

## Should the 'A' go lower still?\*

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*What follows is the transcript of Professor Ernetti's speech to the conference:*

I have been teaching pre-polyphony since 1958 at our Benedetto Marcello Conservatory in Venice, and it is the only professorship in that topic existing not just in Italy, but in the world, I believe. We start with the Sumerian Hymn to the Creation of Man, of 2000 B.C., of which I had the pleasure of transcribing the music rediscovered in the National Museum in Berlin (a tablet); and from this hymn of the second millennium before Christ we go down to the Lauds of Cortona, studying the theoretical, historical, paleographic, and rhythmic, etc. aspects, of three millennia of music.

So I have to say that the "A" of our ancient generations up to my fellow brother Guido Pomposiano—who unfortunately continues to be called Guido of Arezzo, and who was not from Arezzo, as I demonstrated in my biography and as the documents tell us—down to when he still tuned the Gregorian chant with a monochord.

I am happy to begin by reporting a phrase of Mrs. LaRouche here, during her speech on "The Universal Validity of Classical Esthetics" reported in *Il Machiavellico* of July 1988. She said, "Man whose Reason (microcosm) reflects the laws of the order of Creation (macrocosm) is the summit of Creation, insofar as he does freely and consciously what other organisms of the universe do in a certain sense unconsciously. Man as the *imago viva Dei*, the living image of God, has the duty of imitating the activities of God the creator and hence of continuing Creation in the universe."

This is a fundamental principle for understanding the essence of music. I tried to write about this essence in ten volumes, of which the first is entitled *I principii filosofici e teologici della musica*, (*The Philosophical and Theological Principles of Music*). It is one of the many series of my 72 volumes on pre-polyphony.

Music is born as worship, it lives as worship, and it dissolves into worship. If we start out from this concept, we see how the ancients, the Vedics already, the Sanskrits, and particularly the Greeks, used to say that music is the only art

(if there are any painters or sculptors here, excuse me) which is truly the daughter of God, because it has the two qualities of the divinity: invisibility and ineffability. Music is invisible (written notes are only signs). Music is ineffable. This is the principal concept which the composers of all ancient music studied, down to the Lauds of Cortona—hence my field—so that they could express the ineffable of that which the Creation cannot express—that is, so they could express what philosophy and theology have in their essence, but which, in fact, it is not possible to express in words.

### Primacy of the human singing-voice

Behold the song. Take note: Singing is the basis of the music of all the ancient centuries, before there were instruments. The instruments were born, based on the sonorous qualities, and timbres, of the human voice. But where did they come from? Where did we get this enormous avalanche of millions and millions of pieces of music all written on a strictly natural scale? It was certainly not tempered—which is the reason why today we return to the concept of naturalness in music with the epimorian number, a theory which was launched by Prof. Raffaele Cumar and has now been accepted by all the music theorists, and proposed in the international music reviews by the physicist Luciano Frusi from Venice here.

What was the basis, the essence? Why did these musical pieces spread with such capillary action, elevating billions of persons over the centuries—such as Greek music, or, think of the Gregorian chant, the Ambrosian chant? Or the Aquileian right here close to us, which in the fourth century was already classical; St. Jerome spoke of it in A.D. 378 in his *Cronicon*, when he said "*clerici aquileienses, quasi chorus beatorum abentur*" ("The choir at Aquileia was considered a choir of angels"). You had the Aquileian, the Acquitainian, the Mozarabic, the Celtic, and so forth. Why?

Let us look back at the beginning of Creation. In Genesis 1:3, it is said, in a translation I don't like: "God said: Let there be light." This "said" is not the right translation. The Hebrew verb is *vaiomer* deriving from the Aramaic *amar*, which means to "resound," "to sound," "to sing." Hence the right translation would be: "God sang: Let there be light." Ah! Sound and light, here are the first elements; but sound comes first, please note: first the sound vibration, first musical vibration, and from musical vibration the visual, the luminous vibration.

Science today can demonstrate, with numbers in hand, that it is that way, that there is a conversion between sound vibration and light vibration, and vice versa. But why? The harmonic spectrum is a fundamental dogma, a musical dogma, you know, created by God in nature, precisely in this primordial act of sound and light, and, take note, light has the same harmonic spectrum as sound does. For just this reason we can tell our dear pure materialists where to go—because matter does not exist. We all know from quantum

\* For EIR's view, see page 23.

physics that all which is material, or rather what we call matter—wood, iron, and stone—in reality is nothing other than wave-energy (try to prove to me the contrary)—wave-energy, sound, and light waves. What distinguishes wood from iron, iron from stones and what-have-you, is merely the relation of the harmonic spectrum, hence the quantum logarithmic element, according to which iron has an “x” element, let us suppose, of this harmonic spectrum, wood a “y,” etc.

