

## String Quartet No. 5 (The Transforming) An Anthroposophical Approach

*String Quartet No. 5 (The Transforming)* was commissioned by the Toronto Summer Music Festival for the New Orford String Quartet. Together with its slightly older sibling, *String Quartet No. 4 (The Suffering,)* they represent a psychological hermeneutic of the story of Christ's Passion and Resurrection. I use the language of music to reach where I am denied entry by ordinary language. (Difficult as this is to convey, I am beginning to understand ordinary and extraordinary things directly as music; it is only after this kind of understanding emerges into consciousness that I can find the language to express what it is that I have understood.) By "psychological" I mean the strong resonance that radiates from these well-known events, which I believe have indelibly marked the spiritual transformation of humankind. It is this particular story and its reverberation across space and time which to me define the epicenter of our species' much needed imminent transformation and my understanding of our planet's prehistory, history and destiny. It infuses all the other seminal points in our evolution, spiritual or otherwise, with meaning and purpose, and holds all of them together like a transcended *Harmonia*. To call my musical undertaking of this event "hermeneutic," particularly considering the subject's enormity, complexity and cosmic splendor, can easily be construed as arrogance. To my defense, I am not claiming to provide an absolute interpretation of the physical law-bending events of my subject—what we *currently* understand as physical law that is. It is far beyond my capacity, anyone's current capacity, to do so. My music is my entry point to a personal understanding, and it only represents a musical record of this entry and the insights it has made possible. It may be a completely different experience for a different individual. Here I am only documenting mine.

I ought to state at the outset, that the subtitle "An Anthroposophical Approach" has been inserted after a great deal of internal debate and with trepidation. I do not consider myself to be a member of the anthroposophical movement. I call my ideas "Christian" with no further

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qualification. My loyalty is reserved only for the Christ: the beacon that shines across time and space and points the way for our species' harmonic reconnection. Any term that includes "sophia" (wisdom) in it is instinctively suspect to me. I often quip with my students that those who have mastered *information* believe that they have mastered *knowledge*; the few who have mastered knowledge believe that they have mastered *wisdom* and finally the even fewer who have mastered wisdom believe that they have mastered nothing at all. To these very few this "nothingness" acts as an incubator which, with patience and suffering, can reconnect them with our common harmonic roots. A lot of theosophy, especially of the Blavaskian flavor, does not meet the criteria for this final stage of wisdom: most theosophists sought knowledge by foraging for information. Their ultimate goal was to attain the power that such information and accompanying knowledge engender. Historical experience has repeatedly taught us that knowledge without wisdom and truly selfless application turns rogue and becomes destructive. I have made an exception, however, for a few Judeo-Christian luminaries like the Austrian philosopher and polymath Rudolph Steiner (who coined the term "anthroposophy,") the German harmonist Hans Kayser, the American seer Edgar Cayce and a few others, whose lives and teachings have established them as benevolent masters of the knowledge and power granted to them, and whose work has strongly influenced my thinking. In the historical taxonomy of ideas, mine, particularly as expounded here, would fall very much within the anthroposophical description, although my marching orders are issued by the only source that I consider ever-present, ever-available and utterly reliable: the Christ.

There was also another consideration in the back of my mind as I was composing this quartet. The East-West theme of the 2019 Toronto Summer Music Festival was something I was asked to consider. Although in our days "East" is most often identified as East Asian, for the two millennia of European culture that gave us string quartets among other cultural treasures "East-West" meant the contest and cross-fertilization between two prominent forces: the Judeo-Christian and the Greco-Roman. Having been born and raised in Greece, studying Greek philosophers by day and steeped in Christian mysticism by night, this dualistic heart of European thought was a polarity that I struggled to understand throughout most of my

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adolescent life and since. My musical mind is predominately nocturnal and subordinates analytical incisiveness to holistic understanding. I have tried from early on to reconcile this sharp east/west polarity of lateralized consciousness by searching its pre-dawn roots: in the inquisitive but secretive mysticism of Pythagoras and also in the Essenic roots of Christianity, which have been preserved in the monastic recesses of Mt. Carmel from the time of the early Hebrew prophets long before the advent of Yeshua of Nazareth. (According to his biographers, Pythagoras too sought enlightenment at Mt. Carmel.) It was during a recent visit to this majestic mountain, where five different religious traditions coexist peacefully today, that it occurred to me how the sharply delineated and counterpoised ideas in the daylight of consciousness, can blend and share common roots in the darkness beneath the cognitive surface. After considerable meditation, I concluded that:

- The cognitive contradiction represented by the terms “east” and “west” is a mirage;
- The phenomenon of western “objective” cognition is also a mirage that can be musically represented by equal-temperament tuning—a musical revolution that has enabled harmonic travel with all the advantages and drawbacks thereof;<sup>1</sup>
- The story of the Passion of Christ, especially the real and mentally attainable possibility of bodily regeneration, transmutation and resurrection, can be told by (non-objective) Pythagorean harmonic ratios and “Golden-Ratio” music intervals and can be understood as metaphors of certain relatively recent postulates of advanced physics and mathematics.

