On First Hearing Bach’s St. Matthew Passion

I grew up in Greenpoint, Brooklyn at a time when this now totally cool part of New York City was simply a blue-collar, partially Polish-speaking residential area. It was a wonderful place to grow up. A two block walk to the subway allowed one to go just about anywhere in the entire city for only $0.05! Central Park, Carnegie Hall, the Metropolitan Museum, and Stuyvesant High School were easily reached. Good music could be heard at almost any time of day or night on two radio stations, WQXR and WNYC. There was a public music library in midtown Manhattan where one could listen to recordings and check out musical scores entirely free.

I had begun to study flute when I was thirteen, and couldn’t get enough of “classical” orchestral music (i.e. symphonic music of Beethoven, Mozart, Brahms, Tchaikovsky, Shostakovich; ballet music of Stravinsky and Prokofiev …). My early encounters with live music performances were relatively infrequent, but included an Easter-time presentation of J. S. Bach’s St. Matthew Passion in a downtown Manhattan church when I was fifteen. The beauty of this work completely swept me away. The music alone, from the simplest, exquisitely arranged four-part chorales to the most expressive solo arias commenting on or reacting to the main narrative (including one with a beautiful flute obbligato part) and the magnificent double choruses with full orchestral accompaniment, was a revelation. And even as a convinced atheist, I found the drama of a revelatory Passover celebration, followed by the accusation, trial, and crucifixion of a Jesus who essentially refused to participate in the proceedings against him, to be deeply moving.

It was this experience that called my attention to the music of J. S. Bach (at that time, particularly to the six Brandenburg Concerti, the four orchestral suites, and the Goldberg Variations). Even though my first hearing of the St. Matthew Passion occurred almost 75 years ago, it remains a work that I still both enjoy and admire. This admiration was especially reinforced soon after I had joined the Cornell faculty, when I had the opportunity to play principal flute in a Bailey Hall performance of the St.
Matthew Passion organized and conducted by Professor Donald Grout. For this occasion, Professor Grout had recruited several instrumentalists and singers from New York, as a result of which I had the pleasure of playing the wonderful aria with flute with the extraordinary Adele Addison as soprano soloist. (One of the joys of being at Cornell is the fact that our Department of Music has always welcomed the participation of outsiders in their presentations.)

While the beauty of this masterpiece has never ceased to engage me, my love of music did not dissuade me from pursuing a career in science. Chemistry had begun to fascinate me at a very early age. The fact that we can manipulate molecules to produce dyes, perfumes, medicines, and even fireworks, never ceased to intrigue me. There is great beauty in the logic by which 19th and 20th century chemists and physicists came to understand how the three dimensional structures of molecules of interest (such as glucose, adrenaline, morphine, cholesterol, indigo, insulin …) could be determined. Even more remarkably, with sufficient imagination all of these compounds could be synthesized in the laboratory! I have studied a wide variety of chemical problems in my own research at Cornell, and I have taken particular pleasure in helping to advance (in close collaboration with Professor Thomas Eisner) our understanding of the many roles that organic chemicals play in plant and animal defense, communication, and even sexual selection. This research has lent itself to “story telling” as a key feature of many of my lectures. (Among the joys of an academic career is the opportunity to pursue essentially unrestricted research, as well as to introduce undergraduate and graduate students to the wonders of one’s subject.) Fortunately, there is no problem with combining a career as a professional scientist with a serious humanistic interest. (The relationship may not be entirely reciprocal: it is not as simple for a professional humanist to participate actively in most fields of science.)

I must admit that the selection of the St. Matthew Passion as the single, most influential work in my musical experience is somewhat arbitrary. An alternative choice might have been Mozart’s (and Da Ponte’s) The Marriage of Figaro. Here again the combination of the most beautiful music with a strong narrative, in this case with material ranging from humor (not found in the Passion) to some of the deepest
human feelings, is a miracle of the human imagination. While my appreciation of this operatic masterpiece came a bit later in my life, it could well have been my first choice had the timing been otherwise.

In concluding this brief essay, I would like to note that the effect of the passage of time on a musical masterpiece is entirely different from time’s relationship to science (and to the circumstances of everyday life). Since I first heard the St. Matthew Passion, the NYC subway fare has increased fifty-fold. The annual tuition at Cornell’s College of Arts and Sciences has gone from $458 in 1945 to $48,880 today. During this same period, our ability to determine molecular structures (based on how much of an unknown substance is needed to make the determination) has improved by a factor of between a thousand and a million, depending on the complexity of the structure in question. Some chemistry problems that would have required a half-dozen years of a graduate student’s efforts 70 years ago, might now be solved by a talented and properly equipped undergraduate in a few hours. Similar dramatic advances have occurred in most fields of science. During this same period, for example, our understanding of the nature of the observable universe and of Earth’s position within it has undergone an immense revolution. But what has become of our 18th century musical masterpieces since they were written? While much of their beauty has survived well-intentioned attempts to modernize them, it has become apparent that to many, they are actually at their best when performed on instruments and with techniques that as far as we can tell were in use at the time when they were written. Their significance and beauty have not at all diminished with the passage of time. A scientist with humanistic interests can enjoy both the timeliness characteristic of the constantly evolving world of science and the timelessness of great art.