In reality we find ourselves in what is a cosmic song of praise. Since the whole universe is in its substance sound vibration and light vibration, the whole universe sings; it *sings*, the Creator sings, He *plays music*. Here is the first Biblical element, already in the first moments of Creation which tells us something. “But,” you are probably asking, “by what tuning fork?” Wait.

### The case for A=415

Going along further, we know that the harmonic spectrum which I indicated, constitutes the universal cosmic law of the universe, and of the single elements making it up. This harmonic spectrum is found to be identical in all its elements with the same proportions. So it is a principle which in philosophy, but also in mathematics, we call “cosmological primacy.”

This leads precisely to the conclusion—incredible but true—that all elements live and are alive because they are made up of sound vibrations. Today the latest branch of physics, radio frequency physics, does nothing but prove this principle, that all the elements live and are alive because they are made up of sound vibrations, with this primary and cosmological principle of the harmonic spectrum.

Now pay attention: We have a great, still-living musicologist, a profound scholar Prof. Alain Danielou. At the Cini Foundation, where we live, we have rooms full of his studies, his collections, all the comparative music which is due to him. Among the other volumes he wrote there are two in particular, one on comparative musicology, and the other on musical semantics, which are fundamental. In the general picture which he presents, with comparative tables, of the ancient scales, up to al-Farabi, what do we find? In the division of the tones and semitones into cents [100 cents equals one semitone—ed.], we find that the A of the primordial harmonic spectrum up to and including the tenth century, was at 415, and oscillated a bit up and a bit down from there; depending on whether you were closer to the East or the West, it oscillated up to 420, but not beyond.

All the musical pieces I mentioned earlier—Gregorian, Ambrosian, Aquitanian, Aquileian, etc.—were sung to that tuning fork: 415-420. This is the source of the charm of the Gregorian and the Ambrosian chant. This is the source of the possibility that everybody without distinction, even simple people, could sing the Gregorian and the Ambrosian chants, and this is where you understand how the ancient modal system could have the enormous richness of its modal scales,

to the point of arriving at 2,110 modulations, while today with our tempered scale and our two modes, major and minor, which are thin and impoverished, we hardly reach 100. What musical progress have we achieved by constantly hiking up the tuning fork? Even Verdi’s 432 is still too high, not to mention 440—that would be the limit!

The modalities of this music burst out into beauty, into sonority, into fluidity, into flexibility of colors, precisely because the [A = 415] tuning fork is low and is accessible to all voices, to people as they are. Music is born not just for the soloist, although certainly there were soloists. If you read the issues of my review *Jucunda Laudatio*, you will find among other things a wonderful volume entitled *Jubilus* with all the proofs, the citations of all our ancient theorists, and you will find that there were soloists—and they were some soloists! When you had the most highly florid ornamentation, such as in the verses of the Hallelujah, who sang? Either a woman or a child. But in the refrain, the people responded, and that was fine for the soloist and for the people.

And we read authors like Marziano Capella or Boethius, who say: “Oh, these songs have truly come from the beyond, they are truly dictated by the angels,” because they elevate the mind—so much so, that when the song is finished, the mind does not fall back to earth, as occurs with our music today: You wait for the finale, the seventh, and that’s it. No! The aim was different, to elevate the spirit and leave it there, suspended on high.

Because the purpose of music is this: *elevatio mentis in Deo*, to elevate the mind to God, and leave it there: This is the purpose of true music, because all music is worship. So Danielucci shows us how at least up to and including the tenth century, all the ancient music was performed with a tuning fork between 415 and 420. Here I would have a lot more to say, but I cannot quote my book, because if I did we would not finish until tomorrow. I just summarized a part of it.

### The case against well-tempered tuning

But now I will permit myself to tell you something else, which is to say, speaking of philosophical and physical laws together, there is a very important problem, the correspondence between the physical laws of the universe and musical notes. This problem has already been confronted by the physicist, albeit a relativist, but in fact he is a true physicist, Arthur Eddington. According to him, the seven musical constants of universal cosmology correspond exactly to the seven notes of the music—but to the natural values, not to those of the tempered scale.

I am very convinced that the race to the highest possible tuning fork derives precisely from the tempered scale, which has ruined music from so many standpoints. When I hear someone say, “Ah, I am in music education,” I would like to reply, “You miseducate, you don’t educate, because children have music naturally. You have to educate them to the tem-

pered scale.”