Bringing all these elements into a single musical canvas can only happen when the composer becomes a contemplative listener and resists the temptation to actively interfere with this ongoing dark archetypal dance tantalizing his/her extrasensory antennas. Every time I tried to

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<sup>1</sup> One of the early practitioners of equal temperament in the mid-16<sup>th</sup> Century was Vincenzo Galilei, the father of Galileo Galilei, who in turn was one of the early practitioners of “objective” science—equal temperament’s rationalist sibling. To me, the connection between equal temperament in music and rationalist science is a profound one, lying deep below mere surface correspondence. Both are reflections of the spirit of dissonance and rebellion against the undifferentiated (and hence consciously unknowable) *Harmonia*.

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superimpose a sense of logical continuity to the creative process, the archetypal images of this dance quickly dimmed and vanished. No amount of conscious effort could bring them back: only a kind of willful resignation was able to encourage their return, entirely on their own terms and timing. Frustrating as it was at times, this process enabled an ineffable (non-language-based) understandings of my subject. Once these vague sensations were musically formulated, they can become effable but not before. This essay has been written incrementally, following the compositional process several steps behind. Nothing discussed here has been deliberately inserted in the composition; quite the contrary. Some of the sudden and unexpected turns in the musical discourse were unthinkable to me before they happened spontaneously in the music. The sense that I was able to make afterwards, however, has convinced me that they were not random turns at all: they were all aspects of a larger matrix which my mind was not able to recognize non-musically. I have never doubted the primacy of the language of music when it comes to formulating profound understandings but, up until now, this certainty had only been conceptual. This was the first time, and only in key moments during the composition of this quartet, that this certainty has been transformed into lived experience.

Cast in three movements, *String Quartet No. 5 (The Transforming)* continues from where the previous quartet leaves off. The external storyline is the segment of the Jesus's Passion from his death sentence by the Roman ruler to the morning of his Resurrection. The internal storyline is a meditation on the meaning of human suffering, which began with the previous quartet and deepens significantly in this one.

Externally, *Pesach*, the first movement, documents Jesus's walk from the Pilate's "Lithostrotos" through "Via Dolorosa" (the Seven Stations of the Cross) to Golgotha, the Cross and physical death. Like with the rest of this quartet and its predecessor, there is no linear narrative here; in fact the musical elements defy any linearity by historically bouncing and anachronistically superimposing musical experiences from across time and space. The historical setting is the Pesach, the Jewish Passover, commemorating one of the events documented in the Book of Exodus, where the angel of death passed over the houses of those who marked themselves and

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their families with the blood of a lamb on the front door of their dwellings in Egypt. Inside each similarly marked home on that fateful day in the Roman province of Judea circa 30 AD, the faithful commemorated this ancient event with prayers and hymns and the pascal lamb while God's Pascal Lamb bled on the cobblestones of Via Dolorosa and on the Cross on the hill of Golgotha. By making this comparison, and lest I be misunderstood by members of the Jewish faith, I am sounding a warning towards a single direction: I make this comparison as a cautionary tale for present-day Christians who believe that ritual adherence to a mechanically repeated tradition ensures salvation: still in our days, the Lamb of God, in the face and body of a refugee, a heterodox or a person oppressed by poverty or abuse is sacrificed in vain and, increasingly it seems, in the name of "Christianity." When closed to those needing help, the doors of our homes are not safe from the angel of our soul's death, in spite of misunderstood assurances and our professing of faith in the redemptive power of Christ's blood. (I will have more to say about this when I discuss the third movement of this quartet.) The music of the first movement follows parallel lives connected by space and time but separated by belief and will. Arabic modes connecting disparate roots through two or three adjacent common tones<sup>2</sup>,

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<sup>2</sup> Because of tuning approximations engendered by equal temperament and the fact that some non-western modes expressed in equal temperament contain more than one augmented second interval, it is possible to employ "harmonic" modulations in monophonic music by relying exclusively on melodic common tones. Two augmented seconds in a mode will often result in three semitones in a row. Modes I and II in the example below are such a case. By momentarily contracting the melodic motion to the three semitones of modal degrees 2, 3 and 4, it is possible to modulate the music from Mode I to Mode II, or vice versa, thus displacing the root of the tonic by a semitone, C-natural to C-sharp, or vice versa. This is a tonally distant harmonic leap in the circle of fifths. It is quite unheard of in Near Eastern music but not "strange" to the native musical thinking because in this tradition modes modulate by interchanging higher or lower tetrachords while lingering on the common tetrachord. In the traditional practice the tonic is usually maintained, but in this extended practice made possible by equal temperament, it can shift dramatically. The same logic as in the traditional practice is operating here but with a radically different musical result.



