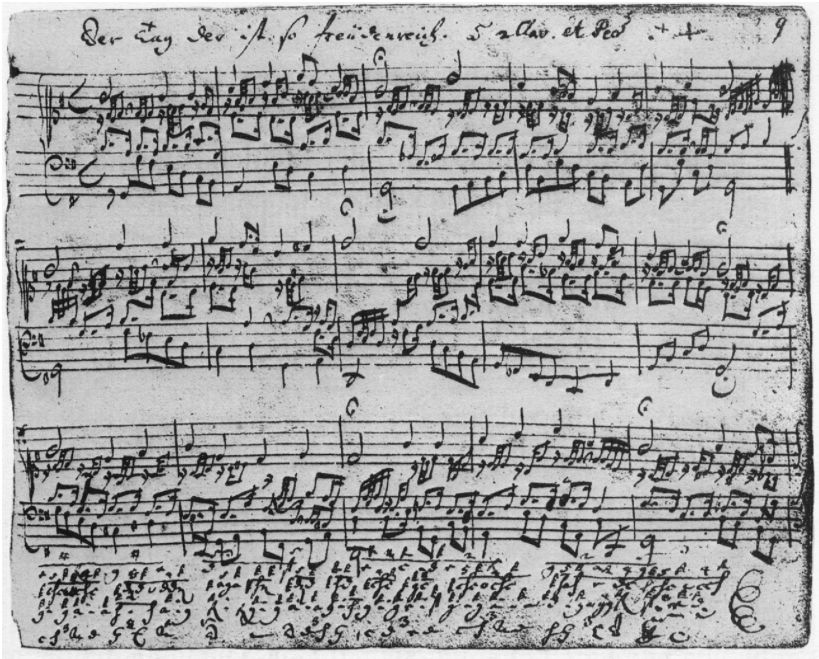
# Modern Numbers in Ancient Music

## Andreas Werckmeister as a Source

Pieter Bakker




Chorale prelude *Der Tag der ist so freudenreich* from the *Orgelbüchlein* of Johann Sebastian Bach. Wilhelm Werker saw in the organ tablature 'eigentümlich-geheimnisvollen algebraischen Formeln' which should have to do something with the musical shape.

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## Andreas Werckmeister as a Source

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Moderne getallen in oude muziek

*Translation:*
Pleuke Boyce

**During the course of the last century, more and more researchers assumed that numbers played an important role in the shaping of Johann Sebastian Bach's work. On top of that, those numbers were thought to have a symbolic meaning. But during Bach's lifetime and the first hundred-and-seventy years after his death, nothing was ever written about the subject. There are no historical or biographical sources that support the modern analyses. But it can't be a coincidence, say the musicologists who are engaged in the subject, although their many studies all lack a firm statistical basis.**

In his 1802 biography of Johann Sebastian Bach Johann Nikolaus Forkel admires the independent spirit of the great composer. Bach didn't let himself be guided by contemporary taste or the fad of the day. But that's exactly what the critical Johann Adolf Scheibe, more than half a century earlier, hadn't liked about Bach's music. To this Lorenz Christoph Mizler had then reacted by saying that although Bach could sometimes be twenty years behind the times, he was nevertheless capable of writing according to current taste, as was evidenced by his Easter Oratorio that was performed in Leipzig in 1735.

## Historical knowledge

In order to enjoy a musical performance it isn't necessary that the listener is acquainted with music history or the technique of composing. Yet it could be argued that such knowledge would deepen the connection with the work of art. Thinking about how a composer or a certain composition relates to the spirit of the times develops one's sense for what is strong and good. The passive participant in the music can use his own experience to arrive at the same realization as Forkel's, that in Bach's music everything is complete and perfect and never arbitrary. Perhaps those are the necessary attributes that distinguish every important work of art.
Historical and analytical musicology wants to aid in the thinking about music. It isn't just directed at the listener but also, and especially, at the performers. The public is always able to listen without any particular know-how, but historical and analytical knowledge obviously has to be a part of the professional's stock-in-trade. The big problem, however, is that historical musicology is in itself a historical phenomenon that in some way

or other is always related to the spirit of the times. There was receptive ground when Hans Brandt Buys remarked in 1950 that the awareness of symbols has to be the basis of every Bach interpretation. The consequences of this author's attitude are far-reaching, as he brings to the numbers he sees in Bach's work, and therefore the construction of the whole piece, a symbolic interpretation. If a mistake is made in something like this, the whole thing comes tumbling down.

