

# Fugue No. 21

B-Flat Major

*Well-Tempered Clavier Book I*

Johann Sebastian Bach

© 2003 Timothy A. Smith (the author)<sup>1</sup>

To read this essay in its hypermedia format, go to the Shockwave movie at <http://www2.nau.edu/tas3/wtc/i21.html>.



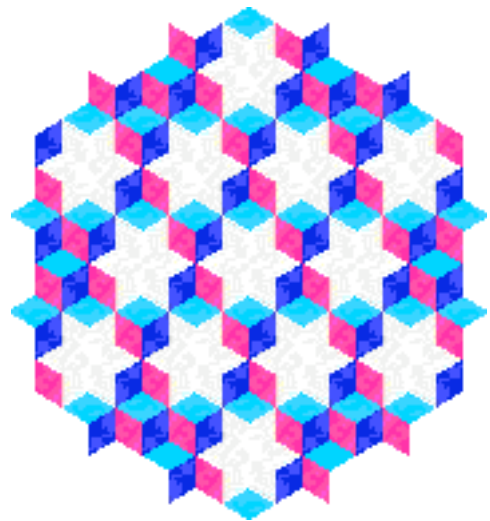
**Subject:** Fugue No. 21, *Well-Tempered Clavier*, Book I

This fugue is like *Tumbling Blocks*, a traditional quilting pattern among the Amish people of Pennsylvania, Ohio, and Indiana. In this analysis I'll show how the quilt and fugue employ creative:

- patterns
- metapatterns
- pattern disruptions
- hints of a higher pattern

## Patterns

A Tumbling Block is sewn of three diamond-shaped pieces of fabric: dark, medium and light. You may find it interesting, and helpful to the understanding of this fugue, to watch one being made. The three swatches in a Tumbling Block are like the melodies in this fugue: subject (pink), 1st countersubject (blue), and 2nd countersubject (aqua). These ideas are presented consecutively in the highest voice of mm. 1-12 and simultaneously in mm. 9-12.



---

<sup>1</sup> You may print, copy, link to, or cite this document, for non-profit educational purposes, so long as credit is given to the author as per fair use. You may not reproduce this document electronically, enfold it into a web site, or incorporate it into a saleable product without written permission from the author.

The fact that Bach could stitch these subjects together in simultaneous counterpoint is evidence of outstanding craftsmanship applied to an excellent design. You might think of *counterpoint* as the needle and thread that joins Bach's melodies in the same way that a quilter joins the diamonds of a Tumbling Block.

The Amish women make their blocks "tumble" by rotating them 180 degrees. This creates a three-dimensional illusion whereby the perspective is made to flip. The tumbling intensifies toward the edges of the quilt. Clustered blocks sharing a whole line (not just a point) are in the same rotation. Blocks sharing a common plane, like those sharing a corner, are rotated by 180 degrees. Because the plane is not simultaneously perceivable from two perspectives, its blocks fight for dominance. Study the cluster of five blocks toward the right edge of the quilt. Are you sure that there are five? Count them again! Maybe there are six. The visual dissonance of competing perspectives makes these blocks tumble in a special way.

Bach has also made his subjects tumble. As in the quilt, the method involves rotation. We call this *triple counterpoint*. Each time the subject complex occurs its melodies are in a different orientation. Sometimes the subject is below its countersubjects, at other times it is above. Sometimes the 1st countersubject is above the 2nd, at other times it is below. So triple counterpoint allows us to hear Bach's subjects from many perspectives.

### **Metapatterns**

If one block represents one pattern, then the scheme that makes a group of blocks tumble is a *metapattern*. It is important to recognize that the rotations are predictable. Persons who know the design can anticipate, and playfully resolve, its dissonance by making the perspective flip. The visual display becomes a source of pleasure as one scans the quilt to confirm each expectation it creates. What appeared at first to be chaotic is safely comfortable to those who know the rules.

Bach's fugue also follows a metapattern involving rotation. I have animated the moments when his subjects rotate: m. 9, m. 13, m. 22, and m. 26. The pattern is this; the lowest melody leapfrogs to the top and bumps the others down.

When a fugue presents material in a predictable order like this, it is known as a *permutation fugue*. The more voices that a fugue has, the greater its possible permutations. A three-voiced fugue would have six permutations: three rotations of its prime form and three of its inversion (mirror of the prime). This fugue uses four of its six possibilities.

It fascinates me that this quilt is called "Tumbling Blocks" and not "Static Stars." Had you noticed that the negative space between the blocks reveals another pattern? Stars! What intrigues me is how the stars are made of what the blocks exclude. This is another example of metapattern.

Bach's fugue also contains passages excluded from his Tumbling Subjects. These are the sequential episodes in mm. 17-21 and mm. 30-36. I'll not comment on these overmuch other than to say that they are like the trimmings

that the Amish women drop to the floor as they cut their Tumbling Blocks. Bach's sequential episodes are made of the same fabric as his subjects. Those measures that are marked "inv" are the melodic inversions of the subject's m. 1.

### Pattern Disruptions

The best in this fugue is found in the disruption of its pattern. I'll introduce this idea by way of a short poem about Amish women chatting with each other as they stitch. The poem is called *By Design*.

In concert Amish women quilt  
a pattern, perfectly aware  
that mid the Tumbling Blocks they'll sew  
a humble square.

Because the Lord alone is perfect  
they will purposefully pleat  
a modest flaw and, by design,  
deny conceit.

