

The Sinusoid in J.S. Bach’s Handwriting and Printing of *The Musical Offering* (BWV 1079)¹

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Abstract: The article focuses on certain elements of J.S. Bach’s handwritten musical notation, and in particular on his sinusoidal form of beaming in groups of eighths. Bach’s later manuscripts typically display an increasing use of descending sinusoids implemented by flexion movement of the wrist, indicating disturbance to the blood supply to the brain. This identifiable trait of Bach’s handwriting negates the traditional view that the engraver of the bifolio with canons and the Fuga canonica from the *Musical Offering* was Johann Heinrich Schübler, and instead enables attribution of the preparation of its engraving copy (*Abklatschvorlage*) to J.S. Bach himself.

Keywords: J.S. Bach, J.F. Schübler, *The Musical Offering*, bifolio with canons and the Fuga canonica, handwriting, sinusoid, engraving copy.

J.S. Bach’s handwriting, health problems, and his later manuscripts

A study of J.S. Bach’s handwriting and its various elements is an important field in Bach studies. Invaluable contributions had been provided by Georg von Dadelsen², Alfred Dürr³, Robert Lewis Marshall⁴, and Yoshitake Kobayashi⁵. As Bach’s handwriting underwent change over time, the study of its characteristics has helped to solve a number of questions regarding both the authenticity and the dating of various compositions. Thus, for example, the accuracy or, rather, a fundamental change in the dating of Bach’s works relating to the last 10-15 years of his life, has resulted in a dramatic revision of his activity in the Leipzig period.

¹ Translated by Marina Ritzarev.

² See for example: Georg von Dadelsen, “Bemerkungen zur Handschrift Johann Sebastian Bachs, seiner Familie und seines Kreises,” in *Tübinger Bach-Studien*, ed. Walter Gerstenberg., vol. 1 (Hohner-Verlag Trossingen, 1957), 1–52; “Beiträge zur Chronologie der Werke Johann Sebastian Bachs,” in *Tübinger Bach-Studien*, ed. Walter Gerstenberg, vols 4/5 (Hohner-Verlag Trossingen, 1958), 1–133.

³ Alfred Dürr, “Johann Sebastian Bach, Seine Handschrift—Abbild seines Schaffens, eingeleitet und erläutert von Alfred Dürr. ” Revidierte Neuauflage des Bandes 44 aus der Gesamtausgabe der Bachgesellschaft (1984), XVIII; “Neues über die Möllersche Handschrift,” *Bach-Jahrbuch* 41 (1954): 75-79.

⁴ Robert Lewis Marshall, *The Compositional Process of J.S. Bach: A Study of the Autograph Scores of the Vocal Works*, vols I, II (Princeton: Princeton University Press, 1972).

⁵ Yoshitake Kobayashi, “Zur Chronologie der Spätwerke Johann Sebastian Bachs Kompositions- und Aufführungstätigkeit von 1736 bis 1750,” *Bach-Jahrbuch* 74 (1988): 7-72; “Bachs Notenpapier und Notenschrift,” *Thüringer Landesausstellung* 1 (2000): 413-27.

Changes in his handwriting have usually been associated with the worsening of Bach’s vision in his later years and/or even with diabetes. Thus, Peter Williams noted: “Extant MSS show that for some months from autumn 1748 on, his handwriting and presumably eyesight had deteriorated.”⁶ And further: “... various symptoms and characteristics in the late handwriting have more recently been interpreted as indicating advanced diabetes”⁷.

Such changes in Bach’s handwriting, however, have no relation either to diabetes or to the deterioration of his eyesight, because the principal characteristics of a person’s handwriting remain intact even if that person writes a word or a signature with his eyes closed. Rather, changes of this kind are associated with the problem of blood supply to the cerebral cortex. This condition is expressively reflected in handwriting, because it causes disturbances to the functioning of the motor system and a resulting weakening contact of quill with paper, as will be elaborated upon below. As a result, some elements of handwriting become performed differently to their performance by a healthy individual prior to this condition. I will discuss some of these identifying signs in Bach’s handwriting, especially that which I term conditionally the *descending sinusoid*.

