" is much more important than "how it was performed and how we can recreate that." It is only when scholars understand the differences in the instruments and how they were used can knowledge regarding modern instruments be utilized to achieve the *reason* behind Bach's writings. This thesis does not assume that Bach's original reason is easy to uncover, nor does the scope of this project intend to include each organological detail. Rather, this project advocates for further investigation into any of the topics regarding period strings that could provide more insights into both the physical difference and the difference in their effects.

Period Winds and Natural Brass Versus Modern Winds and Brass

Similar to the previous section, this paper summarizes the differences between the most used wind and brass instruments and then discuss possible ways to perform historically informed compositions with them. For woodwinds, I will look at the flute, oboe, and bassoon, along with trumpets and horns of the brass section. Other instruments, some of which were often used but do not exist in a modern form, including the *oboe da caccia* and recorders, will be discussed in the section following this one.

Flute

The development of the flute is well documented in numerous sources and will not be repeated here. I will only summarize Bach's usage of this instrument. The variant Bach most likely used was the dominating variant of the time, the one-keyed flute with six holes.[16] This type of flute was used more often in solo playing. The meantone tuning of this type of flute was met

[16] Ibid, 554.

with concern by certain soloists, including Quantz. He insisted on using a subvariant of the flute with two keys, providing different pitches between E-flat and D-sharp and two different set of gamut generated based on the two notes.[17]

Terry's analysis of Bach's use of the flute concluded that the instrument was associated with sentiments of "pious emotions of the soul," the "quiet agony of death," and with its purity could "carry the soul's devotion to the throne of God."[18] Others also noted that the flute is capable of producing both expressive soft tones and massive *fortes*.[19]

The description of the Baroque flute is not too different than how 19th or 20th century composers viewed the flutes of their time. Because of the similarities, specifically towards the wide range of effects and emotions, we understand that the flute's role in a Baroque orchestra is similar to that in a modern orchestra. It can be reasonably assumed that, as long as the modern flautist pay attention to the appropriate Baroque phrasing and articulation, as well as stayed in balance with the rest of the orchestra, no particular technical changes are needed.

Oboe

The oboe, along with other double reed instruments, has a long and rich history in Renaissance and Baroque Europe. Bach's association with the instrument spanned his entire composing career. His oboe of choice was mostly dependent on its availability in his current location. For instance, he used the oboe in C at Mülhausen, Leipzig, and most other works, while using the B-flat in Weimar. Occasionally, Bach also used an A variant.[20] Terry also noted that Bach often chose to not bother the players with changing instruments and simply left the instrument out for movements in inconvenient keys.[21] For modern players, it is convenient that the modern Viennese oboe is still a cousin of the Classical oboe, which is very similar to Baroque

[17] Montagu, *The World of Baroque and Classical Musical Instruments*, 45.
[18] Terry, *Bach's Orchestra*, 66–67.
[19] Donington, *The Interpretation of Early Music*, 554.
[20] Terry, *Bach's Orchestra*, 96.
[21] Ibid, 98.

oboes Bach would have used.[22] The sound of the Viennese oboe has been noted to be, "clearly marked in the middle register, which is reedier and more pungent, and the upper register, which is richer in harmonics."[23] Using a Viennese modern oboe, or imitating its tone qualities, it can easily produce a sound similar to what Bach's players would have made.

On the stylistic front, Donington quoted two primary sources for how musicians of the time perceived the qualities of the oboe sound. Different from Classical or later associations of the oboe with the melancholic sentiment, Baroque oboes were considered by Francois Reguenet as having "the advantage of the violins in all brisk, lively airs" and by Jean-Laurent de Béthizy as being "gay and is particularly suited to open-air entertainment."[24] For Bach, it was possible that the lamenting double reed quality was associated with the *oboe d'amore* and *da caccia*, while the regular oboe carried sentiments that were much happier and lively.

Bassoon

The bassoon has been previously discussed in the continuo section (see pg. 49). It is important to note the bassoon's development from having a coarse sound and lowly reputation, to an instrument of the aristocrat and the sophisticated. This development is largely owing to the introduction of the French *Basson* and the reputation associated with it, which gradually replaced that of the German *Fagott*.

Regarding the 18th century *basson*, Donington quoted Anthony Baines, describing the instrument as having a sweet and beautiful tone, "something like a well-played modern French bassoon", yet softer, firmer, and "rather cello-like".[25] For the modern performer, this is the sonority to aim for. Further information about the bassoon's role as a continuo instrument can be found in Chapter 3 of this document

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[22] Donington, *The Interpretation of Early Music*, 558.
[23] Geoffrey Burgess and Bruce Haynes, *The Oboe* (New Haven: Yale University Press, 2010), 212.
[24] Donington, *The Interpretation of Early Music*, 558.
[25] Ibid.

Trumpet

The issue with natural brass is much bigger. On the technical side, there are debates regarding whether some of the notations should be read an octave higher or if should a lower variant of the trumpet should be used to allow the harmonics to fill in all the needed notes. There are also contradicting accounts of how the trumpet should sound in terms of its *Affekt*. Mattheson and Schmidt, as quoted in Terry's book, characterized the trumpet as "resonant and heroic" and "exultant",[26] while Mersenne said that trumpeters are able to "imitate the softest echo".[27] Moreover, the natural trumpets in the Baroque and Classical period might have served completely different purposes. Donington noted that, before the mid-18th century, more composers wrote music in accordance with trumpeters' skills in producing high notes.[28] The virtuosic and melodic trumpet writings began to disappear during Mozart's time when orchestral trumpet parts became much simpler. This can be seen in Mozart's and Haydn's symphonies, in which the trumpet is usually playing on the lower harmonics that are further apart and easier to manage.[29]

For modern musicians, the only possible instruments to produce most of Bach's more difficult trumpet writings are the piccolo trumpet and the soprano trumpet as they are the only variants currently capable of producing the high notes required by Bach. As for their tonal quality, it can be assumed that the melodic parts, such as those in Bach's BWV 147, should be played softer so as not to drown out the orchestra. The fanfare passages, like those in Handel's "And the trumpet shall sound" from Messiah, should be played heroically and triumphantly, as described by Mattheson.

[26] Terry, *Bach's Orchestra*, 23; also see pg. 48.
[27] Donington, *The Interpretation of Early Music*, 567.
[28] Ibid, 566.
[29] Ibid.

Horn

The horn shares much of the same issues as Bach's trumpets. Because of the vagueness of its nomenclature, researchers do not agree on what kinds of instruments Bach may have used or whether Bach meant different instruments when calling for *corno da caccia* rather than simply *corno*.[30] It is still unclear whether *corno* was just shorthand for the *da caccia* variant of the instrument. Some of the specifics of these variants will be discussed in the section below, which focuses on missing instruments. However, the general understanding of Bach's horns is that, according to Donington, the exceedingly difficult high horn parts were playable because of the general virtuosity of trumpet playing. Brass players generally played multiple instruments and were trained for the accurate production of extremely difficult lip harmonics.[31]

Similar to the trumpet, the high notes are still incredibly difficult or impossible for modern players to produce, even if period instruments are used. Therefore, it is not beneficial to further discuss what kind of technique or tone quality a musician should use, other than what produces the notes correctly, solidly, and comfortably for the players. In regard to instrumentation, the only possible instruments suggested by Donington would be the modern French horn in F. A B-flat alto horn or the German *Tenorhorn* could also be used, as it is easier on the instrument to produce the high notes. However, doing so sacrifices the warm sonority expected by horns due to the wider bores of the tenorhorns.[32]

One note regarding natural brass in general is that, compared to having modern orchestral string or wind players play on period instruments, there are many more brass players today who, although are not period instrument specialists, have experience and training on natural instruments. For instance, the Kammerphilharmonie Bremen, an otherwise normal modern chamber orchestra, frequently utilizes natural trumpets and horns to create a historically informed

[30] Ibid, 563–564.
[31] Ibid.
[32] Ibid, 564–565.

sound in a modern context.[33] The same can be done with modern orchestras that are performing Bach. If there are players who have the skills to tackle the high horn and trumpet notes, a natural brass instrument should be utilized.