The seven musical constants correspond to the seven notes that the Creator “sounded in the universe at the beginning of time”—sound, light. They are:

1) The speed of light, in relative correspondence to the speed of sound.

2) The constant of universal gravitation, which is based exactly on a standard of particular vibrations, which never goes beyond 420.

3) The Planck quantum constant. Here we could analyze the whole microcosm in all of its aspects, and you will see that also in the way of electrons, protons, and neutrons it never goes beyond it, which is to say how this law is innate in the universe that man wants to destroy—going so far as to pass a political law of 440! But politics should not get into the other law, least of all into music. Make politics as much as you want, as long as everyone knows that politics is the totality of human falsehoods. Politics should not enter into art, and if it has to enter there to set standards, it must follow what the specialists must do.

4) Relativistic constant of dilation of the universe. You have heard a thousand times how the universe dilates, then contracts; it is a constant polemic among the astronomers and astrophysicists, but the truth is that this law, too, is comprehended within a universal law of physics, of sound and light vibrations.

5) The mass-charge relations of the electron.

6) The mass-charge relations for the proton.

7) The elementary charge of the electron, today supplanted by the quark theory.

But in general cosmogony, what do we arrive at? That Pythagoras was right when he discovered the law of the harmonic spectrum, that Zarlino was also right when he theorized with Pythagoras, that the highest philosopher and theologian St. Thomas Aquinas was right when he confirmed Pythagoras, down to today.

### **Symphony of the galaxies?**

But we could go on until tomorrow. I have to tell you one last discovery which you must have read about in the newspapers, but I am in direct contact by letter with the discoverer. You certainly will have heard about or read in the papers that the galaxies play music, the billions of galaxies, and that every galaxy has billions of stars, they have a particular music. We get back to Pythagoras’s music of the spheres. Here we have a result by an astrophysicist in Milan, a woman who also has a degree in opera singing, piano, and composition: hence she is a physicist, astrophysicist and a musician, Fiorella Terenzi. She did some formidable studies in the United States, in Arizona, putting herself into contact with the UGC76-97 galaxy, with ultra-sophisticated equipment, and arriving at the conclusion of the conversion of sound into light and light into sound.

What result came out with these immense radiotele-

scopes? What resulted was the possibility of registering the sound of these stars, these galaxies. Because these sounds surpass immensely the frequencies captured by the threshold of human hearing, there are different apparatuses by means of which she was able to reduce the gigahertz into our hertz, between 20 and 20,000, i.e., audible. The result is an endless gamut. Right now work is going on to be able to record them, and we will thus be able to hear the symphony of the galaxies. But here’s a case in point; we get back to universal cosmological laws, for here, too, the A never surpasses 420.

Even today’s astrophysics confirms what was naturally created by God the Father, He who emitted the first sound. God sounded: Let there be light. The tuning fork cannot be too high, and in my view, it cannot be beyond this. Verdi’s is already too high, because it does not stand up either to physics or to cosmogony. First we heard from the expert, that the vocal and instrumental colors would be much more accessible at the threshold of our hearing. And here is another psychophysical law: We are losing our hearing, not just because of noise, but also because of us musicians who are in the midst of sounds, since the sounds are stupidly believed to be more natural because they are more brilliant. Nothing of the kind! It is not true at all that they are more natural because more brilliant; on the contrary, they are more strident!

### **‘Do we need an exorcism?’**

But I will repeat one thing that the baritone Gino Bechi already said: It would be good for the government to intervene in a different way, because this law was made I don’t know how. (In fact, we do know, but we’re not talking.) We have to cut it down to size in another way. I’m not the best person to give advice, even though besides being a theoretical and practicing musician, I have been an exorcist for 32 years. I really have the impression that the devil put his hooves into this law, so I am not saying we should exorcise the law and those who passed it, but I do suggest saying: Let’s see a little of the specialists in acoustical physics—grant me this at least—let’s see the experts in this matter who have studied the harmonic spectrum, the universal laws of acoustical physics.

Like it or not—I am not saying this to you, but to the government for whom you are undoubtedly the faithful spokesman [addressed to a representative of the Entertainment Ministry—ed.]—will you please hold some hearings, and not hear just a few very limited orchestra conductors? Or at least let us put it this way: Instead of just interrogating a few politicians who are more or less amateur musicians—because there are also those who say, “I like music,” and down goes the law; it’s not enough to be a mere music lover—other than those, would you like to interrogate an international commission of real specialists, who have the maximum depth on the question, both theoreticians and practicing musicians?