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klezmer-like dance passages with a similar modulatory behavior, slow chromatic processions with broken symmetries (depicting traumatized Jesus's faltering walk towards the Cross) and sudden dark dissonances are all progressively reduced to a final three-note descending chromatic motif that represents a tragic distillation of the rampant pluralism of this movement. At the very end of this movement, the three common tones, which earlier enabled harmonic travel and later covertly underscored the faltering steps of the holy feet as they headed towards gruesome death, are here nakedly exposed.

Externally, *La Pieta (Jerusalem,)* the second movement, represents the deposition and entombment of Jesus's dead body. Internally, it is an imaginal view of Grace which, like morning dew, is slowly descending from the highest reaches of the violin to the lowest note of the cello on a ladder consisting of near-perfect Golden Ratio intervals.<sup>3</sup> The Golden Ratio is an interval almost halfway between a major and a minor sixth. The otherworldliness of its sound in this movement is due to the use of the 24-tone equal temperament instead of the traditional and familiar 12-tone. This unfamiliar system (with 24 equidistant notes inside the octave) soon shifts to 12-tone equal temperament, the latter used in this composition as a metaphor for Cartesian reality. In this new cognitive environment, the Golden-Ratio ladder is force-adjusted on the procrustean bed of the 12-tone equal temperament by stretching and contracting the nearly correct ratio to alternating major and minor sixths. In this arrangement, a grouping of any three adjacent notes on the interval ladder will produce a major or a minor chord.<sup>4</sup> When

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<sup>3</sup> Superimposed Golden Ratio intervals in 24-tone equal temperament:



<sup>4</sup> Superimposed Golden Ratio intervals in 12-tone equal temperament forming alternating major and minor chords:



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mapped within a single octave, such adjacent groupings form harmonic sequences of alternating major and minor chords with neither predominating.<sup>5</sup> The cognitive difference

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<sup>5</sup> Sequence of alternating major and minor chords derived from the piling up of Golden Ratio intervals:



The psychological ambivalence caused by the extended use of this harmonic progression containing an equal number of alternating major and minor chords has awakened me to the realization that the inherent imbalance between major and minor chords in the traditional major and minor western modes causes psychological leanings towards an optimistic or pessimistic view of the world and of our role in it. Although this is a subject for a separate study, I bring it up here since it was these particular sequences that have made me aware of it and, because of this, it merits inclusion. Traditionally the major and minor key harmonic progressions are identified by the nature, significance and frequency of the chords used in them (by “nature” I mean major or minor and by “significance” the nature of the chords on the functionally important scale degrees I, IV and V). Contributing to the generally accepted “ethos” of western common practice harmonic language, the “optimistic” major mode is dominated by major chords on the important scale degrees with counterbalancing, but not dominating, minor chords on weaker and less frequently used scale degrees. Conversely, in the “pessimistic” minor mode most of the above is reversed. I say “most” because in both modes the dominant V chord is always major—perhaps a reflection on gender understandings in Europe during the eighteenth and nineteenth centuries, whereby the meaning of “major” and “dominant” was psychologically understood as “masculine.” Any attempts to break this traditional cast inevitably acquire contrasting psychological identities. For example a harmonic progression of only major chords, such as C, F, G, E, A, D, G, C is so unusually optimistic as to sound triumphalist, while the opposite is true with a song like “Echoes” performed by the rock group Pink Floyd where the harmonic progression under the vocal line is C#m, G#m, F#m, G#. The first dominant chord is minor and uncharacteristically capitulates to the subdominant chord, a V-IV chord progression deliberately avoided in common practice harmony as it semiotically implies a dominant masculine capitulation to the subdominant feminine. (This harmonic/gender “capitulation” is not uncommon in the music of Pink Floyd: we find it again in the song “Money” from the album “The Dark Side of the Moon” where the major dominant chord capitulates to the minor subdominant one and I suspect that it is also present elsewhere in their opus.) It may be that this kind of harmonic/gender, male-to-female capitulation, in sharp contrast to the male libido one associates with Rock music, is the actual cause of the pronounced melancholy one associates with the music of Pink Floyd. Finally, the reversal of harmonic roles in the important scale degrees (particularly in the minor mode) is often used to psychologically depict a heroic stance, the “standing up” against a backdrop of compliance. A major IV chord in a minor key has become commonplace for this kind of depiction, as in the well-known “Force” theme in John Williams’ soundtrack to the “Star Wars” series. There are countless examples in film music where rethought harmonic function represents a deeper psychological rethinking of embedded sociological norms and our acculturated emotional reaction to such rethinking. Within this semiotically rich tradition, the psychological ambivalence generated by the constantly alternating major and minor chords derived from the Golden Ratio intervals and without any routing in a traditional key evoke an unorthodox psychological archetype: the *Christ pattern*. Functioning within a (harmonic) tradition, but not beholden to it, this pattern connects “non-local” (distant) points in time and space by rejecting gender dominance of any kind and constantly evolving upwards along the circle of fifths (the karmic “Wheel of Fortune”). It is therefore the appropriate harmonic language at this moment in the progress of the second movement as it leads downstream to the “non-local” quotation of the British anthem “Jerusalem.” By avoiding local semiotic connections as per above, the “Golden Section” harmonic progression represents neither heroic intransience, nor submission to local dominance. It is therefore a metaphorical Jacob’s ladder to something beyond the purview of the ordinary or expected.