Bach’s beaming

Bach’s beaming takes a variety of forms: straight, archlike, and wavelike. It also reveals different relations with a melodic line: sometimes the beam’s form reflects the melodic line of noteheads, and at other times it is independent, contrasting the melodic line and resisting any explanation. These two parameters of Bach’s musical handwriting (the form of the beam and its relation to the melodic line of noteheads) underwent noticeable change in his later years, both qualitatively and quantitatively. Since the creation and printing of the *Musical Offering* (1747) relates to the later period of Bach’s life, an analysis of these elements is helpful for establishing the identity of the engraver of the *Musical Offering*’s pieces: the bifolio with the canons and the Fuga canonica, hereafter bifolio **D** (according to Christoph Wolff’s designation)⁸.

Parameter 1: Wavelike beams. Bach’s wavelike beams often encompass groups of four eighths or four sixteenths resembling sinusoids.⁹ The sinusoid in group “a.” (Figure 1) is performed by the wrist, first with an extensor movement and then with a flexion one. This means that the directions of the beamline initially ascend, and then descend. I shall term these two kinds of beams according to their initial direction: the beam in example “a.” as an *ascending sinusoid* and in example “b.” as a *descending sinusoid*.

⁶ Peter Williams, *The Life of Bach* (Cambridge: Cambridge University Press, 2004), 190.

⁷ Ibid., 191, with reference to the article by Detlev Kranemann, “Johann Sebastian Bachs Krankheit und Todesursache—Versuch einer Deutung,” *Bach Jahrbuch* 76 (1990): 53–64.

⁸ Designating the units of the *Musical Offering* by the letters A, B, C, D, E was suggested by Christoph Wolff in his article “New Research on Bach’s Musical Offering” (*The Musical Quarterly* 3 (1971): 379–408) and since then has been used in studies on the *Musical Offering*.

⁹ See: Dadelsen, “Beiträge zur Chronologie,” 122, example III/T.

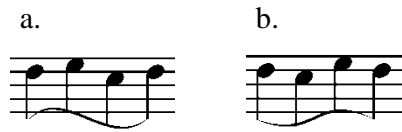


Figure 1. Schematic models of wavelike beams, beginning from ascending (a.) or descending (b.) sinusoids.

Parameter 2: The relationship between the direction of a beam sinusoid and the melodic line. While the line of a sinusoid usually *repeats* the line of noteheads, as in Figure 1 (“a.” and “b.”), in other, rarer cases (Figure 2, “c.” and “d.”) the line of the sinusoid *contrasts* the line of noteheads:



Figure 2. Schematic model of descending and ascending sinusoidal beaming contrasting the melodic line of noteheads.

To recall: a *descending sinusoid* is performed by flexion → extension movements, while an *ascending sinusoid*—by extension → flexion movements.

When a person who is writing has both kinds of movement balanced, the use of either sinusoid is equally comfortable for them. In music, this choice is usually defined by two factors: the composer either instinctively follows the contour of the noteheads or, independently of this contour, he chooses the sinusoid that has crystallized in his writing practice as an habitual movement (or *stable dynamic stereotype* in Pavlovian term).

Thus, for example, in one of his early manuscripts, *Hochzeits-Quodlibet* BWV 524 (1707), Bach used both approaches in his choice of sinusoids. He either followed the contour of the noteheads or used an independent direction, and—remarkably—preferably the one beginning with an *ascending* sinusoid. This indicates that at that time he still retained a perfect balance of flexion and extension functions and, moreover, by this time his writing practice had developed a stable dynamic stereotype of *ascending sinusoids*, which he clearly favored. Bach kept to this stereotype for a long time, until his failing health.

However, problems with the blood supply to the brain disturb the balance of movements, causing a weakening of the wrist’s extension movement. Consequently, the person experiences discomfort when writing elements beginning from an ascending sinusoid, such as various loopleftike figures, like the digit 8, digraphs like *ft*, and others. In such cases he instinctively either substitutes them with an alternative or performs them in two stages, like the digit 8— using two strokes instead of one, and both from top down. This can be seen in Bach’s writing of his last period. The difference is especially noticeable when comparing between two parts of the autograph P 200 (the so-called Berlin autograph) of *The Art of Fugue*: one written shortly before Bach’s failing health (“some months from

autumn 1748”¹⁰; and another, P 200/Beilage 1, written in 1749.¹¹ In the first (see Figure 3a), Bach’s choice of an ascending sinusoid is similar to that in the 1707 manuscript of *Hochzeits-Quodlibet*, while in the second (see Figure 3b.–f.) Bach predominantly uses a descending sinusoid, performed by a flexion movement, functionally stronger and easier than that using extension.¹²