The Missing Instruments

Because the aim of this thesis is not organology research but practical applications, this section is a summary of possible substitutions along with important information regarding their usage with Bach's orchestral music. Some of the instruments discussed below are more problematic than others and may have opposing scholarship available pointing to what the original instrument was. Because of the limited scope of this project, I will not present the arguments that do not contribute to an easier decision for modern orchestras.

Strings

The *violoncello piccolo* was used in 11 cantatas, eight of which were composed in the two-year span of between October, 1724 and November, 1726.[34] There are debates on whether this instrument was the same as the *viola pomposa* or *cello da spalla*, which is then considered as related to the *viola da spalla*.[35] For modern performers, the instrument is similar to a smaller cello with the same tuning with an additional high E string.[36] The instrument body itself is smaller, thus producing a lighter, less resonant sound. Bach's usage of this instrument focused on the higher register. Dreyfus believed that the role of the instrument was not conceived as a continuo instrument but as a solo, melodic one.[37] Given the range, a modern cello, especially a smaller instrument, would be suitable for today's orchestras.

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[33] David Allen, "All Brahms, by the (Smaller) Numbers," The New York Times, August 8, 2014, , accessed November 25, 2018, https://www.nytimes.com/2014/08/09/arts/music/mostly-mozart-with-the-conductor-paavo-jarvi.html.
[34] Dreyfus, *Bach's Continuo Group*, 172–175.
[35] Ibid.
[36] Terry, *Bach's Orchestra*, 136.
[37] Dreyfus, *Bach's Continuo Group*, 174.

The *viola d'amore* was very rarely used in Bach's works, but notably appeared in the St. John Passion. The 7-string instrument's range falls entirely within the modern viola's gamut. The sound of this instrument would be closer to its close cousin, the viol, which was already rare in Bach's time.[38] The famous *Diary of John Evelyn* (a work detailing his observation on mainly cultural activities, buildings, and art spanning the years of 1640–1706) noted that the *viol d'amore*, presumably the same instrument, was noted for its *swetenesse* (sweetness) of sound,[39] which was later echoed by Leopold Mozart. Given the relationship between the viola and the viol family and its range, the most suitable modern instrument is the viola. However, given its rarity, as it only appeared in three cantatas, it is possible that Bach chose the instrument specifically for the musical pieces that he used them in. It would not be unreasonable for the modern orchestra to hire a specialist for certain solos.

The *piccolo violin* was used in the Brandenburg Concerto and a small number of cantatas composed around 1730, which according to Terry, was a time when Bach was eager to experiment with different instruments in his compositions.[40] Different sources point to the piccolo as being a minor third or a perfect fourth higher than the violin, with the same number of strings tuned a fifth apart. Bach's surviving parts support the minor third theory. Since the instrument is a smaller violin, without any documented differences other than the size, using a *scordatura* 7/8 or 3/4 violin tuned to the appropriate key would be suitable in a modern orchestral setting.

The *viola da gamba* is an instrument that has been extensively researched with materials widely available. The fretted, 6-stringed instrument was already out of fashion as a continuo instrument during Bach's time.[41] In terms of its origin, despite the fact that it is played with a bow, it is a closer relative of the lute than some of the other instruments of the bowed string

[38] Terry, *Bach's Orchestra*, 129.
[39] Ibid.
[40] Ibid, 125.
[41] Dreyfus, *Bach's Continuo Group*, 166.

family.[42] As previously discussed in Chapter 3 (see pg. 58), this instrument was often used as a rhetorical device, associating the sound with either pastoral sentiments or royal and majestic ideas. The range of the gamba lies within that of the modern cello's, but the fourth-apart tuning of the strings could make playing the part on the cello difficult. Therefore, similar to the situation of the *viola d'amore*, a specialist could be hired, especially for solos such as in St. Matthew Passion, which is often a highly visible role. If this is not possible, a cellist should be used.

The *violone* is also extensively researched and discussed in Chapter 3. For the earlier, smaller violone, a cello should be used, since the register is similar and because the small violone often can take on more melodic roles than the later, larger violone. The latter two variants, the D violone and C violone, should be played by the modern double bass, another octave transposing instrument with a similar range.

The *violetta* is a difficult case, starting with understanding which instrument it was for. Since the violetta only appeared in two Bach cantatas, the cantata BWV 16 and BWV 157, it could be suggested that this instrument was also one of Bach's experimental instruments. Numerous scholars proposed that the violetta is either the viola pomposa, an ordinary viola, a type of alto viol, or a medium violin.[43] Internal evidence suggests that it was an instrument with a similar range to the normal viola. However, BWV 157 was composed for both the viola and the violetta, making the ordinary viola less likely to be the candidate. Terry further argued that the adjective of pomposa is clearly the opposite of the diminutive form of the word violetta,[44] especially if a musician considers the hypothesis that Bach invented, or was heavily invested in, modifying the viola pomposa. Bach would not have used a different name that meant something completely different than the original name. As such, the only candidates remaining are the alto viol or a lower, larger version of the violin family. Given such little information, the modern

[42] Terry, *Bach's Orchestra*, 132.
[43] Ibid, 127–128.
[44] Ibid, 127.

performer can only choose to play it on the viola. For the experimental, one could use the alto violin invented by Carleen Hutchins in the 1950s.[45]

Winds

The recorder is not strictly an extinct instrument but one that is not used in orchestras anymore. Some earlier recordings of Bach cantatas mistakenly used the flute, as they are often denoted as *flauto* in scores and parts. In terms of historical development, it is true that the recorder gave way to the vertical flute. The flute has a similar structure to the recorder which eventually led to the invention of wooden flutes and the brass-coated modern flute.[46] Given this history, it is understandable to use flutes as substitute recorders. However, since the two instruments coexisted during Bach's time, and since Bach had both instruments available to him in Leipzig, the choice of using either would be an artistic one. Therefore, it is preferable for orchestras to hire recorder players rather than relying solely on flute players.

Oboe taille and *oboe d'amore* were both considered part of the alto oboes of the instrument's family. The d'amore saw a revival of its use in the late 19th and early 20th centuries after both instruments fell out of the favor of composers after the Classical era. Large modern orchestras tend to either own the instrument or have access to one, and an oboist who is willing to double as a d'amore player is often used. For the oboe taille, which is a transposed instrument in F, the ideal substitute instrument would be the only other surviving F-instrument in the oboe family, the *cor anglais*.

The *oboe da caccia*, which is also in F, is often seen today as a curved instrument and is meant to represent an English hunting horn.[47] Given the similarities and other pieces of evidence, researcher Reine Dahlqvist believed that it is highly probable that, at least after 1720, the oboe da

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[45] Margalit Fox, "Carleen Hutchins, Innovative Violin Maker, Is Dead at 98," The New York Times, August 08, 2009, accessed April 23, 2019, https://www.nytimes.com/2009/08/09/arts/music/09hutchins.html.
[46] Montagu, *The World of Baroque & Classical Instruments*, 39–43.
[47] Terry, *Bach's Orchestra*, 103.

caccia in Bach's works was an early version of the modern *cor anglais*.[48] Therefore, it is logical to use the modern cor anglais to play da caccia parts. One item to note is that, when the da caccia is being called together with the taille, the taille is almost always assigned to play with the viola or on similar lines that occupy the tenor (in French, *taille*) position. Contrastingly, the da caccia, often doubled by the oboe player, plays solo or soprano/alto parts.[49] A distinction regarding tonal quality should be made if both instruments were to be played by modern cor anglais players.