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between the two intonation systems, the first strange and unfamiliar, the second familiar and seemingly “hardwired” in our brain, feels like the crossing of a borderline between unconsciousness and consciousness, a metaphor for the continuously approaching Grace being suddenly noticed by our physical receptors. This crossing point is when/where voluntary self-sacrifice causes the mirage that we understand as reality to retreat and allow in its place an encounter with the reality of the Resurrection, the latter being not just Jesus’s heritage and destiny but everyone’s. Resurrection is the result of redemption of and by the archetypal deeper Self: an encouragement by the Fundamental for its harmonics to assume their intended nodal positions. Redemption is not a local phenomenon confined within space and time. As if traveling along invisible wormholes, it touches seemingly unrelated points in spacetime— “unrelated” according our Cartesian logic that is. If the physical and the metaphysical is a continuum, Redemption behaves as the metaphysical reflection of the physical phenomenon of Quantum Entanglement.

To help explain the unlikely progress of the music in this movement, which to some listeners may sound like a conceptual derailment, I need to make a detour down memory lane. A few decades ago when I first watched the British film *Chariots of Fire*, I was struck by an English anthem sang towards the end of the film which, as I realized recently, contains the title of the film in the hymn’s text by William Blake. The anthem is called “Jerusalem” and, for no reason that I can consciously understand, every hearing of it still continues to give me chills, a very rare phenomenon in my music appreciation otherwise. Back to present time, as the second movement of my quartet was developing along the path of the consistently alternating major/minor harmonies, I became aware that the music for Christ’s entombment was gradually turning into a regal processional and its balanced harmonic ethos reminded me somewhat of early 20<sup>th</sup> Century British harmonic language. Not sure what to make of it, I paused the creative process and wondered whether the music might have been moving in the wrong direction. When I find myself in such forks on my path that require a decision, I have trained myself to

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overcome my objections and let the music go where it wants to go next, expecting (hoping) that such sharp turns will make sense downstream. The next place the music wanted to go was the anthem “Jerusalem.” Blake built his text around an ancient legend that Jesus, aided by Nicodemus actually visited Britain, an imperial myth no doubt but, to me, an insightful understanding of how something ignored locally can connect deeply with completely distant points in spacetime and become a symbol of how reality truly is and functions. Transcribing the first notes of “Jerusalem” into my string quartet took place on or very close to October 7, 2018. In an effort to find something meaningful to hold on to, something that could rationally explain this sudden and arguably unsupportable detour in my compositional journey, I looked up Hubert Parry, the composer of this anthem, hoping for a miracle. There was none, other than the fact that Parry had died on that very day one hundred years earlier. Soon after the “Jerusalem” quotation, the music of this movement exits the concreteness of consciousness and vanishes in the Golden-Section interval vapor that marked its beginning, finally settling on a unison D (in solfege, “Re,” the medieval note-symbol for *Rex*: King.)

Externally, *Regeneration*, the last movement, is about Christ’s Resurrection. Internally, I was lost as to how anyone might be able to depict this process beyond the traditional triumphalist musical iconography. Even Carl Jung’s “collective unconscious,” which enables us to dream each other’s dreams and experience everything that has ever been experienced in the cosmos by anyone (a psychic depository of “quantum entanglements,”) could not provide any clues for my approach: Jesus’s tomb was sealed and guarded for three days. No human witnessed what transpired in the tomb during those three long days and nights. You can intuit and surmise from the Gospel narratives that the Resurrected body was a process which was not quite completed by the time the guards witnessed the explosive event. Christ asked the first witness of his Resurrection, Mary Magdalene, to not touch him, for the regeneration of his physical body was not yet complete (“for I have not yet ascended to the Father,”) <sup>6</sup> but a few days later he could masticate food, cross through locked doors and invite Thomas, his rationalist disciple, to put his

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<sup>6</sup> The Gospel according to John 20:17.

finger into the imprints on his body made by the nails and the spear, so that Thomas could believe. I have reached a point in my thinking and faith where I don't believe that anything is "metaphysical" in the contemporary meaning of the word (as imaginary or unreal). I see everything in the world, sensed, imagined or desired, as a resonant continuum and equally real across the sensory/imaginal spectrum. Our dualistic conceptual divide between "physical" and "metaphysical" is very likely just a cognitive limitation of our brain that, in the age of quantum entanglement and decoherence, can and should be reconsidered. The gospel accounts of what transpired after the Resurrection are consistent with someone who can function within four dimensions of space and within the confines of four-dimensional geometry. (Salvatore Dali's masterpiece, *Crucifixion (Corpus Hypercubus)* insightfully has the crucified Jesus suspended in front of a tesseract or hypercube, which is the three-dimensional unfolding of a four-dimensional cube, suggesting that the Cross of Christ is a dimensional gateway, the way up an infinite stairway towards the Divine.)