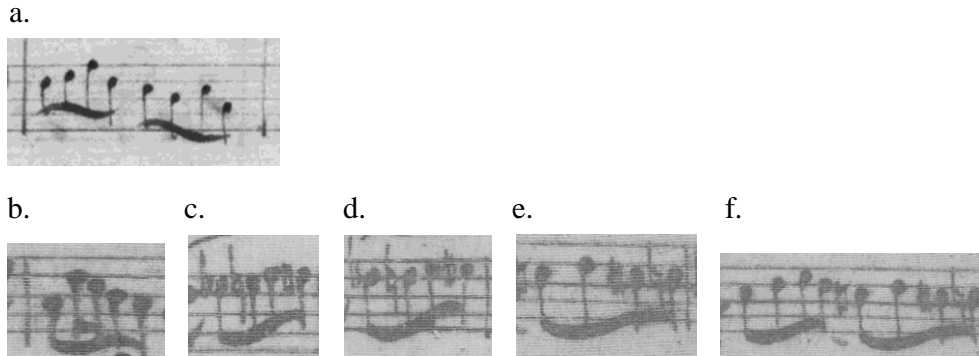


Figure 3. Comparison between an ascending sinusoid from P 200 (a.) and descending sinusoids from P 200/Beilage 1 (b. – f.)

In contrast to the example “a.”, where we see that an ascending sinusoid in beams is used with different melodic contours, in group “b. – f.” the descending sinusoid prevails and stably contrasts the ascending melodic contours at the beginning of each group of notes. An especially noticeable peculiarity of these beams is their disproportionality. Their second, ascending, parts are much shorter than their first, descending ones. This peculiarity reflects a functional imbalance between flexion and extension movements, to the advantage of the former. With such imbalance, the ascending part of the sinusoid requires a more uncomfortable movement than the descending one.

This imbalance between the flexion and extension movements in Bach’s handwriting can also be seen in the verbal texts of 1749, and is clearly demonstrated if we compare his signatures within a period of a year and a half, from mid-1748 to the end of 1749: Bach’s letter of recommendation to Johann Christoph Altnickol (July 31, 1748); letter of recommendation to Johann Nathanael Bammler (April 12, 1749); and another letter of recommendation to Bammler (December 11, 1749).

These three signatures are each separated by an interval of about eight months. The signature of July 1748 does not show any problems or deviations from his usual handwriting. In April 1749, the first signs of a problem with the cerebral cortex blood supply can be seen, manifested in a certain deterioration of contact between quill and paper, reflected in a slight strengthening of pressure during the writing. However, all the curves

¹⁰ Williams, *The Life of Bach*, 190.

¹¹ The dating is defined by Kobayashi, “Zur Chronologie,” 60.

¹² All the images are reproduced with the kind permission of the Staatsbibliothek zu Berlin, Preussischer Kulturbesitz, *Musikabteilung mit Mendelssohn-Archiv*.

and archlike elements are still clearly evident, although revealing more simplified movements. Thus, the exquisite calligraphy of the letter *S* is now replaced by a simplified one; although the loop-like digraph *ft* and the letter *B* are still written in *single* strokes. In contrast, only half a year later, when his ill health had reached its critical stage and Bach had only about eight months to live, his writing of curves lost its smoothness and became angulated; the complex loop-like movement required for writing the digraph *ft* is replaced by *st*, and the letter *B* is performed in *two* (possibly even *three*) strokes using flexion movements.¹³

The descending sinusoid and its relation to the melodic line

To recall: an ascending sinusoid begins from the ascending part of the arch, which is performed by an extension movement. When *in balance*, the person writing does not need to solve the problem of choosing sinusoids. He either performs them following the outline of the noteheads, or—if he has developed a dynamic stereotype of some kind—he subjects his writing to the dynamics of this stereotype, as in Figure 2.