Brass

There are two types of sliding brass instruments indicated in Bach's cantatas that are no longer in use today, the *tromba di tirarsi* and *corno di tirarsi*. The corno di tirarsi is an inexplicable instrument that was never discussed outside of Bach's works. Because of the similar range and the lack of information apart from scholarship on Bach, musicologist Bertil Van Boer concluded that it was the same as the tromba di tirarsi.[50] Terry argued that the mouthpiece could have been changed to give the instrument a more horn-like tone quality, but his argument was not supported by any evidence and was not further discussed by later scholars.[51] The tromba di tirarsi is largely extinct, with only two surviving instruments currently preserved in Germany. These include a mid-17th century instrument, which looks like the long natural trumpet with a slide, and an early 19th century instrument which looks like a small trombone.[52] The similarities between the instrument and the trombone is still notable despite their appearances. Terry quoted Johann Friedrich Doles, the St. Thomas cantor in 1769, who commented on a *Stadtpfeifer* candidate by

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[48] Reine Dahlqvist, "Taille, Oboe Da Caccia and Corno Inglese," *The Galpin Society Journal* 26 (1973): 68. doi:10.2307/841114.
[49] See the chorales of BWV 122, BWV 80, BWV 88, and other cantatas using both tailles and da caccias.
[50] An archive picture of the instrument could be viewed in Grove's database: http://www.oxfordmusiconline.com/view/10.1093/omo/9781561592630.001.001/omo-9781561592630-e-8000900131#omo-9781561592630-e-8000900131; Bertil H. Van Boer "Observations on Bach's Use of the Horn: Part II," *Bach* 11, no. 3 (1980): 14.
[51] Terry, *Bach's Orchestra*, 35–36.
[52] An archive picture of the instrument could be viewed in Grove's database: http://www.oxfordmusiconline.com/view/10.1093/omo/9781561592630.001.001/omo-9781561592630-e-8000900131#omo-9781561592630-e-8000900131.

saying, “He cannot manage [to play] the Zugtrompete [most probably pointing towards the tromba di tirarsi] and has to do the best he can on an alto trombone.”[53] This shows how the instruments were viewed differently, even in the 18th century when multiple brass instruments were often interchangeable.

Certain period instrument makers have reintroduced the slide trumpet, along with attempts to create the slide horn from scratch. The instruments are difficult to come by, even for period ensembles. For the modern orchestra, an instrument with a similar range should be used. Today, this would be the alto trombone, even though the evidence above notes that they are different. The range of the instruments in four different keys are between A_2 and E-flat$_4$, which almost completely overlaps with that of the modern alto trombone. Some higher parts could possibly be shared with a soprano trombone or other valved/piston brass instruments, as a last resort and practical solution.

The *cornett*, not to be confused with the modern cornet, is an instrument Bach often used to produce sustained notes and *cantus firmus*.[54] The cornett is a wooden instrument with a mouthpiece that creates sound with lip vibration as a brass instrument. It has the range of A_3 through A_5.[55] The lack of an equivalent wooden instrument today means that whatever modern instrument is chosen to replace it will lose some significant attributes of the original instrument. Given the range, a trumpet, an oboe, or an English horn might be the most suitable substitute, but no ideal solution could be determined for this thesis.

The *corno da caccia* is another instrument about which scholars disagree. However, Van Boer concluded that all of Bach’s horn-family instruments are associated with the Waldhorn or the Jagdhorn,[56] both of which could find their closest modern relative as the French horn in F.

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[53] Terry, *Bach’s Orchestra*, 36.
[54] Ibid, 36–37.
[55] Ibid.
[56] Horace Monroe Lewis, “The Problem of the Tromba Da Tirarsi in the Works of J.S. Bach,” Doctoral Dissertation (Louisiana State University, 1975), 21.

Due to a lack of materials contributing to more detailed answers that are relevant to this focus, I will, for practical reasons, conclude that the French horn is the best substitute for the corno da caccia, regardless of what the original instrument was. Similarly, the *lituus*, barely mentioned in the literature of Bach's time, was only used once in Bach's BWV 118. Given the warm sound needed in the funeral motet, a pair of French horns would also be a logical solution, which is supported by modern editions of the work already including parts transposed for the horn.[57]

Continuo Instruments

Details regarding the continuo instruments have been presented in Chapter 3. In this section, I will use the information cited above and focus on the modern application of forming a continuo group within a modern orchestra.

Regarding the use of keyboards, numerous scholars, including those cited in previous chapters, hold strong positions that Bach used exclusively organs, harpsichords, or some combination of both. This thesis will refrain from presenting an original argument but will take the stance that the dual accompaniment, as strongly suggested by Dreyfus, is a practical approach that is historically appropriate and achievable for modern ensembles. Similar to how C. P. E. Bach argued that the harpsichord could be the first to react to issues within ensemble music making, it is practically easier for the harpsichordist to direct the orchestra. In this case, an organist should be hired to form the dual keyboard continuo group with the harpsichord director.

From the information presented in Chapter 3, I also conclude that, while the cellist is not always needed, especially in earlier works, having a cellist to perform most works would not be out of the ordinary.[58] The only exception would be when Bach wanted to create a different orchestral/chamber color with the continuo group. Dreyfus argued that the internal evidence of BWV 106, with an unusual two recorder and two viola da gamba orchestration, should be

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[57] Kalmus, Neue Bach Ausgabe, and Carus all provided horn parts to their orchestral set.
[58] See pg. 54.

performed without any doubling of bass instruments. He suggests that it is correct to leave the organ to accompany the recorders alone when the gambas are silent. Other than this kind of special effect, a cello could be used. Even with earlier works in which Bach might have used the smaller violone as the sole bowed continuo instrument, the cello is the best practical choice for a modern orchestra, as I have concluded above that the cello is the most viable substitute instrument for the small violone.

For fretted instruments, the lute could be used, and Dreyfus suggested that even if there is no evidence suggesting Bach used them, they were popular among similar orchestras. Bach would have been familiar with a number of well-known lutenists residing in Leipzig. No other plucked string instruments were proposed by Dreyfus or Terry, nor are plucked string instruments indicated in any of Bach's scores and parts. However, a small number of other popular instruments could still be considered. A few recordings by Pickett, Gleobury, Herreweghe, and Jefferey Thomas used the theorbo, which is another popular continuo instrument of the time.[59] There is no strong evidence for or against this in this study. Thus, I believe that it is up to the performers to make creative artistic choices.

For the bassoon, apart from what was discussed in Chapter 3, one can look to Bach's usage of the instrument in works that specifically asked for the instrument. Among 42 cantatas that called for the bassoon, 33 of them had instruments of the oboe family present. Among the nine cantatas that do not include the oboes, three were scored with other types of winds and brass instruments. It could be suggested from the frequency that Bach, most of the time, imagined the bassoon with other double reed instruments or winds and brass. Terry's observation (see pg. 49 and 51) of Bach having the bassoon to *tacet* when only the strings are playing, also supports the idea that the bassoon was mostly conceived with the winds. Therefore, it is logical to assume that, for the continuo parts that do not specify instrumentation, bassoons could possibly be involved if

[59] See list compiled by Bach-Cantatas.com http://www.bach-cantatas.com/Topics/Continuo.htm.

there are oboes or, to a lesser extent, winds or brass playing. This would be even more probable as the attitude towards the bassoon changed for the better. The sweetness of sound provided by the bassoon,[60] can now be viewed as a favorable addition to the orchestral sound and could contribute to more uses of the instrument as part of the continuo group.

[60] Donington, *The Interpretation of Early Music*, 559.

Chapter 6: DISCUSSION ON TEMPERAMENT AND PITCH FOR THE MODERN ORCHESTRA

Pitch

Tuning in Bach's time is not as simple to understand as it is today. There was not a single universal standard pitch like the approximately A_4=440 that is known today. The conventional belief has been that in Bach's Leipzig, the organs were mostly tuned at the *Chorton* (choir pitch), at approximately a semitone above the modern A_4. Other instruments were mostly tuned at *Kammerton* or chamber pitch, at a whole tone below the *Chorton* and about a semitone below the modern A_4.[1] However, the accuracy of the statement could be disputed. Arthur Mendel, a mid-20th century scholar, believed that the Leipzig works were written for a pitch similar to the modern one, while Weimar and earlier works were for a *Chorton* a whole tone above it.[2] It should be noted that, even with disputing hypotheses of what the actual pitches of *Chorton* and *Kammerton* were, it is undisputed that they were mostly a whole tone apart, which could be proven in numerous sources, including Bach's orchestral parts.