To Jesus's rational contemporaries and for the better part of two millennia afterwards, the phenomenon of resurrection might have sounded like a logical impossibility, therefore something that can only be approached by faith. This is still possible and certainly desirable, because faith and empathy move our ego's center of gravity outside the self, but today we can also fathom the idea that any structure, including a human body, can potentially be completely reconstituted, if all the information and equations determining the relationships of such a structure down to the subatomic level, can be known, remembered and mastered. This is certainly theoretically possible<sup>7</sup>, even though the technology may still be far in the future. Actually, the idea that we need any technology at all to accomplish this task may be a phenomenological mirage, a fable by and for our technocratic age. One's self-sacrifice, particularly of the experiential intensity of a mindfully endured crucifixion, may be the only gateway to such knowledge, memory and mastery. Easier said than done of course, but it is instructive, in fact redemptive, to study and, to the extent that it is at all possible, imitate

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<sup>7</sup> In his book "Our Mathematical Universe," MIT physicist Max Tegmark believes that everything in the universe is numbers: a conglomerate of equations not just representing but *being* the things we perceive.

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someone who has actually endured it and confirmed the expected outcome—an expanded physical law “experimentally” confirmed. It all comes down to the mystery of memory and memory-retention of such depth and magnitude that can cause resurrected bodies; the same cosmic memory-retention and “learning” law that, according to physicist Ervin Laszlo, causes ever-perfecting successive Big Bangs in the universe with ever more improbable initial conditions to enable galaxies, solar systems and planets with creatures on them that can contemplate their improbable existence. Non-locality, the physical condition that can potentially put into question the “reality” of reality, is a relatively new phenomenon in physics and limited to the distant edges of classical reality, but it was a natural state to the pre-conscious mind that could resonate by the entire spectrum of human experience, the oneness of all things, the greater part of which has since been delegitimized by the predominant positivist paradigm and relegated to mere fantasy.

In condensed form, this missive sums up my spiritual and philosophical entry point into the thematic landscape of the last movement. My musical entry point is the harmonic series. The Oneness with the Father that Jesus repeatedly speaks of, particularly in the Gospel According to John, is the oneness of an overtone which, when perfectly tuned, becomes indistinguishable from the fundamental frequency: it surrenders its individuality and independence in favor of becoming an aspect of the fundamental’s sonic plenum, which is heard by us as the enriched “timbre” of a single sound. To the quantifying ear, the overtone simply vanishes in thin air. (*Harmonia* is a system with which perfect tuning merges *many* indistinguishably into *one*. The overtone series is a cognitive metaphor of what happens when the Son sacrifices his individual will to that of the Father and, as a result, becomes one with the Father.)

The music begins with pizzicato sounds representing (in 24-note equal temperament) the approximate frequencies of several partials of a harmonic system on a C fundamental. Every audible musical (intervallic) ratio is also “translated” into the same ratio in the domain of rhythm. Repetitive rhythm is understood in this context as a frequency, a significantly slowed down multi-octave transposition of the pitch that the rhythm is associated with. This one ratio

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controlling both pitch and rhythm begins extremely sparsely but the texture quickly intensifies and complexifies by introducing additional harmonics and their rhythmic ratios to it. To be clear, it is not the entire region of the harmonic series used here. I have limited my sample to only include the harmonics seven to eleven of the low cello C, which in equal temperament sounds like a segment of the whole-tone scale (B-flat, C, D, E and F-sharp). The diagram below shows the rhythmic translation of a fundamental whose phase is 24 beats long with 39 of its harmonic partials (marked on the left of the graph as 1 – 40). The rhythmic notation of the five aforementioned partials as per below (plus, occasionally, a sixth, G, the twelfth partial) is what is shown in the score at the opening of this movement. It starts sparingly and imperceptively with a single partial and with uncomfortably long pauses between its repetitions, but gradually partials are added to the mix and, like a surging memory, it begins to be felt as an emerging presence in the dead stillness of the tomb.

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In this metaphorical resurrection, it is the code of the *relationships*, not of the elusive particles (pitches) that is remembered and applied. In modern physics, particles are defined by information (their “code”). Bits of matter are bits of *information* and the information is the *relationship* of these elements to each other. It is the relationship that causes the elements into being, not the other way around. (This fairly recent scientific understanding has been lying at the heart of Pythagorean philosophy for over two and a half millennia.) Structure too ensues as a memory of relationships gradually entering the realm of consciousness: in the music it is depicted as a progressive resynthesis or regeneration caused by Pythagorean ratios applied to both pitch and rhythm.