© 2002 Tim Smith

The poem is about "mistakes" that folk artists sometimes choose to make. These "errors" can be seen in native arts and crafts throughout the world. For example, the Navajo people of the Southwestern United States teach their children, if you make a mistake early don't worry about it. But if you complete a rug and have made no mistake, make a small one that nobody will notice.

Explanations for these anomalies vary. Some say that they release the artwork from its prison of form. At the least, they represent a wise tolerance for small errors, without which very little art would have survived. Not surprisingly, collectors regard its mistake as contributing to the charm of a work.

As the poem represents, pattern deviations may have a spiritual significance as well. The Amish "humble square" reminds us that God alone is perfect and that we are flawed. By tolerating a mistake in the quilt, the Amish represent the grace of God toward one's own mistakes.

As if to mirror this idea, the poem also has a modest flaw. The second line of the second stanza is short by one foot. By now you have surely surmised that the quilt also has a mistake. One of its blocks has tumbled in the wrong way. If you haven't found it but want to try on your own, stop reading now!

Here's how to find the humble square. Observe that the quilt contains another pattern involving lines. The aqua diamonds form parallel horizontals. The pink diamonds form lines at a sixty-degree angle, top-left to bottom-right. What do the blue diamonds do?

If you've located the contrary diamond, then you've found the humble square. This block is different because it is not a rotation but a mirror image. Starting on the pink, a clockwise reading of the humble square yields pink-blue-aqua. The other squares are pink-aqua-blue. This is because the humble square has been sewn into the quilt upside down. It is not a rotation but an *inversion* (mirror image).

Bach's fugue contains two types of inversions. First is the melodic inversion of m. 1 that we have discussed. The second is similar to the upside-down humble square. It is an inversion of *polyphonic texture* in mm. 37-40. This textural block does not tumble like the others. They were rotations, but this one has been stitched to the fugue in its mirror image. Starting with the pink and reading down, its order is pink-blue-aqua. The others are pink-aqua-blue (start with the pink, read down, and wrap to the top).

You may object that mm. 41-44 also tumble in the mirrored way that mm. 37-40 had. In this you would be correct. But don't forget that this is an inversion--a complicated way of saying that two negatives make a positive. In other words, mm. 41-44 return to the right-side-up position. Its texture is the same, albeit in a different mode, as mm. 22-25.

### Hints of a Higher Pattern

Perhaps this is as far as you want to go with this fugue. If so, that is OK. But some people might wish to follow this analogy to its end--an intersection of pattern upon pattern wherein we discover deeper layers of meaning. So to those who are inclined to think this way, the structure of this fugue can be interlaced with one more pattern. I shall introduce it by asking three questions.

Did Bach make a mistake in mm. 37-40? If so, was it intentional and somehow connected with being humble? The answer to the first (obviously rhetorical) question is, *No!* We can be confident that his disruption of the pattern was, as in the Amish quilt, a perfect pleat. Bach's intention was to create a variation that would not have happened under the established pattern. One might even conclude that the pattern was created in order that it might be broken. To be sure, the brokenness of mm. 37-40 would not have been marked for consciousness without the pattern against which it was set.

As for being humble, we know that Bach regarded this as an important virtue. We know this because he underlined the following words from a passage written by Martin Luther: "Humility is the noblest and sweetest virtue love brings forth, and it is the most essential to peace and discipline." These words, from Bach's personal Bible, appear in Luther's exposition of I Peter 5:6.

Whereas in his youth Bach was an impetuous defender of himself, famously spending a month in jail for it, he became in his maturity a humble man. When attacked by the twenty-three year old Scheibe for writing in a too-patterned and old-fashioned style, Bach did not reply in words. Instead he refuted the accusation by demonstrating (*Goldberg Variations*) his mastery of the most contemporary styles. In due time this cycle, nearly forgotten upon his death, came to be recognized as the greatest in its genre.

But this begs the real question: did the disruption of this fugue's pattern have anything to do with being humble? In other sources Bach hinted of how we should answer that question. His pupils were fond of recalling that he often quoted Gerhardt Niedt, "The sole purpose of harmony is the Glory of God; all other use is but idle jingling of Satan."

If one can accept this statement as a genuine expression of Bach's belief,

then he must, like the Amish quilters, have had a higher plan in mind. The highest pattern, he affirms, is the glory of God. So the purpose of everything in this fugue--its structure, subjects, rotations, disruption of the pattern and return to it--glorifies God.

In a post-Christian world this seems incredible. But until recently every Bach scholar would have agreed, excellent craftsmanship was itself a way that Bach sought to honor God. In addition to craftsmanship, his music expresses a more sublime order having to do with one's view of the world and the reason we are in it. In this (some would say "old fashioned") view, Bach's music reflects an overarching commitment to the belief that God's perfect creation is marred by human error but redeemed by grace. So any pattern disruption followed by a return to it may be more like an Amish humble square than one might otherwise suppose.

This study has woven together themes from baroque music, graphic design, quilting, poetry, biography, folk art and theology. Through the fabric of the *Well-Tempered Clavier* exquisite craftsmanship threads itself most durably. Intertwined with it are the patterns of intellectual curiosity and devotion.

Although Bach was separated from the Amish by time and space, he was closely linked to them in faith. A shared pattern of devotion most unites them. As shown by this fugue, and quilt, it is a devotion to God and to art that glorifies God.