## Symbolic numbers

Brandts Buys is part of a tradition of musicologists that attribute a special meaning to the numbers in Bach and other composers of early music. In the course of the twentieth century it had become fashionable to speak of the symbolic interpretation of the numbers in Bach's work. But oddly enough, by 1920, a hundred-and-seventy years after Bach's death, nothing had yet been written about the subject. The cantor Wilhelm Werker was the one who at the beginning of the nineteen-twenties still encountered a lot of opposition to his analysis of *Das wohltemperiertes Klavier*, based on numbers. A few years later, Friedrich Smend and Martin Jansen came with a symbolic interpretation of these numbers. Smend, furthermore, introduced a number alphabet for his analysis. On the basis of this he arrived at well-known numbers in Bach, like 14 and 29. By the time the next generation of musicologists came around, the symbolic interpretation of structural numbers had become widely accepted, even by non-specialists like Rolf Dammann and Walter Blankenberg.

## Reversal of the burden of proof

Researchers in the Netherlands played an important role in the investigation of numbers in Bach's work. The pianist Henk Dieben was an important source of inspiration for Smend. After the Second World War, publications by Piet Kee, Kees van Houten, Marinus Kasbergen, Albert Clement, Thijs Kramer and Arie Eikelboom came out. Internationally, it is at present especially the musicologist Ruth Tatlow who is showing remarkable results. The findings of the last nearly one hundred years of research differ greatly individually, but always have two things in common. In the first place the reversal of the burden of proof, as the results are never

accompanied by a usable interpretation based on statistics. The researchers don't get any further then the regularly repeated exclamation: 'This can't be a coincidence!' Secondly, there is never any mention of musicological or biographical sources, from Bach's time or earlier, that support these results. Especially the lack of the last is a shortcoming. Some works of music theory are cited, but none of these have anything to do with numbers and shape.

**Andreas Werckmeister**

In connection with this numerological Bach-research, there has been, since the 1950s, a growing interest in the writings of the seventeenth-century musical theorist Andreas Werckmeister and his interpretation of numbers. The crux of his theory is that all numbers can be reduced to the one or the Unity. The triunisonus 1 : 2 : 3, in musical notes C-c-g, is perfectly consonant and depicts the Trinity. The major triad with the ratio 4 : 5 : 6, and built on the third octave, c-e-g in musical notes, shows the mirror image of the Trinity, since this trisonus is heard as the unitrisonus. But with Werckmeister the number-ratio only applied to musical intervals. Halfway the 1950s, the musicologist Rolf Dammann began greatly expanding the meaning of the word *Musikbau* that he found in Werckmeister. The word suddenly didn't just apply to intervals, but also to the form and the number of measures, things it had nothing to do with in the original context. Still Dammann's interpretation would attract a following. A similar blurring of the lines between interval proportions and structure we find at the end of the 1950s in Marcus van Crevel's analysis of Jacob Obrecht's mass *Sub tuum presidium*.

**Modernity**

The trend in musicological research for a symbolic interpretation of the ratio's in Bach's music has, in fact, more to do with modernity than with the subject at hand. It can't really be a coincidence that Arnold Schönberg was immediately interested in Werker's analysis when it was published. To his colleague Matthias Hauer, who was heavily into metaphysics, Schönberg wrote that Werker, Hauer and he himself were really engaged in the same thing. In the Netherlands we find the same tendency in Jacob

van Domselaer. Esoterica and a search for objectivity dominated a big part of the art world at the beginning of the twentieth century. Well-known in this connection are the paintings of Piet Mondriaan, but in architecture, for example, we find the same attraction to esoterica in Karel de Bazel and Mathieu Lauweriks. It doesn't seem too far-fetched to see the numerological research into the work of Bach, who was already regarded as a saint in the nineteenth century, in this context. In Smend's converted and somehow more middle-class version of Werker's pioneering work, one can see a foreshadowing of the musicological-numerological research of the 1970s.

The question is, how will it continue, since there is little room for objectivity in the current attitude to life. The esoteric fashion of this moment differs on that point from the theosophy of a hundred years ago. In any case, the reader of modern numerological studies should realize that he is learning more about the development in the mentality of the last century and the spiritual climate within the world of early music practice than about the work of Bach and his contemporaries.

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