Bach's parts were generally written in *Kammerton,* since most of the instrumentalists play on this pitch, and the organ parts were often transposed a whole tone lower. This was a time when musicians were using different temperaments. The transposition of a fixed tuning instrument like the organ would undoubtedly create issues of intonation with the rest of the instruments. It could be argued that the practice of transposing was tedious and undesirable, so much so that this could be one of the reasons why Leipzig's Nicolaikirche rebuilt its organ in *Kammerton* in 1793.[3]

Apart from the not-yet-standardized pitches and the difference between *Chorton* and *Kammerton*, the issue of intonation is further exemplified by the fluctuation of pitches during a

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[1] Beverly Jerold, "Pitch in the Vocal Works of J. S. Bach" *Bach* 31, No. 1 (2000): 76.
[2] Ibid.; Donington, *The Interpretation of Early Music*, 508.
[3] Jerold, "Pitch in the Vocal Works of J. S. Bach," 77.

performance (*e.g.* the pitch of the wind instruments naturally grow higher as they warm up) and the practice of virtuosi musicians intentionally tuning their instruments higher to gain perceived brilliance and strength.[4]

Given such a wealth of information regarding pitch, it could be argued that not only is there not a standardized pitch, the idea of having a standardized pitch probably did not exist at the time. Johann Gottfried Schicht, conductor of the *Gewandhausorchester* and cantor of Leipzig's St. Thomas, once complained about the ever-increasing high pitch level. He advocated for a standard pitch to be used since the rebuilt of the Nicolaikirche organ.[5] At approximately the same time, Viennese musicologist Kiesewetter, searching for a good pitch to serve as a standard, noted that the frequently changing pitch was a great disadvantage to singers because of their comparably fixed tessitura.[6]

Due to the lack of a standard pitch, the debate regarding what the actual pitches are for Bach's vocal works remains inconclusive. There are numerous and varying proposals as summarized in Beverly Jerold's study "Pitch in the Vocal Works of J. S. Bach."[7] Noting Kiesewetter's argument regarding the changing pitch being difficult on the voice, surviving vocal music could serve as good indicators of the relative difference of pitch levels between the different cities Bach worked in. A mid-20th century study by Arthur Mendel and Alfred Dürr suggests that the Weimar pitch was a whole tone above that of Leipzig's, citing the deceptively low pitch notated in Weimar cantatas.[8] Bruce Haynes based his study on the Mendel/Dürr study while taking into account the range of the wind instruments along with the transposition of the

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[4] Ibid.
[5] Ibid, 77.
[6] Ibid, 80.
[7] Ibid.
[8] Arthur Mendel, "On the Pitches in Use in Bach's Time I," *The Musical Quarterly* 41, No. 3 (1955): 332–354. http://www.jstor.org/stable/739796.

parts. He concluded that the Weimar pitch should be a semitone higher than that of Leipzig's, rather than a whole tone.[9]

Jerold took the information above, further compared the instrumental parts with the vocal parts, and took into account certain transpositions that would produce unfavorable keys and major temperament clashes.[10] Citing that a notable number of the Weimar string parts were reused in Leipzig, Jerold concluded that if the pitch used was significantly different between the two cities, the cantatas sharing the parts would sound significantly higher in Weimar. Comparing the vocal parts with the Weimar string parts, he argued that, with the quality of his singers, it was almost impossible for the Weimar pitch to be a whole tone or even a semitone above Leipzig's. Assuming the Leipzig standard was the commonly believed one semitone below the contemporary pitch, Jerold concluded that the *Chorton* in Weimar, which is what the singers were reading from, was probably not that much higher than Leipzig's *Kammerton*. The Weimar pitch would thus be somewhere between the modern pitch of A_4=440 and a semitone below.[11]

The summary of the studies above does not directly provide a way for modern orchestras to apply their practices. It is fundamentally impractical for modern orchestras to adjust pitches in any significant way. However, it is understood that, in order to come to terms with the ever-changing pitch standards between cities or even between churches, musicians during Bach's time constantly transposed their works. Selecting the right key and pitch to perform were often subject to change according to the practical circumstances. For Bach, it was necessary to adapt, and the same could be applied to modern orchestras. It would not be unimaginable that, if Bach had a choir or soloist unable to comfortably reach a particular high or low note, the piece could be transposed as needed. In the same way, if any modern instrument cannot play a certain note on a substitution instrument, and providing that the singers are capable, it is not inappropriate to

[9] Jerold, "Pitch in the Vocal Works of J. S. Bach," 85–86.
[10] Ibid, 89.
[11] Ibid, 95.

transpose. For pieces with demanding high notes for the trumpets or voices, transposing it down a semitone for the Leipziger *Kammerton* and Weimar's *Chorton*, or even down a minor third for Weimar's *Kammerton,* should all be considered what Bach would or might have done. This is not to say these practices and transpositions should be encouraged but that doing so will not deviate far from the spirit of a historically informed performance.

Temperaments

After addressing transposition, the issue of temperaments remains. The complicated history of scholarship into Bach's temperaments will not be discussed here as it is well-known that Bach used a version of the modified meantone temperament with possible wider major thirds and perfect fifths, which allowed more keys to be used.[12] Bach's choice of temperament allowed transpositions on instruments to be carried out more easily than before, further supporting the conclusion above that transpositions are "allowed". Conflicting information exists on Bach's organ tuning, with arguments ranging from completely equal temperament to much closer to meantone temperament. It is argued by Jerold that, judging from accounts by Mattheson and others, equal temperament may have been employed earlier than what people previously assumed.[13] It could have been well understood at the time that large ensemble music making required equal temperament.[14]

On the other hand, because of the constantly sustaining chords of the organ, Donington believed that organs perhaps stayed with meantone much longer than other keyboard instruments did in order to avoid the beats that would be clearly and easily heard when tuned equal.[15] Leaving these arguments aside, even if Bach used equal temperament on all his transposing organs, the winds were still tuned differently while the strings needed continual adjustment. There is still not

[12] Donington, *The Interpretation of Early Music*, 514.
[13] Jerold, "Pitch in the Vocal Works of J. S. Bach," 90–91.
[14] Ibid.
[15] Donington, *The Interpretation of Early Music*, 515.

an answer to the question as to how Bach avoided the different temperaments of the instruments, especially after transposition. Quantz, as previously cited, insisted on using a two-key version of the flute to avoid tuning issues (see pg. 76) and the instruments at Leipzig did not show these variations. Jerold hypothesized that intonation during this period was less precise than it is today, especially since it was not until the mid-19th century that wind instruments achieved a "uniformly even intonation".[16]

Fortunately, good orchestral musicians of today are accustomed to the idea of tuning modifications. In orchestra rehearsals, it is not uncommon for the conductor to ask certain players to play higher or lower than what the otherwise accurate equal temperament pitch would be. It is also common for brass players to write in chord positions and where their note lies in context to adjust accordingly, and good string quartets tune their perfect fifths narrower than just intonation alone. These practices all show that good musicians today are accustomed to adjusting their tuning to produce better harmonies. This could be used to an advantage when bringing Bach's works to modern orchestras. It is possible for modern orchestral musicians to adjust the intonation of specific chords to better express the possible historical temperaments and the effects they create.