A descending sinusoid begins from a descending arch and is performed by a descending movement. Consequently, a person with movement *imbalance* gives preference to the descending sinusoid. He tries to avoid ascending sinusoids and uses mostly descending ones, even if they contrast a line of noteheads, as in Figure 3b.–f.

An analysis of the available sources thus allows us to state with high probability the following:

- 1) The *descending* sinusoid that *follows* the line of noteheads can be found in Bach’s manuscripts throughout the entire period of his creative work, having neither advantages nor limitations in both the early and later periods of his life.
- 2) A *descending* sinusoid, *independent* of the line of noteheads, is characteristic of Bach’s handwriting at the end of the 1730s-40s.
- 3) An *ascending* sinusoid *following* the line of noteheads can be found throughout Bach’s entire creative life; but by the 1740s a tendency to reduce its frequency can be observed.
- 4) An *ascending* sinusoid *independent* of the line of noteheads is characteristic of the early and middle periods of Bach’s writing, but becomes increasingly rare in his writing in the 1740s.

Convergence beams on the right

One of the peculiarities of Bach’s handwriting in beaming groups of four sixteenths is that of convergence beams on the right:

¹³ For more details on the change in Bach’s handwriting and the images of these three signatures (July 31, 1748; April 12, 1749; and December 11, 1749) see: Anatoly Milka, “Zur Datierung der H-Moll-Messe und der Kunst der Fuge,” *Bach-Jahrbuch* 96 (2010): 53-68.



Figure 4. Autograph of the *Art of Fugue* P 200, p. 10, m. 15.

This peculiarity is manifested in a narrowing of the distance between beams towards the last note (sometimes two last notes), often becoming a single line at the end. This can be observed in both Bach’s early and late manuscripts, but is more noticeable in his late autographs, as for example in the Berlin autograph of *The Art of Fugue* P 200.

Figure 4 features convergence beams in an upper position. In this case, the drawing of the beams resembles an arch (curve) or the first half of an ascending sinusoid and is performed by an extension movement. In contrast, the writing of convergence beams in the lower position (see Figure 5) is performed by a flexion movement, as when writing the first part of a descending sinusoid (or similar to writing a descending sinusoid with a shortened second part, as in Figure 3b-f):



Figure 5. Autograph of *The Art of Fugue* P 200, Fugue V, mm. 33, 39, 41.

These examples, which can be multiplied by many others, lead to the conclusion that a descending sinusoid and its elements can serve as one of the identifying signs of J.S. Bach’s music notation handwriting, in particular that of the 1730s-40s.

The only preserved autograph of the *Musical Offering* (Ricercar a6) also features similar signs of descending sinusoids, often independent of (or contrasting) the lines of the noteheads:

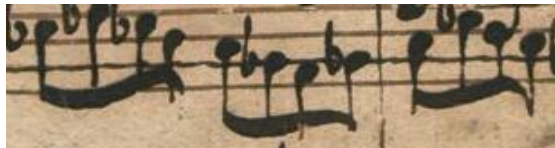


Figure 6: Autograph of the *Musical Offering*. Ricercar a6, mm. 68-69.

No such signs, however, no matter how specific and individual they might be, can constitute a sole and unquestioned identification of a person’s handwriting. Only a *cluster of identificatory signs* of a given writer, and the specificity and individuality of such a cluster, can offer reliable identification. Hence, in analyzing the piece in question, I will also consider some additional factors, focusing on certain elements of J.S. Bach’s and some

of his copyists/engravers’ handwriting as they appear both in autographs and in the printed versions after they had undergone the entire printing process. First, however, some explanation is necessary regarding the crucially important technique of music printing used by Bach in the *Musical Offering* (as well as in his other printed works).