In this movement, the entering into bodily awareness happens when, just as in the second movement, these same harmonic relationships are translated into the twelve-tone equal temperament intonation system, the familiar tonal habitat of the western ear. From this point on, memory transcends the atomic and molecular and enters the conventional human scale. The individual mind of the earthly Jesus<sup>8</sup> is flooded by the memories of the Christ: the previous earthly incarnations of the Christ spirit in the persons of Adam, Enoch/Thoth/Hermes, Melchizedek (the King of Salem), Joseph (the Prince of Egypt), Joshua (Moses’s right-hand man), Asaph (King David’s and King Solomon’s psalmist, court musician and prophet) and Jeshua (the High Priest who reintroduced the Temple worship after the Babylonian exile,) among other earthly manifestations.<sup>9</sup> These memories begin vaguely within an Edenic, undifferentiated harmonic plateau by focusing on the section of the harmonic series which in equal temperament sounds like a succession of whole-tones: a segment of the undifferentiated

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<sup>8</sup> I am making a distinction here between a person’s mind, which survives the grave, and this person’s brain, which does not. Furthermore, I am also making a temporary distinction between historical Jesus’s post-mortem mind and the cosmic Christ mind. I call it temporary because I believe that self-sacrifice enables the kind of tuning that makes the two minds indistinguishable from each other and merges them into One.

<sup>9</sup> These and other identifications have been made in trance by the American seer Edgar Cayce (1877 –1945), a strong influence in my own understanding of the numinous. The cosmic and harmonic picture they collectively paint feels intuitively right to me and I stand by them, contentious as they may be to other Christians and non-Christians. It is not only Cayce making identifications. The connection between Christ and Melchizedek is clearly stated in the Book “Melchizedek” included in the scrolls discovered in Nag Hammadi, Egypt in 1945. The connection is also implied in Paul’s “Epistle to the Hebrews” and in the Dead Sea Scrolls. The identification of Jeshua, the High Priest, with the Messiah is quite clear in the writings of the prophet Zechariah.

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whole-tone scale. Harmonic motion is discovered by translating the same three or four whole-tone pitch collection onto different positions in different harmonic columns.<sup>10</sup> This position displacement causes root displacement, thus opening up the possibility of multiple roots. I believe that it is this displacement that causes the Cartesian conception of space and time.<sup>11</sup> In turn, this conception incubates consciousness, although at this state, consciousness is still mostly undifferentiated. Adam begins to name the world around him, thus he is developing a dialectical relationship to things perceived as external to himself, but he does not yet think of himself as separate from the world. He is heading for a fall but is still in touch with his Edenic state: he has conversations with God and God has conversations with him. The Fundamental and His first overtone are still in resonance although the cosmic ear can now distinguish Adam's octave overtone as a separate (created, or rather revealed) pitch. The sound of the quartet music at this point is reminiscent of the music of the impressionist composers which, to me at least, represents primordial desire: the desire of the pre-Adamic fallen angels who unwarrantedly entered materiality and were inextricably caught in hybrid deformed mixtures such as the fauns, nymphs, satyrs and other mythological creatures which serendipitously also populate the storylines of early 20<sup>th</sup> Century impressionist music. Still in a Paradisal state, but now infected and bound for the proverbial fall, Adam and his companions are also consumed

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<sup>10</sup> For example, D, E, F-sharp and G-sharp occupying the harmonic positions 9, 10, 11 and 13 on the C harmonic column but 8, 9, 10 and 11 on the D column:



<sup>11</sup> Actually, the “common” pitches in the two harmonic columns of Footnote 10 are not real. In non-equal temperament, the tuning of each pitch in the entangled pairs would be different and there would be no pairings of identical pitches at all. It is the equal temperament tuning compromise that creates the illusion. The implication is that, just as harmonic relationships in equal temperament happen solely due to the latter's tuning compromise and are otherwise unreal, local (reason-based) connections in Cartesian reality are equally unreal and are caused by (and in turn cause) the illusion of externality created by consciousness. The reality that reason staunchly defends is unreal. Where strong and real relationships exist, material externality vanishes and all that remains is one infinitely rich fundamental: The Godhead.

by the desire to partake of this planet's temptations by exiting *Harmonia*. Desire makes you opaque, visible and, consequently, corruptible: the individuated harmonic partials are now audible (naked) as something separate from the Fundamental. They move in external (Cartesian) space and time and relate to one another through gestalt relationships and counterpoint, their transcendent common relationship to the fundamental now only implied by conventional harmonic relationships which are also depended on time. Eden is now translated into the present earth perceived by the senses.

The next part in the music, the proverbial fall, had given me a great deal of difficulty. We, / in the specific case of this composition, *are* the fallen humans. Even in such consistent metaphorical narrative, the musical switch from the Edenic state to the Promethean is a difficult transition, in more ways than one. Every time the term "Promethean" is invoked in classical music, the ghost of Beethoven is not far away. Beethoven's music has always haunted me as the musical depiction of the fall and the human determination to overcome it through sheer will and suffering. Prometheus is punished by the Gods for gifting fire (consciousness and its technological byproducts) to humans. Zeus punishes him by having his entrails consumed daily by carrion birds and the body reconstituted nightly to its original form: an Orphic metaphor for reincarnation and continuous earthly suffering. Beethoven and the idea of suffering were foremost in my mind as I was struggling to find my way into the next stage of the musical narrative.