A compromise in this situation could be made to provide different colors to different keys, which is similar to how substitute instruments were suggested in Chapter 5. I propose choosing a temperament that is applicable to modern instruments and does not deviate far from modern orchestral conventions. One of the top candidates would be Valotti tuning. Although Valotti tuning was invented after Bach's time, it is notably closer to equal temperament compared to some other systems. It includes the narrow fifths the strings are accustomed to[17] and the more just intonation the brass players are accustomed. In this case, the conductor would not necessarily

[16] Jerold, "Pitch in the Vocal Works of J. S. Bach," 90.
[17] With Valotti having a slightly lower E and higher C, D, and G, this covers all of the open strings of the string section and forms narrow fifths that would already be preferable by modern string players.

point to the exact temperament when rehearsing an orchestra but subtly tune the orchestra using this temperament. It is difficult for a modern orchestra to learn a new temperament, but it is significantly easier for modern musicians to adjust certain notes higher or lower, as this is already expected in an orchestral rehearsal setting. The mild temperament, rather than full equal temperament, provides different colors to different keys, arguably closer to what Bach would have known, while keeping modern musicians in a comfortable zone in regard to their intonation.

Chapter 7: CASE STUDIES: APPLYING HISTORICALLY-INFORMED PRACTICE TO THE MODERN ORCHESTRA

In this last chapter, I will analyze six cantatas and discuss potential solutions to instrumental choices and applying historically informed practice for modern orchestras to perform with. The cantatas are chosen from periods ranging from Bach's earliest works to roughly ten years after his last cantata cycle ended. The cantatas are also chosen because of similar issues, such as having "missing instruments", debatable string section sizes, and vague instrumental indications. These case studies could serve as suggestions for performing other cantatas or Bach's works.

Table 6 List of Case Study Cantatas

BWV	Premiere	Location	Instrumentation
143	New Year, approx. 1708	Mühlhausen (or Weimar)	3 corni da caccia, timpani, bassoon, 2 violins, viola, cello, continuo
21	Trinity III, approx. 1713	Weimar	3 trumpets, 4 trombones, timpani, oboe, bassoon, 2 violins, viola, continuo
77	Trinity XIII, 1723	Leipzig	Tromba di tirarsi, 2 oboes, 2 violins, viola, continuo
67	Quasimodogeniti, 1724	Leipzig	Corno di tirarsi, flute, 2 oboe d'amores, 2 violins, viola, continuo
80	Reformation, 1731	Leipzig	2 oboes, 2 oboe d'amores, oboe da caccia, oboe taille, 2 violins, viola, cello, violone, continuo
30	St. John's Day, 1738	Leipzig	3 trumpets, 2 trombe di tirarsi, 2 flutes, 2 oboes, oboe d'amore, solo violin, 2 violins, viola, continuo

For each of the six cantatas, I will determine the possible size of the orchestra, the substitute instruments (if needed), the appropriate continuo group instruments, and an anticipated sound and balance for the modern orchestra. I will also present the justification of the choices if they are not evident from this study. I will use the movement numbering and bar numbers of the

Neue Bach Ausgabe, edited and published by Bärenreiter, along with manuscript scores and parts from the Bach-Digital.de archives for these endeavors.

Cantata BWV 143

An early work of Bach's, the original manuscript of BWV 143 is lost, and the work is undated.[1] Its similarity in orchestration and scale to the 1708 BWV 71 could give modern scholars some clue regarding its date. Internal evidence suggests that it was composed for New Year's Day and the feast of the Circumcision of Christ. Christian Wolff noted that the authenticity has been doubted due to the lack of an original manuscript and the usage of three horns, which was never used in any of Bach's other works.[2] However, using its usual instrumentation and the lack of documentation for an early work like this as the only pieces of evidence, I consider this a comparably weak argument. Because of the lack of documentation on the date of the premiere, we do not know whether this was composed for Mühlhausen or Weimar. However, since Bach's first six years (1708–1714) at Weimar did not include composition duties, it could be argued that it was composed for Mühlhausen, where he was expected to compose and had access to the orchestra. The orchestra at Mühlhausen, as previously discussed, is smaller than the 10-instrumentalist minimum for BWV 143, but one has to remember that it was nonetheless able to cover the 15-piece orchestra of BWV 71 with external help.

At the time it was first performed, regardless of whether it was composed for Mühlhausen or Weimar, the original performance of the piece was most likely one-to-a-part for both singers and instrumentalists, given the limited resources available in both cities. Some hints from the orchestration also support this possibility.

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[1] Christoph Wolff "The Late Church Cantatas from Leipzig" in Johann Sebastian Bach, *Complete Cantatas Volume 21*, The Amsterdam Baroque Orchestra & Choir, Ton Koopman, Challenge Classics B000F7MKN8

[2] Ibid.

Figure 1 Measures 10–14 of BWV 143 No. 1

In the first movement, at the canonic entrances at mm. 10–11, Bach assigned the four subjects to the first violin, second violin, viola, and bassoon (see **Figure 1**). To avoid having the four entrances bottom heavy, Bach had the rest of the continuo group play the root of the chord rather than playing with the bassoon obbligato. A few bars later at mm. 14–15, the horns, presumably louder and whose sound traveled further, was countered with fugal entrances that were doubled, with the two violins playing in unison for the first entrance and the bassoon doubled by the viola for the second entrance.

Another interesting instrumentation contrast is between No. 4, 5, and 6. The No. 4 tenor aria is accompanied by the strings with a bassoon assigned to the continuo group. The No. 5 bass aria is accompanied by the horns, the timpani, the obbligato bassoon, and the continuo group. No. 6, the tenor aria, is back to string accompaniment with a solo bassoon. Numbers 4 and 6 could imply that the bassoon needed to be balanced to at least the same volume as the string instruments. Comparing No. 5 with the surrounding numbers, we can also understand that the tutti horns needed to be balanced with the bassoon, implying that the tutti horns might have a volume similar to the string section/quintet.

For a modern performance, it might be difficult to have a simple string quartet to balance three horns. It is also implied with the relatively ambitious scoring for the time that Bach was looking for a relatively large orchestral sound. Therefore, it is appropriate to have a slightly enlarged string section as long as they do not overpower the single bassoon, which in No. 1 should play at a volume similar to a single violin or viola section.

Other than how Bach might have used one-to-a-part for the voices in his original performances, there is no other internal evidence that would prevent a chamber choir from singing the first and last movements of the cantata. In the last movement, since the orchestration is relatively dense, the balance of the instrumental ensemble and the voices needs to be carefully adjusted. If the string section is larger than a quartet, a choir of more than a vocal quartet could be considered, unless one is utilizing four soloists.

In terms of instrumentation, only the use of three corni da caccia warrants discussion, as the other indicated instruments (other than those of the continuo group) exist today in their modern forms. The range of the horns is extremely high if played by the modern F horn, specifically in the first and last movements. To perform this, an expert horn player who is able to play notes a minor third higher than the usual ceiling of written C_6 (which is possible but difficult), should be employed. Alternatively, the part could be played on a B-flat *Tenorhorn*, which makes the high notes notably easier but requires an instrument most orchestras do not have in their possession.

As for the continuo group, two instruments were specifically indicated, the bassoon and the cello. The bassoon has dedicated obbligato parts in Nos. 1, 5, 6, and 7, along with No. 4, which assigned the bassoon to the continuo part. Since Bach specifically asked for the bassoon in No. 4, it could be argued that, for the rest of the numbers, the bassoon should not join the continuo group. Internal stylistic evidence also supports this supposition, with No. 2 scored as strings only and No. 3 as a short recitative. The cello only appeared in the indication of the continuo group in No. 7. Cellos, as previously discussed, were only gradually introduced to orchestras in the late 17th century through the early 18th century. For a piece possibly composed around 1708, this is an interesting addition. However, since Bach only specifically asked for the cellos in the last movement, it could be because the denser orchestration required more presence of the continuo group, and, thus, a cellist was assigned to it.

What this might tell modern scholars, in consideration of how Dreyfus argued that not all pieces should be assumed to have a cellist on the continuo (see pg. 54), is that only the last movement called for the cellist to be the bowed string continuo instrument. For the other movements, judging from other pieces of this time, Bach may have utilized an 8-foot sounding violone, the smaller kind that plays at written pitch,which Bach used more often in his earlier days. If these notions are true, then, for the modern orchestra, a cello should be used in place of the violone to play all the continuo parts. A second cello should also be added to double the

principal cello in the last movement, taking the position of the indicated cello part, as Bach prescribed. If an enlarged string section is used, a single cello should play all the continuo parts, and tutti cellos should play the ensemble numbers, with the last movement played at least twice as loud as the other movements to keep the original intended orchestral effects.

