

‘Saving Voices, Saving Grace’: The Urgent Necessity for C=256

A longtime associate of the Schiller Institute, the recently retired conductor Anthony Morss now serves as a board member of the New York City-based Foundation for the Revival of Classical Culture, which co-sponsored the June 26 Sylvia Lee musical tribute, which he addressed as follows. In 1990, Maestro Morss conducted a concert version of Beethoven’s opera “Fidelio” at Lincoln Center’s Alice Tully Hall at the C=256 tuning, the first time such a thing had been done in the United States.



Conductor Anthony Morss

the organ part was copied out in C minor, a whole tone lower. And at C minor is where Bach and his singers and his string players of the orchestra would have been pitched. Now, probably Bach would have preferred to tune at 430, because he did have a book by Kepler in his library, and he was familiar with Kepler’s ideas. So probably he wanted to do that.

He *couldn’t* do that. To tune down an organ in those days was almost as expensive as buying a new one. It doesn’t happen to be so today, but it was then. So Bach was stuck. When Handel came to London, London was tuned about a whole tone lower than the current pitch, and went up in 1744

Good Afternoon. A lot of us here are old friends; we’ve been working together for a number of years. But I’m to speak on the topic “Saving Voices, Saving Grace.” The tuning problem, which we have solved, in large part, is solved on the basis partly of scientific information, because middle C at 256 [Hertz—i.e. cycles per second] is a major scientific constant, and partly, and I think actually mostly, by demonstrating how much better things sound at the proper pitch. But I’m going to throw you a few crumbs of musicality just to show you how fascinating this subject is.

Bach’s Dilemma

In Europe, every city in the Seventeenth and Eighteenth Centuries tuned at a different pitch. And different churches within the same city tuned at a different pitch. Why was this? Partly because a lot of the sacred music depended on the organs, and organs tended to be pitched very high in Europe. People liked the brilliant attack, but nobody wanted to sing up there. So Bach, for example, in Leipzig, had an organ that was tuned a half tone above A=440. He didn’t want his chorus and soloists to be singing at that pitch at all. But what to do? He had to transpose it down. So he transposed the organ parts down two semi-tones, that is to say a whole tone down. That means that if the cantata were written in D minor,

to a half tone lower. In other words, at that point, Handel’s orchestra was tuned at the same pitch as Bach’s orchestra and organ in Leipzig were pitched. Gradually, the tuning became a little more homogeneous, and around the time of the Viennese classics—Haydn, Mozart, Beethoven, Schubert, Mendelssohn—it was generally accepted that you tuned at about 430. It wasn’t universal, but it was a standard and it is very obvious that the great composers of the Nineteenth Century and late Eighteenth Century tailored their musical writing to correspond to the register shifts created by tuning at the proper tuning, namely A=432 or 430.

[Note: The range of tuning for C=256 is A=427-432 cycles per second, a tonal “orbit” rather than a mathematical value as such.]

Variety of Pitches

But to give you an idea of the variety of pitches: Frederick the Great, who was a very good and enthusiastic flute player, and actually even composer of flute concerti, as was his sister, by the way... They were not very good pieces, but the fact that a king should be a competent composer is a bit of a surprise. And he was quite a good player, in spite of, perhaps, a reckless approach

once in a while. At the end of one allegro he asked his teacher, Josef Joaquim Quantz, if he liked his tempo, and Quantz replied, “I liked *all* of them, sire.” But he was an enthusiastic player and a skilled one. And Quantz not only was his *Kapellmeister* and his music teacher and his flute teacher, but Quantz was also a creator of a flute for Frederick the Great, that came with six different tuning rings. If you don’t use any of them you have a seventh possibility of tuning. Why? Because music came from all over, from so many pitches, and to do it justice you had to tune your instrument to that particular pitch, and Frederick’s flute had seven possibilities of tuning. That indicated an enormous variety of tuning pitches.