Engraving and printing of the *Musical Offering*

The kind of music printing used by J.S. Bach was that of engraving on copper plates (*Cupferstich*).¹⁴ The process included a preliminary stage that demanded utter precision: the writing of a special copy for engraving—an *engraving copy* (*Abklatschvorlage*). An engraving copy was usually created either by the composer himself or by an assistant copyist (in Bach’s case it would have been someone from his family, or a student, or a copyist/engraver working at the printshop). Such a copy was needed in order to create a mirror image of the musical text. Following engraving, the copy had to be oiled and flipped over for the musical text to become visible. Hence, the paper used for the engraving copy had to be both loosely woven (for better saturation of the linseed oil) and thin (to make the text visible on the reverse). Next, an engraving copy, with the mirror image of the music text face up, was placed on specially made copy paper covering the copper plate. The engraver then followed the mirror image of the text using a dedicated needle, transferring it to the copper plate. This technique enabled the printout to fully preserve the handwriting of the person who had prepared the engraving copy (*Abklatschvorlage*). This fact is important for correct attribution of the writer of the engraving copy for the **D** section of the *Musical Offering*.

The master printers responsible for the engraving and printing of the *Musical Offering* have been identified as the brothers Schübler from the Thuringian town of Zella. Originally, Georg Kinsky considered Johann Georg Schübler to have been the only performer of this work.¹⁵ Later, Wolfgang Wiemer named two masters: Johann Georg and his younger brother Johann Heinrich;¹⁶ while Gregory Butler added a third participant, Johann Jacob Friedrich: “The eldest brother thus emerges as the master engraver of the clan. I would submit that Johann Jacob Friedrich was the third, most skilled of the three engravers involved in the engraving of the plates for printing unit **C** (instrumental parts of the Sonata—*A.M.*)”.¹⁷

¹⁴ See: William Gamble, *Music Engraving and Printing: Historical and Technical Treatise* (New York: Da Capo Press, 1971).

¹⁵ Georg Kinsky, *Die Originalausgabe der Werke Johann Sebastian Bachs, ein Beitrag zur Musikbibliographie* (Wien: H. Reichner, 1937), 114.

¹⁶ Wolfgang Wiemer, *Die wiederhergestellte Ordnung in Johann Sebastian Bachs Kunst der Fuge* (Wiesbaden: Breitkopf & Härtel, 1977), 37–49; “Johann Heinrich Schübler, der Stecher der Kunst der Fuge,” *Bach-Jahrbuch* 65 (1979): 75–9.

¹⁷ Gregory Butler, “The Printing History of J.S. Bach’s *Musical Offering*: New Interpretations,” *The Journal of Musicology* 19 no. 2 (2002): 310–11.

Wiemer and Butler view the participation of the Schübler brothers in the engraving process differently, as can be seen in Table 1:

	W. Wiemer	G. Butler
Johann Georg Schübler	Ricercar a3+Canon Ricercar a6 + Canon a2 + Canon a4 Sonata: Continuo (pp. 1–4) + Violino (pp. 2, 3)	Ricercar a3+Canon Ricercar a6 + Canon a2 + Canon a4 Sonata: Continuo (pp. 1–4) + Violino (pp. 2, 3)
Johann Heinrich Schübler	Canones diversi + Fuga canonica Sonata: Traversa (pp. 1–4) + Violino (pp. 1, 4)	Canones diversi + Fuga canonica Sonata: Traversa (p. 2)
Johann Jacob Friedrich Schübler		Sonata: Traversa (pp. 1, 3, 4) + Violino (pp. 1, 4)

Table 1: Comparison between W. Wiemer’s and G. Butler’s attribution of the engraving.

Notwithstanding the differences in their views, both W. Wiemer and G. Butler seem to assume by default, probably by analogy with *Clavierübung III*, that each of the three engraver Schübler brothers performed both the functions necessary for the process of engraving: *Abklatschvorlage* (engraving a copy based on the fair copy written by the composer), and the ensuing engraving on the copper plate (based on the *Abklatschvorlage*). This indeed often occurred, but not always.¹⁸ It is appropriate here to recall that the copyist of the engraving copy and the engraver on the copper plate could be different individuals, and the final result in print would reflect the handwriting of the first, the copyist, even if it had undergone some changes, almost inevitably made by the engraver on the plate. The final print thus mainly reproduces the handwriting of the individual who had written the paper engraving copy and not that of the one who had engraved the copper plate on its base (the “engraver”). Hence, there are two separate fields in the study of an engraved text: *graphology*, which researches the handwriting of the copyist of the engraving copy; and *traceology*, a forensic study of traces left on the original handwriting, because traces left in the process of writing on the one hand, and in the process of the engraving needle’s movement on the other, are principally different in character, as well as in the tempo of their movements. All this is important for establishing the hand of the person who wrote the engraving copy of bifolio **D** in the *Musical Offering*.