Understanding the idea of suffering and its place in the world is a good way to untangle the dichotomy between the eastern and western understandings of human origin and destiny. The Greeks had a dark view of human suffering. They considered it evil and senseless. It reflected the cruelty of their gods who meted out suffering on humans when it served their purposes or desires, or out of sheer caprice. The Greek mind viewed death the same way. In Homer's *Odyssey*, the phantoms of famous dead warriors warn Ulysses, who is about to embark on a dangerous journey, that life as a slave on earth is preferable to life as a hero in Hades. Respect and devotion towards their gods notwithstanding, the Greeks viewed Prometheus's eternal

punishment as senseless: it does not express any kind of justice from the human perspective and it has no correctional character; it is just sheer cruelty on the part of the gods stoically accepted by humans.

By contrast, in the ancient Hebrew tradition, suffering was not viewed as senseless or purposeless. There are many times in the Jewish tradition that God's chosen people must have wished that they had enjoyed the life of the not chosen, given the trials and tribulations that they were made to endure, which were meted out by a God who often described himself as "jealous" and "vengeful." In contrast to the Greeks, however, the Hebrew sacred texts recognize a purpose to suffering. To them, and to the Christian tradition that sprung from Judaism, earthly suffering is a kind of cosmic refinery. It transcends individual lives and even collective ones. For example, with the exception of Joshua and Caleb, none of the people saved by God from the Egyptian bondage lived to see the land that was promised to them by that very God. The Greeks would have entered this very fact as a persuasive argument that the gods are essentially immoral. To the Jewish mind, however, the "chosen people" was a project spanning millennia and still continuing in our days. Christianity continued this narrative but shifted the focus from the "people" to the "individual," a Greek invention historically speaking, but keeping intact the concept of suffering and personal sacrifice as a refining crucible. This was an alien concept to the Greco-Roman secular mind. Romans reacted with unusual anger and venom towards people who would lay down their lives for their Christian or Jewish faith. Such attitude was thought of as unreasonable and dangerous and needed to be stamped out for the health of the empire (or the ego of the emperor, when mentally unstable figures were placed at the helm).

My segueing from Edenic desire to the tragic Promethean predicament (or its Judeo-Christian refinement through the purposeful crucible of suffering) needed to be mediated by a musical depiction of the fall: an instantaneous manifestation, long in the making by a continuous accelerating process of succumbing to the impulses of earthly desire. The catalytic agent to this fall was reptile-like temptation hidden deep in our Amygdala or "reptilian brain"—the biblical

serpentine Deceiver. I have meditated on the nature of the Deceiver and his musical expression in a previous composition<sup>12</sup> and revisited these mediations in the present quartet. The Genesis narrative depicts him as an anti-hierarchical rebel (in the current American political landscape, a “Steve Bannon” figure) questioning the authority of God, any authority for that matter, but deceiving the protoplasts by promising them a godship of their own. The promise itself was not actually false. “Liberating” the harmonics from their deeper fundamental will make them audible fundamentals (gods) in charge of their own private harmonic universes fashioned after their own image or frequency. What was not mentioned was the price for this so-called liberation: by being apostates themselves, they would virally infect their own structure with apostasy, unable to maintain any hierarchical structure for any length of time and succumbing instead to the vagaries of entropy and physical death. The history of rising and falling empires and other human structures and the history of disease and death are the history of the primordial belief in this deceptive promise and the consequent breaking up of the original *Harmonia*, a phenomenon that manifests in the world of our senses as randomness.

The obvious metaphor for anti-hierarchical music is Arnold Schoenberg’s twelve-tone system, a series of twelve different pitch classes whereby, each of the twelve pitch classes may not be repeated until the other eleven have had their turn in the spotlight in strict sequence. A conceptually diametric opposite to the ultra-hierarchical harmonic series, this system is cognitively difficult to follow, because our cognition is essentially fractal and fractals are hierarchical structures. To be able to seduce the protoplasts, the Deceiver must hide his anti-hierarchical structure behind a hierarchical mask: a harmonic progression. He does this with a symmetrical transposition of two chords, a major and a minor with the roots a tritone apart, the tritone interval being the medieval symbol of the devil. The two chords, A-flat major and E-minor and their downward transposition by a major second to G-flat major and D-minor, form together a skillfully hidden twelve-tone row, which aurally is masquerading as a hierarchical

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<sup>12</sup> *Redemption: Book 1* for string quartet and orchestra, 2009.  
<http://homes.chass.utoronto.ca/~chatzis/Redemption1.htm>

harmonic progression.<sup>13</sup> The deception does not stop at the clear symmetry and “efficiency” of the row (the information from the first hexachord is sufficient to produce the second). The four chords and their further downward continuation (a replica of this row starting with E-major plus another starting at C-major) reveal the same consistency of alternating major/minor harmonies as in the chord progressions derived from the Golden Ratio harmonic sequences used in the second movement. The devil’s creation mimics that of God’s. The difference is that at the heart of God’s sequence hides a ratio of beauty and in the devil’s sequence hides entropy.