I’ll give you one more example from the old times. A friend of mine who was a tenor who sang *Rigoletto* with me many times,— he was a wonderful Duke, which means that he was not only a tenor, but a tenor with a voice with a rather high tessitura, because the Duke was one such. He was such a good performer that he was hired by the Paris opera,— they were doing a revival of an opera by Gluck that had been premiered in the Mid-eighteenth Century and I forget if it was *Iphigenia in Tauris*, *Iphigenia in Aulis*, one of those. And my friend, the tenor, said it was *impossible*. The part was written so outrageously high—it was a terrible thing to have to sing. He said he didn’t know how Gluck could have asked for anything so cruel. Well, *he* didn’t know, and *I* didn’t know at that point, that when Gluck’s opera premiered at the Paris opera in those days, the opera tuned a minor third lower than current pitch. That meant that an aria which on the page which was an F major, in fact sounded a D major. So you can imagine that it was impossible to sing. The principle is very plain. If you live in a city which tunes high, like Venice, which tuned at modern 440—surprisingly enough, the only one that I know of—then you write pitches that are very low, because you are aiming to get all the music in the usable middle range of the voice—that’s perfectly obvious—without extraordinary high notes and extraordinary low notes. And, consequently, if you are in a city which tunes very low, you write high notes, higher notes, in order to keep in that same usable middle register of the voice, which everybody wants to sing in. So it shows you can’t take literally, by modern pitch standards, any of those old scores.

Saving Modern Voices

I remember years ago I conducted a wonderful Polish violinist named Henry Szeryng; he was a Carl

Flesch pupil in Berlin. Mr. Szeryng had recorded one of the concerti we were doing—we were doing the Mozart Seventh and the Tchaikovsky. He had recorded the Tchaikovsky with [the conductor Charles] Munch and the Boston Symphony, so I bought the recording to find out what he was going to do. I was amazed I could follow every twist and turn. Anyway, Mr. Szeryng had just come from the Vienna Philharmonic, and Vienna had been made one of the leaders in high tuning in recent times by Herbert von Karajan, and here we come to the whole business of saving modern voices, because Karajan liked to tune high. Why? Because it made the orchestra brilliant, it gave it a cutting edge. But, unfortunately that’s called interference, for the singers. And I once conducted a “Cav/Pag” (*Cavalleria Rusticana/Pagliacci*) at official French pitch established in 1859-1860 (A=435), and the balance problem of the opening of *Pagliacci* with the high screaming violins and piccolos and flutes was all resolved perfectly, I didn’t have to say anything. Usually I have to balance that passage very well. But anyway, to return to Mr. Szeryng, he said that the high tuning of the Vienna Philharmonic bothered not only his ears, but it bothered his actual finger positions. They were significantly different, and he felt quite uncomfortable playing there.

Now, von Karajan had a habit of tuning both the Berlin Philharmonic, which he controlled, and the Vienna Philharmonic quite high. Well, then, if you’re dealing with heroic roles that have an upper limit to the pitches they can hit, you’re often tuned out of the use of really heroic voices. So what do you do? You hire lighter voices that may have an extra note in their compass. So they can hit the pitches now, with the orchestra tuned high. But look out! The orchestration hasn’t changed, and the orchestration was a heavier orchestration for heavy voices. If the heavy voices just can’t hit the pitches, you hire lighter voices. What’s wrong with that? Well, the color is all wrong for the role. Even though the conductor may say, don’t worry, “I’ll keep the orchestra down,” sooner or later those heavy accompaniments are going to do real damage to the voices.

And I will never forget an interview I heard with Elisabeth Schwarzkopf—spoke quite good English, by the way—and she said she was so lucky when she began to sing one of her signature roles, *Die Marschallin* in *Der Rosenkavalier*, and she said, “I was so lucky to have Herbert von Karajan in the pit, because Herbert can make the orchestra go away.” But what is that really telling you? That that role was not for her in the first

place. You wanted Lotte Lehmann for that role, not Elisabeth Schwarzkopf, who had a greatly artistic method of singing, but whose voice was rather white, and rather thin in contrast to the richness of a Lotte Lehmann.