¹⁸ The printing of *The Art of Fugue* reveals different pattern. There, the engraving copies of pages 1-44 (Contrapunctus 1–13) and 48-56 (four canons) were made by J.S. Bach and his son Johann Christoph Friedrich Bach, while the engraving on the copper plate was made by Johann Heinrich Schübler (see: Wiemer, “Johann Heinrich Schübler, der Stecher,” 77). Hence, the pages of the original edition of *The Art of Fugue* reflect the handwriting of both Bachs, and not that of Johann Heinrich Schübler.

As we can see in Table 1, both Wiemer and Butler attribute the engraving (i.e. preparation of the engraving copy and the engraving itself) of bifolio **D** containing the *Canones diversi super Thema Regium* (Different canons on the King’s theme) and the *Fuga canonica in Epidiapente* (Canonical fugue in upper fifth) to Johann Heinrich Schübler.

However, an analysis of the engraved musical text reveals certain traits of J.S. Bach’s handwriting, and my intention here is to highlight these traits, none of which can be found in any other pieces of the printed *Musical Offering*.



Figure 7: Inner spread of bifolio **D** with canons and the Fuga canonica

I turn to focus now on those elements of the musical text in bifolio **D** that strongly indicate them to be in J.S. Bach’s handwriting.

Thus, an *ascending sinusoid* can be found only as following the line of the noteheads (or close to it, at least in its first part) in both the lower and upper positions:

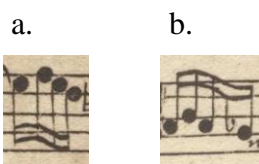


Figure 8. Bifolio **D**, Canon 3, measure 2 (a.) and Canon 4, measure 8 (b.).

In contrast to this, the *descending sinusoid* is present in two forms: as following the line of noteheads and as contrasting it:



Figure 9. Bifolio **D**, Canon 5, measure 5 (a.) and Canon 5, measure 3 (b.).

Convergence beams from the right can be seen in both the lower and in the upper positions:

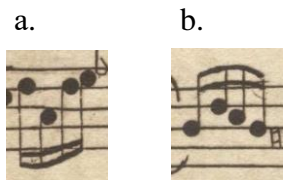


Figure 10. Bifolio **D**, Canon 5, measure 2 (a.) and Canon 5, measure 8 (b.).

The matter is, however, more complex than a simple counting of similar signs to Bach’s advantage, because there is also the phenomenon of copyists being influenced by the original. The question thus arises as to whether these Bachian traits resulted from Johann Heinrich’s instinctive emulation of the writing of Bach’s fair copy, from which an engraver had made an engraving copy,¹⁹ or whether they indicate Bach’s own hand as having created the engraving copy himself.

The influences of an original text on the copyists

As practice has shown, when less-experienced copyists prepare an engraving copy from the fair copy of the composer, they are from the very beginning in a state of psychological subjection to the original text. Hence, while copying elements of the musical text from the fair copy, their focus is not usually on their own choice of forms but, rather, generally on the original form. In other words, the copyist often subconsciously imitates certain traits of the fair copy’s writer. This is particularly relevant in regard to inexperienced engravers like Johann Heinrich. The situation is different with highly skilled engravers, possessing vast work experience and their own devices of inscription of the different musical signs. In this

¹⁹ The phenomenon of emulating the handwriting of the original in the process of copying is well known. See Daniel Starch, “Unconscious imitation in handwriting.” *Psychological Review*, Vol. 18 (4), July 1911, pp. 223-228. <http://psycnet.apa.org/doiLanding?doi=10.1037%2Fh0073654> (accessed March 5, 2019). Bach scholars understood this, while identifying a very subtle difference between J.S. Bach’s and Anna Magdalena’s handwriting. See for example: “Yo Tomita, Anna Magdalena as Bach’s Copyist,” *Understanding Bach*, 2 (Bach Network UK, 2007): 59-76. <https://www.bachnetwork.org/ub2/tomita.pdf> (accessed March 5, 2019).

case, they subject themselves not so much to the peculiarities of the original, but chiefly to the automatic movements of their own well-practiced dynamic stereotype. The pages of the *Musical Offering* engraved by Johann Georg and Johann Jacob Friedrich Schüblers (see Table 2) feature the individual styles of each of them and do not contain any signs of Bach’s music notation writing.

