

Fugue No. 18

G-Sharp minor

Well-Tempered Clavier Book I

Johann Sebastian Bach

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Subject: Fugue No. 18, *Well-Tempered Clavier*, Book I

Is this an immature fugue of Bach's youth or one of his greatest? We shall answer that question by exorcizing its:

- diabolical tritone
- tamed by modulation
- tempered
- and developed
- by *tota musica*

I have concluded this analysis with an index of harmonic variations.

Diabolical Tritone

Dr. Ledbetter has observed that this fugue generates wildly different responses (p. 210). Spitta thought that it was a work of Bach's youth (*Jugendarbeit*), but Tovey called it "one of the profoundest" of fugues in the *WTC*. In this analysis I shall explain why Tovey was correct.

Upon first hearing, one might agree with Spitta; it does have a rather square little subject that enters with (what some might call) "monotonous" regularity. Perhaps it was the twenty-two repetitions of the subject's tail motive that Spitta thought to be immoderate. But if there were anything that Spitta should have criticized, it would have been the seemingly incorrect exposition of the tritone in

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the subject's head motive. Hmm?

To those who may be unfamiliar with the convention on tritone, it is rarely stated as a melody and then with great daring. It is so rare in fact that Bach has used it in only two of the 48. The reason for avoiding the tritone traces to choral music where it is difficult to sing. For this reason it was called *diabolus in musica*, "the devil in music."

The tritone is particularly problematic in its ascending form, especially if it involves an inflected pitch, and most especially if it involves the tonic (*do*). But that is exactly what Bach has done here! To put it bluntly, he has composed not just any tritone but a furiously diabolical one, complete with horns, pointed tail, goatee and pitchfork! In the other fugue with tritone (b-flat minor of Book II) Bach has tamed it by downward motion and diatonic scale steps.

Do you think that this tritone was a mistake? Neither do I. Obviously Bach was up to something. It is that something that makes this fugue great. It may not be (as in Tovey's assessment) "one of the greatest," but it is certainly one of Bach's most interesting.

Tamed by Modulation

The subject's tritone is on the scale steps *do-fi*. One way to tame the tritone is to use it on *fa-ti* where it "belongs" to the key and does not require inflection (the addition of an accidental). Another advantage to *fa-ti* is that it doesn't coerce the tonic into playing a part.

Bach was of course aware of everything that I have stated in the last paragraph. His subject was calculated to play upon the dissonance of *do-fi* and the comparative softness of *fa-ti*. He knew that *do-fi* would cause enough consternation that we would make it flip to *fa-ti*. For this flip to occur one must impose a new tonic--*modulation*.

You guessed it! Immediately after the devilish *do-fi*, Bach has modulated to the key where the same pitches function as the angelic *fa-ti*. So there's logic in madness! The subject's head posits a tonal problem (the diabolical *do-fi*) that resolves itself in the modulated tail by being heard retrospectively as *fa-ti*.

Now this is not the work of supple youth. It is rather brilliant. It reveals a mature concept of something that happens in music quite frequently. We hear something in one way going into it, but in quite another way going out. That "something" in this fugue is the tritone. It concludes the beginning of the subject while at the same time beginning its conclusion. It participates in both halves. The word we use to describe this is *elision*, where the end of the beginning is also the beginning of the end.

The maturity of Bach's subject is beautifully explained by his modulating episodes. The subject's tail motive is developed in the first two episodes (mm. 9-10 and mm. 13-14), while the head motive, especially the tritone, is developed in the second two (mm. 21-23 and mm. 28-29).

Tempered

If the tritone has been tamed by modulation, it has also been *tempered* by the manner in which the instrument has been tuned. I refer here to the *wohltemperirt*

system of Bach's near contemporary, Andreas Werckmeister. The purpose of *wohltemperirt* was to enable the composer to write in every key. By composing the *Well-Tempered Clavier*, a monumental work that cycles twice through each of the twenty-four keys, Bach has demonstrated his liking for this new system of tuning.

In *meantone* (the old system), an interval would have sounded correctly in one key but out of tune in another. The tritone was especially problematic. So Bach's exposé of the tritone in this fugue can be heard as anything but a blunder; he was experimenting--putting the new system to the test.

And Developed

Intonational tempering is good, but not enough. The tritone must also be contextualized; it demands a proper musical setting. And if the tritone is this fugue's theme (which it is), then it requires subsequent development. This development is sophisticated, and complex, but I will tell it as simply as I know how.

Let's begin with the subject's tail, remembered for its repetitious *me-fa-fa-sol-sol-do*. Once that motive gets in your head it's difficult to get it out! On first hearing, it is even more memorable than the tritone of the subject's head. Perhaps you had not heard this in *me-fa-fa-sol-sol-do*, but the melody actually reinforces the prior iteration of the tritone. I shall explain.

This reinforcement is the product of harmonies implied by *fa-fa-sol-sol*. Whereas *fa* suggests a chord of predominant function, *sol* suggests a dominant. If we define dominant function as chords containing *ti*, then *fa-fa-sol-sol* yields a phantom *fa-ti* tritone. Try this! Listen to the tritone then sing it slowly over *fa-fa-sol-sol* and you will hear what I mean.