For keyboard continuo instruments, an organ should almost certainly be used, as this was the tradition in most of Bach's church music. A harpsichord could be used, although for a piece as early as this, there is no evidence on whether the dual accompaniment convention was already in place. A lute is almost certainly not present, and the only known associations of Bach with lutes was in Leipzig. (It is worth mentioning that BWV 996, the only lute suite composed before Bach's time in Leipzig, was hypothesized to have been composed for the lute-harpsichord rather than the lute itself.)[3] This, in addition to the severe limitation of musicians in both Weimar and Mühlhausen, would be difficult to imagine that Bach managed to hire an additional continuo instrumentalist.

Cantata BWV 21

Although there are also debates on the exact origins of this cantata, the general consensus is that this piece was composed for Trinity III in Weimar, perhaps in 1713.[4] What is different about this piece is that this cantata received numerous revisions and was performed a number of times after its premiere. These performances include a 1720 performance, the possible Hamburg performance as Bach auditioned for a position there and a 1723 performance as part of Bach's third cantata in his first cantata cycle, along with a last revision in 1731, possibly preparing for a last performance of the work.[5] This current discussion will be based on the later Leipzig revision

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[3] Edwin M. Ripin and Denzil Wraight, "Lute-harpsichord (Fr. Clavecin-luth; Ger. Lautenklavecimbel, Lautenklavier, Lautenwerck)," Grove Music, January 20, 2001, accessed November 25, 2018, https://doi.org/10.1093/gmo/9781561592630.article.17215.
[4] Dürr, *The Cantatas of J. S. Bach*, 410.
[5] Bach-Cantatas.com database listed this revision as the last performance. However, no other record can be found pointing to an actual performance of this version.

parts. A notable touch by Bach was the titling of this cantata as one for "Trinity III or any time", allowing the piece to be performed not just for a specific occasion but anticipating it to be performed repeatedly at later times, which, Bach himself did.[6]

This cantata is scored for a large orchestra, and the instrumentation is exceptionally clear, with the continuo parts clearly dictated for bassoon, cello, violone, and the organ. Four trombones were called for in the Leipzig edition, even though they only played in one movement, doubling the strings counterpoint in the choral movement of No. 9. Excluding the trombones, it included 12 different parts for the instrumentalists. In its earlier Weimar performance, it could, again, be assumed that it was performed one-to-a-part. The 1720 performance, if it was indeed the Hamburg audition performance, would have been performed by a larger orchestra, as cited above (see pg. 41). This would have been a Lübeck-sized orchestra, which, according to Schulze, had 24 musicians available and more to be privately hired.[7] It would not be difficult to imagine that the 1720 performance would have included an enlarged string section, with or without an enlarged choir. When Bach revised this cantata again in 1723, it would have been his third regular cantata performed at his new job.

Along with the four added trombones in No. 9, with 18 to 20 musicians at his disposal (see pg. 65) (if not more for larger works), Bach probably would have at least doubled his string quartet into an octet for this ambitious work. An even larger string section could have been a possibility, considering the trombonists might well be the same musicians who played on the trumpets. With the exception of these three or four musicians, Bach easily had more than 12 musicians for him to triple the strings.

For a modern orchestra, a modestly sized (in modern terms) string section could be justified, given the possibility of Bach himself having used a rather large string section. Tutti cellos and basses could be used during ensemble movements and accompanied recitatives (Nos.

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[6] Dürr, *The Cantatas of J. S. Bach*, 410.
[7] Schulze, "Johann Sebastian Bach's Orchestra: Some Unanswered Questions," 5.

1, 2, 4, 5, 6, 8, 9, and 11) and *tacet* during continuo arias, which include No. 3, a soprano aria accompanied by only the oboe and the continuo group. Other than the continuo, the instrumentation is completely playable with the equivalent modern instruments of those parts indicated by Bach. The first trumpet part extends to a concert C_6, which is playable with good technique. A soprano or piccolo trumpet might also be used if the trumpeter prefers to utilize that instrument.

The continuo group has very clear instrumental indications. The cello, violone, bassoon, and organ were listed in the parts, and it is not certain whether Bach used a harpsichord during any of the four performances. If so, it could be assumed that Bach played from a copy which was not part of the orchestral copy; it is unknown whether this piece was performed from a score, an unmarked copy, or an unfigured copy. The violone Bach used could have changed from the earlier small violone to the double-bass sized instrument during one of its revivals. Since Bach's violone part completely doubled the cello part, which included the C_2 note, the D-violone must not have been used. Both the earlier small violone tuned in G and the latest C-violone could have played that note, with the latter transposing it an octave lower. For the modern orchestra, five-string basses or those with C-extensions should be used.

The use of the bassoon is very interesting and could serve as an indication for Bach's preference on the instrument for pre- and early Leipzig cantatas. Among the eleven numbers, the bassoon was marked as *tacet* for three, the thinly orchestrated arias and duets (Nos. 3, 8, and 10). Four of the eleven (Nos. 1, 4, 5, and 7), either played exactly the same part as the continuo group or the same part with *tacet* measures in arioso passages, which are only accompanied by the continuo. The remaining four could be divided into two pairs. The first pair is Nos. 6 and 9, in which the bassoon essentially doubled the choral bass throughout. (As discussed previously, this is the bassoon's old role as the German *Fagott*, a coarse sounding instrument with a centuries-old job of providing foundational notes for the choir.) The second pair consists of Nos. 2 and 11, in which the bassoon jumped between two functions, the choral-bass-doubling instrument and the

continuo accompanist. It is particularly notable that in No. 3, an aria with an oboe solo, the bassoon was not used. It could be explained that, at this point, the bassoon was still viewed by Bach in its old role. Bach's later cantatas gradually used the bassoon more often as part of a double-reed section or trio,[8] which could be understood that the newer role as the French *Basson*, a solo instrument, began to replace the older tradition.

Cantata BWV 77

Cantata BWV 77 is also part of the first cycle. It was first performed on Trinity XIII in 1723. This is an otherwise normal cantata with its limited scale and instrumentation. The use of *tromba di tirarsi* warrants some discussion, but the most distinctive feature of this cantata is the form and compositional technique of the first movement, which may inform scholars and musicians as to how it should be performed.

The basic instrumentation of this piece is very straightforward. A standard string quartet or section, with two oboes among the winds and a solo tromba di tirarsi should be employed. The string quartet could be doubled with the same reasoning as those presented above, in that Bach might have doubled it when he had the players. The oboes played a duet in No. 3 to accompany the soprano aria and later most likely joined in the final chorale. The tromba di tirarsi, as previously discussed, could sometimes be substituted with the alto trombone. However, given the high range (up to a concert C_6), which is barely playable even with a soprano trombone, it is best to be played with a trumpet (which would still be difficult) or a variant of which. The same should be applied in No. 5, in which the slide trumpet is asked to play a solo part to accompany the contralto soloist with a virtuosic part that also touched the high C. In the final chorale, the instrumentation was not indicated in Bach's parts. Barënreiter's editor assigned the tromba da

[8] See cantata BWV 42, Movement I.

tirarsi to the soprano part as Bach might have done.[9] Given the lower range, a musician could use the alto trombone for the last number.

The majority of this discussion will be focused on the first movement's instrumentation and compositional context. The movement is that of the old, traditionally learned style, with numerous fugato passages and heavy counterpoint spread among the voices and orchestral parts. The slide trumpet repeats the chorale theme on top of the orchestra, while the continuo instruments insert the same theme as *cantus firmus* at the bottom. Between the cantus firmus and the trumpet chorale tune, the strings and the voices exchange carefully written counterpoints and canonic or fugal subjects. Whenever the continuo cantus firmus plays, the continuo line drops down to bass G-clef register. Between different entrances of the cantus firmus lines, the continuo group plays up at least an octave into alto C-clef register and doubles the viola. Only the C-clef register passages have figures.