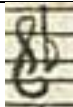
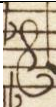

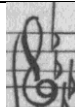







	J.S. Bach	Copyist of the Bifolio D	Johann Heinrich	Johann Georg	Johann Jacob Friedrich
G-clef	 Original edition of <i>The Art of Fugue</i> (Fugue for two claviers, Rectus, p. 58, line 9).		 Traversa part, p. 2, line 5 Sonata	 Ricercar a3, p. 4, line 7	 Violino part, p. 4, line 10 Sonata
Trill	 <i>Vom Himmel hoch da komm ich her. Per Canones</i> (Autograph P 271, p. 105, m. 15)  <i>The Art of Fugue</i> (Autograph P 200, Contrapunctus VII, m. 4)		 Traversa part, p. 2, line 9 Sonata	 Violino part, p. 2, line 3 Sonata	 Violino part, p. 1, line 2 Sonata
Convergence beams on the right	V	V	-----	-----	-----
Descending sinusoid following the line of noteheads	V	V	V Traversa part, p. 2, line 10 Sonata	-----	V Violino part, p. 4, line 7 Sonata
Descending sinusoid contrasting the line of noteheads	V	V	-----	-----	-----

Table 2. A comparison of five music notation handwriting elements from the five sources: Bach’s known autographs of his later period; copyist of bifolio **D**; the brothers Johann Heinrich, Johann Georg, and Johann Jacob Friedrich Schübler—all from the *Musical Offering*.

Johann Heinrich, in contrast, seems to have emulated Bach’s manuscript instinctively. For example, he imitates the manner of writing the G-clef, but starts from the

lower loop,²⁰ while Bach’s figure of the G-clef normally begins from the hook.²¹ There is a similar situation with the trill sign (tr). The young Schübler imitates Bach’s form of the trill, but their dynamic stereotypes differ (see Table 2).

Table 2 compares five elements of handwriting (G-clef, trill, convergence beams on the right, and two kinds of descending sinusoid: following and contrasting the line of noteheads), from five sources: J.S. Bach’s autographs, bifolio **D** (whose engraver’s identity is under question), Johann Heirich’s engraving of the Traversa part from the Sonata, Johann Georg’s engraving of Ricercar a3 and the Violino part of the Sonata (pages 2 and 3), and Johann Jacob Friedrich’s engraving of the Violino part of the Sonata (pages 1 and 4).

Table 2 demonstrates both Bach’s influence on the young Johann Heinrich, whose engraving copy of the Traversa part of the Sonata emulates such of Bach’s signs as the G-clef and trill, and such exclusively Bach traits as convergence beams on the right and a descending sinusoid contrasting the line of noteheads in bifolio **D**.

As the above examples demonstrate, the musical text of bifolio **D** contains signs of Johann Sebastian Bach’s handwriting during his later life. This indicated that it was he himself who prepared the engraving copy of these two pages. In other words, both the choice of pieces for this bifolio and their layout belong to Bach. This is especially important because, contrary to the traditional blaming of the engraver who allegedly violated what was considered to be Bach’s original order of the canons within the cycle of the *Musical Offering*, it was Bach himself who prepared the engraving copy of these pages, even if the logic behind this particular order is not initially understandable.

About the Author

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²⁰ This manner of writing the clef seems to be a family tradition, because it can be found in the engraving work of all three Schübler brothers. Being already an experienced engraver by the time of working on printing *The Art of Fugue*, Heinrich was less subject to the influence of the original in writing the G-clef, and, following the family tradition, began drawing it from the loop, thus correcting J.S. Bach’s and Johann Christoph Friedrich Bach’s calligraphy. Sometimes, however, he mechanically followed the drawing of the *Abklatschvorlage*.

²¹ Drawing the G-clef from the hook is typical of Bach’s autographs of the later period. For example, Ricercar a6 from the *Musical Offering* and Contrapunctus XIV from *The Art of Fugue* (P 200).