So the subject's tail echoes its head in that both halves posit the tritone--the fugue's main theme. The subject exposes the tritone overtly in its head motive (melodically), and covertly in its tail (an implied harmony).

To this point I have referred to the subject's tail as having implied a harmony. But after the first statement of the subject Bach has realized the *fa-ti* tritone with great skill. If you are following the score, you will see a roman numeral analysis appear beneath every implied *fa-ti*.

It is not necessary to have taken a class in music theory to hear what I am about to explain. Most western music is centered on a single surpassing idea: that of *statement*, *digression*, and *return*. This idea is like: (1) the anticipation one feels when embarking on a journey, (2) the excitement of seeing new people, places, and things, and (3) the relief one feels upon returning home.

In music theory we learn that this principle can be expressed in many ways: most notably in melody, harmony, and rhythm. Harmonically the principle is represented in what I like to call "the T-P-D-T cycle" (or the "phrase model"). T stands for *tonic*--that's home. P stands for *predominant*--a chord that wants to go to a dominant. Of the many predominant chords, most contain one or both neighbors to *sol*: e.g. some combination of *fa* or *fi* with *le*, or *la*. By now you've figured out that D stands for the *dominant*--a chord that wants to go home. There are only two of these (V and the diminished vii) both of which contain the pitch *ti*.

To illustrate, return to that roman numeral analysis. In each case the mirage-like progression is four chords long and comprises a T-P-D-T cycle. It is important to understand that no two of these progressions are identical. Of the twenty-two statements of this idea, eighteen are uniquely varied by mode (minor to major), inversion, or chord substitutions harmonizing *fa* (the predominant). Even those literal repeats of a progression have undergone variation of their contrapuntal textures.

Note especially the variety that Bach has provided to chords of predominant function. He has used everything from the supertonic (ii), to the subdominant (IV), to the Neapolitan (N), to secondary function in a tonal cell (V/V/iv). See the harmonic index for more details.

By *Tota Musica*

The preceding paragraphs are my attempt to summarize tonal harmony. Bach once summarized the same thoughts not in words, but tones. His summary is contained in a fascinating canon that he wrote for Balthasar Schmid, the publisher of his *Goldberg Variations*. Bach's title for this work was *Canon super Fa Mi* (BWV 1078).

I shall introduce the *Canon super Fa Mi* by asking a question. Were I to have claimed that everything in music could be summarized in five words (*Fa Mi, et Mi Fa*), would you have believed me? Well that is exactly what Bach has claimed in this canon. At the top he wrote *Fa Mi, et Mi Fa est tota Musica*. Translation: "*Fa-Mi* and *Mi-Fa* are the sum total of music."

Here's how this amazing sentence can be understood. *Fa-Mi* are solmization syllables from the medieval system of hexachords, the acoustical basis for music theory in Bach's day. To make a long story short, they are the same pitches that I have referred to as *fa-ti*--the tritone! So you can see that the devil is in the details.

How do I know that Bach's Latin referenced the tritone? The strongest evidence is in the canon itself: a work for seven voices (the perfect number) ascending a 9th (3 x 3) by scale steps. These voices are supported by a ground bass, what Bach called *FABE Repetatur*. This represents an endless cycle (*Repetatur*) of the pitches F-A-Bb-E. In Bach's day these pitches would have been sung to the syllables *Fa-Mi-Fa-Mi*. They are the same as our *do-mi-fa-ti*. The harmonic implications of the ground are:

do-mi = Major 3rd of tonic function
mi-fa = minor 2nd to a predominant
fa-ti = tritone moving to a dominant
ti-do = return to tonic function

So we have come full circle. Bach's ground is the T-P-D-T cycle and it represents everything you need to know about music (*tota Musica*)! It is the same T-P-D-T cycle implied by the subject's tail.

If you ask me, I would have to agree with Tovey that this is one of the best fugues in the *Well-Tempered Clavier*. It is quite like the *Canon super Fa Mi* in its

didactic purpose. From the standpoint of its varied chord progressions and voice leading, it is a model for development--a veritable harmony textbook in tones!

Index of Harmonic Variations

Numbers represent the measure in which these structures are heard.

Predominants

ii: 9, 13, 27, 30, 34
iio: 6, 8, 10, 12, 14, 20, 31, 33
iiø7: 18
IV (Major mode): 35
IV (minor mode): 36
V/V (secondary): 39
Neapolitan: 25, 38

Dominants

V: practically every measure
v (secondary): 39
viio: 36

Inversions

1st: 4, 6, 8, 9, 10, 12, 14, 16, 20,
25, 30, 31, 33, 34, 36, 38
2nd: 33
7th root pos: 12, 13, 14, 16, 27, 30,
31, 33, 34, 35
7th 1st inv: 18, 27, 39
7th 3rd inv: 6, 18, 20, 36, 38

Sevenths

m7: 27
ø7: 18
Mm7: 6, 12, 13, 14, 16, 18, 20, 27,
30, 31, 33, 34, 36 (IV7 in minor),
38 & 39 (both secondary)
MM7: 38 (N7 with rare bass suspension):

Secondary Functions

vii/VI: 25 & 38 (both deceptive)
V/iv (surrogate tonic): 38
cell: i V/V v i (of iv) 39