A few questions might be asked regarding this movement and its continuo group, such as: 1) Who are among the continuo group instruments? 2) Is there a 16-foot register instrument playing, and is it playing the alto clef parts as well? 3) During the cantus firmus passages, are keyboards present, and are they playing *tasto solo*?

Since this piece was composed well into the 1720s, it can be assumed that a cellist was already a standard member of the continuo group. From information cited in previous chapters, it is also understood that the D- or C-violone, the double bass 16-foot instruments, were available. Since there wind and brass instruments present, a bassoon could be used. The same could be said for the harpsichord. However, the traditional church style, in which this piece was written in, required long sustaining notes that the harpsichord might not be able to contribute much to.

At the very beginning of the first movement, the first beat calls for a unison G note, with the violas joined by the continuo. Judging from this information, it could almost be assumed that

[9] Johann Sebastian Bach, *BWV77*, ed. Werner Neumann, (Kassel: Bärenreiter, 1958), 22.

Bach wanted one single note, meaning *tasto* solo on the keyboard(s) and no 16-foot instruments (e.g. violone) or additional organ stops present. It was also rare for the violone to read from an alto-clef part. However, further investigation shows that the alto-clef passages lead musicians to sections where the choral bass is an octave lower than the violas and continuo group (i.e. mm. 35–37, see **Figure 2**). It would be difficult to imagine if Bach wanted a special effect there at such an unassuming place, and it might be possible that the violone was playing along after all, if the octave effect was present throughout the piece.

Figure 2 Measures 35–37 of BWV 77 No. 1

As for the keyboard instruments, it is interesting to note that Bach's figures stopped after the first 22 bars. Throughout the rest of the cantata, figures only reappeared twice. It is possible that the figures were not there to indicate what to play but instead were a part of Bach's compositional process, working out the opening fugato, especially when later similar passages do not have figures present. Therefore, it is inconclusive to say whether the keyboard instruments were playing *tasto solo* during the cantus firmus. The choice would be up to the performer to make, with neither artistic choice being inappropriate in its original context.

Cantata BWV 67

Towards the end of Bach's first cantata cycle in 1724, BWV 67 was performed on the first Sunday after Easter. Bach used a chorale "Erschienen ist der herrlich Tag" in the center of the piece and arranged the rest of the six movements symmetrically around it (see **Figure 3**). Alfred Dürr also pointed out the symmetrical design within movements, including the inserted choral fugue in the 2-part song form of movement I and the repeating cycle of string orchestra sinfonia, choir stanza, and bass solo within the movement.[10] This showed Bach's focus on carefully designing his works with clever microstructures along with ingenious macrostructures. The focus on the chorale possibly also influenced his soon-to-begin project on composing a chorale cantata cycle.

Chorus: *Halt im Gedächtnis Jesum Christ*
Aria: *Mein Jesus ist erstanden*
Recitative: *Mein Jesu, heißest du des Todes Gift*
Chorale: *Erschienen ist der herrlich Tag*
Recitative: *Doch scheinet fast*
Aria e Coro: *Friede sei mit euch*
Chorale: *Du Friedefürst, Herr Jesu Christ*

Figure 3 Structure of BWV 67

For most of this cantata, the instrumentation is similar to the ones previously discussed, with most instruments available as modern equivalents. The *corno di tirarsi*, as previously cited in Chapter 5, could also be the same as the tromba di tirarsi and thus could be played by either the alto/soprano trombone, the trumpet, or the soprano or piccolo trumpet. In this case, a soprano trombone could cover the range, as well as a trumpet or piccolo/soprano trumpet. If we consider Terry's hypothesis that the instrument is a *Zugtrumpete* with a horn mouthpiece,[11] a soprano trombone should be used, as it might be able to create a rounder, more horn-like sound, compared to trumpets. The oboe d'amores should be played on modern oboe d'amores or the English horn.

[10] Dürr, *The Cantatas of J. S. Bach*, 292–294.
[11] See pg. 85 for a discussion on the possible instrument.

In terms of the size of the ensemble, even though this is a cantata composed for a major feast day, the internal evidence demonstrates that this cantata was possibly not performed by a huge ensemble. First, the flute was used, but when examining its part, there was not a single note of the instrument that was not doubling another part. The flute began with the doubling of the violin and later switched to doubling the first oboe d'amore. Then it moved on to the tenor and violas and finally returned to doubling the first violins. It could certainly be argued that the flute added color to the ensemble and that the cycling through of different parts could be part of Bach's careful design in this cantata full of metaphoric structures and cyclic usage of materials. However, this could also point to another older technique that Bach had been using, one that expanded the number of parts and reduced the number of doubling musicians to create a larger sound while being economical on human resources. The number of parts, including the three (including duplicate) continuo parts, point to at least ten instrumentalists playing at the same time. Unlike the previous cantata, the BWV 77, which only called for seven musicians, left enough room for the doubling of strings. Given the number of parts, it could reasonably be considered that Bach did not have enough musicians for a larger orchestra and thus decided to use more parts instead. Another possible reason supporting the smaller orchestra on a major feast day is the fact that it is a major feast day. The Sunday after Easter is one of the major festivals observed in Lutheran Germany, and it is possible that Bach did not have his usual number of musicians available for him since available musicians were possibly shared between the major musical activities at all four churches during festivals.[12] Some musical attributes from the parts also lend credit to this hypothesis. The virtuosic first violin writing in No. 6 might suggest that it should be performed by one single violin (see **Figure 4**).[13]

[12] Kuhnau complained about the lack of musicians, specifically during feast days. See Schulze, "Johann Sebastian Bach's Orchestra: Some Unanswered Questions," 11.

[13] There are surviving extra parts which point to the possibility of Bach performing this on an orchestra larger than one-to-a-part when he reused this work for a later occasion. However, the features as pointed out in this study that are more suited for one-to-a-part are still present and the argument for one-to-a-part still stand.

Figure 4 The virtuosic first violin part of BWV 67

The constant shift of orchestration focus between the three wind instruments and three string parts could also suggest that they were considered with equal weight with different

meanings, thus the contrasting materials and time signature. The middle and final chorales were also incredibly top heavy, with three wind and brass instruments doubling the first violin. Being top heavy is not unusual in Bach's chorales, but when viewed in context, this could possibly further support the hypothesis that the first violin was comparably weak in its volume. In No. 6, the bass solo was paired with a choir of the top three voices, suggesting that it was performed with a vocal quartet. Otherwise, the choral bass would have continued to sing when the solo bass was resting. Due to the above reasons, it could be suggested that this cantata should be performed on a one-to-a-part basis, both for the instrumentalists and the choir.

As for the continuo group, at least three instruments were playing, as evident from the three parts. Two of them have figures and one of the two were transposed. The transposed part is undoubtedly prepared for the *Chorton* organ. The figured but non-transposed part could have been for the harpsichord. The third, unfigured part would undoubtedly be played by a string instrument or two; a logical guess would lead to the double bass violone and the cello. It is worth noting that the three parts do not include any *tacets*, including the secco recitatives. All of the continuo group instruments were presumed to be playing during the movements, unless an unknown convention called for certain doubling instruments to stop.