So, another very close friend of mine, with whom I worked for years and years and conducted her in more performances than I can recall,—she had sung in Europe for some years, and she went back to Europe to sing in Bulgaria, in both Sofia and in Varna, the two biggest cities, and she sang *Aida* and she sang *Tosca*, and she said to her husband, who was a piano technician as well as a tenor, “What’s the matter with this orchestra? I’m singing *Aida*, and in the third act I have this rise floating up to the high C which is meant to be sung pianissimo. I can float that easily without any trouble normally. Here I have to yell as loud as I can yell to get the note up,—what’s going on?” And her husband said, “My dear, even the pianos in this opera house are tuned to 451.” Disaster! So they wanted her to come back and sing Elisabetta in *Don Carlo*, and she said “I’m coming back only if you can get your orchestra down to 440 where it belongs.” She wasn’t even talking about the ideal pitch of 432 but even down to a normal 440. They couldn’t do it.

Solving the Problem

We are now engaged in research to find out what to do to alter the wind instruments. Strings can just tune down to the proper tuning. Winds have much more difficulty in doing that. There is a limit to what they can do. If you push a woodwind instrument all the way to where all the parts are very tight, that’s as high as your pitch is going to go. If you pull it out slightly, that’s as low as your pitch is going to go. There are limitations. Fortunately we have a member of our organization who is a bassoon player, and he got a slightly larger mouthpiece and he got slightly larger reeds—and now he is perfectly comfortable with that larger mouthpiece and reed playing at 432. That’s wonderful. I’ve discovered the flutes and the trumpets can be altered.

Now we have somebody in the Washington D.C. area who plays horn for us, who has figured out how to get the horns down. When I tried it years ago, the hornists just pushed their hands deeper and deeper into the horn to lower the pitch, and they had to play much louder to be heard, and they ended up with sore lips and they said they would never do it again.

So we have to solve those problems, and we are in the process of solving them, because the actual physical

difference of beauty and roundness and the fullness of the sound is unmistakable. Both in the Eighteenth and Nineteenth Centuries there were laboratory experiments with some of the great Italian eighteenth-century stringed instruments to discover at what range they achieved their greatest sonority, their greatest roundness of sound, their greatest resonance, actually. And we know that greatest resonance means greatest roundness and greatest mellowness and greatest beauty of sound. And both experiments in both centuries came up with the same figures. Between 427 and 432 was the optimum resonance for all of these beautiful Italian stringed instruments. This is not a matter of laymen’s opinion. This is a matter of scientific determination.

Something Has Gone Seriously Wrong

So, when you have people like von Karajan asking lyric voices like Mirella Freni to sing *Aida*, you know something has gone very seriously wrong with the entire casting process. If the orchestras tune so high that only lighter voices can sing the roles, then you are falsifying the entire character of the music. Because although you have a voice that can hit the notes, it is not of the right color and it is not of the right weight, and it doesn’t work with the orchestration, and I can tell you no matter how hard the conductor may try to keep the orchestra down so he doesn’t injure the voices, sooner or later light voices singing heavy roles will be severely damaged.

The great Italian conductor Giulio Serafini said at one point, “if they keep up this absurdly high tuning pitch, it will be the end of the Italian lyric theater.” Just like that. The end of the opera house if we keep tuning up here at these ridiculous pitches! And I wonder if opera wouldn’t be a whole lot more popular today, especially in Eastern Europe, where Vienna is 448 for example or Varna 451—absolutely, totally impossible. Opera, I think would be much more popular if you had the correct tuning and you had voices naturally in the proper respect to pitch.

I would only say that if you notice so many of the opera stars in recent years have come from England or the United States, which is where the pitch is still down at 440 or 442; in Europe, especially in Eastern Europe, the pitch is so high, that very few singers come to the Met now that are not already burnt out. So we have many more English and American opera singers than we do from Italy, which used to be the great fountain of them. Anyway, one could go on forever, but thank you for your indulgence.