Cantata BWV 80

The famous Reformation cantata BWV 80 can also trace its history back to the Weimar period, similar to BWV 21. An early Lenten cantata, now numbered BWV 80a, was first finished in 1715, but it never received a performance because of Weimar's ban on cantatas during Lent.[14] It was not difficult for Bach to reuse this piece for the festival of Reformation, as two movements were already using Martin Luther's text, and others only required minor adjustments.[15] The opening chorus of the revised BWV 80 is a new addition, and its technique also helped to date the

[14] Dürr, *The Cantatas of J. S. Bach*, 709–710.
[15] Ibid.

final version of the cantata to around 1735, when Bach was composing similarly textured and structured choruses.[16] The movement is considered a choral fantasia or chorale motet, with a vertical structure similar to BWV 77 by having the hymn tune on the top and bottom of the score to symbolize how "God's orbit of power embraces the entire cosmos," as sung by the choir.[17]

Reformation Sunday was an important day in Lutheran Germany, but it was not considered a feast day, according to the liturgical calendar. Therefore, compared to the circumstances around BWV 67, special musical activities were not required at the smaller churches. It could be possible that Thomaskirche and Nikolaikirche were able to retain more of their regular musicians and assemble a comparably large ensemble for this occasion.

One of the pieces of internal evidence to support a larger orchestra is the *divisi* continuo parts in the opening chorus. One of the two is for the cello, which is the same as the cembalo parts, and another is a violone part doubling an organ part. The two continuo parts serve very different functions, with the former carrying the normal duties of the continuo parts while the latter played the chorale cantus firmus. The cantus firmus parts included figures, so, unlike BWV 77, the second group also contributed to the sound and harmony of the whole ensemble. Except for the last three bars, the three oboes played in unison throughout the number, which could mean that Bach needed the volume of three oboes to counter his orchestra and choir. Considering that Bach often used one solo oboe with a full string section, this further supports the possibility of Bach using a large orchestra or at least of having the strings play at a loud volume.

The three oboists also all work double duties in this cantata. The first and second oboes later switch to d'amore, while the third oboe switches to the taille in No. 5. The first oboe in No. 7 switches to oboe da caccia and in the final chorale switches back to d'amore. As discussed in the missing instruments section, d'amores occupy the range of that of the alto oboe, while tailles are that of the tenors. In modern cases, the d'amore should be played by the modern oboe

[16] Ibid, 709.
[17] Ibid, 710.

d’amore, while the taille could be substituted with the English horn. Oboe da caccia, being another fifth-transposing instrument, should also be played on the English horn.

Apart from the strings that could logically be assumed to be an enlarged section, the continuo group also might have been bigger. Given that three double reeds are called for, it is possible that Bach would have had a bassoon playing with the continuo group. It is especially possible in this case, since the performance took place in the 1730s, and Bach had already started giving the bassoon more solo and even virtuosic passages to play. In the first movement, it would be logical for the bassoon to play with the second continuo group with the violone. The bassoon would provide 8-foot register notes to support the organ cantus firmus (with the violone playing in the 16-foot range) while responding to the other reeds playing the same theme as the cantus firmus a few measures apart and a few octaves higher.

If a larger, modern chamber orchestra is used in No. 1, the string count in No. 2 could be reduced so as to not drown out the oboe solo. Furthermore, the similar material that is shared between the continuo group and the unison strings also suggests that the volume of the two sections should be similar. If the bassoon is playing in the first movement, it would not be inappropriate to *tacet* this number.

After the secco recitative of No. 3 is a continuo-arioso for the soprano in No. 4. There is no indication of how many instruments should be playing in the continuo group, but, given the two-line texture of the number, it would perhaps be logical to thin out the continuo group and only have one 8-foot instrument accompanying it, whether it is the bassoon or the cello.

The chorale in No. 5 is almost reversed in its orchestration, and the oboes, now two d’amores and one taille, are scored to play three different parts, while the voices are now joined together in a unison hymn. With the double reeds largely doubling the strings with an interesting combination of two d’amores and one taille, it would be wise to limit the volume of the strings and let the colors of the double reed ensemble come out.

After a duet between the contralto and the tenor, which are accompanied by the oboe da caccia and solo violin duet, the cantata ends on the famous hymn in its original form, a four-part harmony chorale. The orchestra was well-balanced in its chorale voicing assignment, with violin I and oboe d'amore I on the soprano part, the violin II and oboe d'amore II on the contralto, and the oboe taille doubling the viola with the tenor. It is notable how different the distribution of instruments is in this when compared to the two top-heavy chorales of BWV 67.

Cantata BWV 30

Cantata BWV 30 is one of Bach's last cantatas. In 1737, the original form of this cantata, now numbered BWV 30a, was performed in a secular function.[18] Bach quickly reworked this piece, with the help of librettist Picander, who adapted the words and parodied the original text for the sacred occasion of the Feast of St. John the Baptist and performed this in 1738.[19]

The overall musical difference between the two versions is minimal, but, in terms of instrumentation, Bach did not copy the trumpets and drums in BWV 30a to the new version. Bach-Gesellschaft, the 19th century authoritative edition of Bach's music, included the additional instruments as *ad lib.* in their edition.[20] As such, Bärenreiter, true to the 20th century quest of originality and the respect of the composer's intentions, removed it in their edition.

The question remains of which version is correct. The practical choices for this cantata are simple, and there are no serious instrumentation issues apart from the first trumpet, which today might need to be played on modern soprano or piccolo trumpets. However, no other substitutions are needed. For the continuo group, a standard, high-Baroque dual accompaniment could be used. With the oboes present, a bassoon could be added to the continuo group. The only remaining issue is whether it is acceptable to perform this piece using trumpets with the text of

[18] Ibid, 691.
[19] Ibid.
[20] Johann Sebastian Bach, *Cantata BWV 30*, ed. Wilhelm Rust, Bach-Gesellschaft Ausgabe Band 5, (Leipzig: Breitkopf und Härtel, 1855).

BWV 30, the sacred version. This issue is not limited to this work. The question of whether it should be performed in a way that does not have sufficient evidence supporting that Bach had done it before—or even, in this case, in a way that Bach certainly did not do (i.e. perform BWV 30 with trumpets) remains: How should we, the modern performers looking to be historically informed, respond?

One of the most important concepts that this research project found was to ask the question of why Bach composed his work in the way that he did. In the case of BWV 30, it is not known whether Bach eliminated the instruments because he deemed them inappropriate in the cantata's new, sacred context or simply because Bach did not have the musicians available for the day of performance.

The former could easily be dismissed as a probable cause, since Bach scored a similar set of trumpets and timpani for Ascension Day of 1735 (i.e. BWV 11, with three trumpets, timpani, flutes, oboes, and strings), St. Michael's Day of 1726 (i.e. BWV 19, with three trumpets, timpani, oboes and d'amores, taille, and strings), BWV 21, as previously discussed, and many more. The three examples mentioned span from 1714 to 1735, meaning that Bach not only used similar orchestration but he started using this combination early and continued to do so. It is much more probable that Bach simply did not have enough musicians for the day of performance. Additionally, in his 1752 performance of this piece, Wilhelm F. Bach, J. S. Bach's son, added the timpani and trumpets back into the score. Had it not been appropriate, there is little reason to believe that Wilhelm F. Bach would have done this.[21]

Looking for internal evidence, none of the other parts were significantly altered, suggesting that, musically, Bach was not looking to convey a different *affekt*. Externally, the

[21] Bach-Digital.de has multiple copies of parts available showing the original trumpets and drums, the version without, and, according to the preface of Bach-Gesellschaft Ausgabe, the re-addition of the instruments by W. F. Bach.

trend of orchestral development, whether in Europe in general, in Germany, or in regions around Bach (see Table 3), had been working towards bigger orchestras.

Concluding from what is discussed above, it could be established that it is not how Bach performed it that is the important guiding question. What facilitates a historically informed performance is basing one's decisions on putting current studies in context and properly interpreting them. This is true for period instrument specialist ensembles, and it is even more so for modern orchestras and choirs. Therefore, this project suggests that there is no reason not to perform BWV 30 with trumpets and timpani, since everything else except Bach's own performance (that is limited by the musicians available) suggests so.

To revisit a quote from conductor and scholar John Butt, it is not the original performance and its details that should be the current focus. Instead, we should focus on the original *creation* of the works, along with its historical, cultural, musicological, theological, and sociological context. Doing so will help us become better informed to express the artistic culmination of composers of the past in historically informed yet forward-looking interpretations.

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