Once these twelve-tone harmonies take over the previous impressionist music of wandering desire, and after the deception is realized, the flow of the music breaks down. There is confusion, hesitation, the experience of something unknown and viral having infected cognition. Faltering under the non-hierarchical twelve-tone chords combined with spasmodic recalls of the equally non-hierarchical whole-tone chords of the previous section and broken by the growing uncertainty of expanding pauses, the music suddenly lands hard and rather unexpectedly on a D minor chord.<sup>14</sup> This is the moment of realization of the primordial fall and the moment when earthbound (historical) humanity begins. Almost inaudibly the cello begins to clock time metronomically. I believe that historical (clock) time begins at the moment of realization of the fall as does the beginning of entropy. (The Strong Anthropic Principle in physics may be invoked here in partial defense of this seemingly outrageous belief.) The protoplasts are self-exiled into the harsh environment of externality and, at first, they do not know what it is or how to exist in it. It is like “awakening” into a strange VR environment and having no tools that can help you navigate it. The stillness of the cello one-note ostinato reflects these awkward first moments. Eventually the stasis gives way to aggressive gestures in the western major-minor mode. We have now entered the world of full consciousness, aggressive

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<sup>13</sup>A twelve-tone row consisting of a major and a minor chord and their transposition a major second lower:



<sup>14</sup> “Re” (Rex) again, the King of this realm, fallen into a minor key.

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action and Promethean suffering permeated by an overriding sense of Beethovenesque doom. This is Adam's journey through the ages as he slowly realizes that he who has consumed from the Tree of Knowledge, must be consumed by the Tree of Life, the Cross of Christ, to complete the cycle of human redemption.

The music gradually begins to sound more "Jewish," reminiscent of sections of "Pesach," the first movement. It races through millennia of soul-development and slows down around the time of seminal events in the life of the historical Jesus. Jesus was born and lived at a spiritually dark time for humanity. Like the Greek Seleucid overlords before them, the Romans sought to crash the spirit of the Jews and extinguish what Israel represented in the spiritual legacy of humanity by ruthless suppression. The Greeks, who to the Romans represented the "mind" of humanity were accepted and encouraged. The Jews who to the Romans represented the "soul" of humanity, in other words the conscientious objector to Roman "manifest destiny"<sup>15</sup> were viewed as a direct threat to Roman ambitions and needed to be suppressed or worse. In such struggle for spiritual and physical survival and the difficult choices that the leaders of the Sanhedrin had to make under the watchful eye of the Romans, Jesus preached love, forgiving your enemies and giving to them even more than they asked which pretty much established him as an inscrutable oddity to the Romans and as a potential rabble-rouser and therefore dangerous to the influential part of the Jewish establishment. Jesus's enemy was not the Romans or the Sanhedrin leaders, some of whom (both Romans and Jewish leaders) were actually his friends and friends of some of his more socially connected disciples, like John. His enemy was the one who dethroned him at the dawn of the human age in Eden by seducing his then soulmate (now his suffering mother). It is this enemy he went to meet in the desert at the beginning of his ministry; the one who saw the day of Adam's fall and Jesus's crucifixion as his ultimate triumph over humanity.

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<sup>15</sup> This is an anachronistic use of this term. Manifest Destiny is a 19th-century doctrine or belief that the expansion of the US throughout the American continents was both justified and inevitable.

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After feeling stuck again and needing an appropriate entry point into my intuition of this archetypal confrontation, I borrowed the main theme from the first movement of an earlier work called *Winter Solstice*, a horn concerto, and reintroduced it at this transitional moment of the third movement of the quartet. The original concerto movement was subtitled “The Darkest Hour” and the music represents just that. It is a five-note set (C, B, F-sharp, C-sharp, D-sharp)<sup>16</sup> which contains all interval classes except (notably) the octave. It first emerges from a “dark” place of “*sul ponticello*” lower strings playing in very low dynamics. It is presented repeatedly in canonic sequences and is soon joined by contrapuntal countermelodies. After finishing the composition of this movement, I looked back at this process and detected a consistent practice which had gone unnoticed during the composing phase. Due to the mechanical canonic presentation of this pitch set, the vertical convergence of pitches statistically tended to be non-harmonic, but every time the overlapping presentations of the pitch set and the additional contrapuntal lines converged on a three- or four-note chord denoting or suggesting common practice tonality, the moment was highlighted by either lingering on the sonority or resolving some of the concurrent dissonances into consonances. These moments are transient and, almost immediately, the larger gears of the canon take over and push the music through their tonally oblivious mechanical rotations. Once this tendency was noticed however, the metaphor was inescapable, at least to me. Even during the darkest hour of his Passion, as the machinery of Roman justice that led this most innocent of men to the Cross, Jesus minimized the faults of others, including his tormentors, while being mindful of the welfare of others, close and distant, such as his mother or a total stranger crucified next to him. He highlighted the consonances anywhere they could be found, even in the midst of the utter dissonance of that day. Voluntary suffering combined with forgiveness sends a strong message about karmic cause and effect and how to transcend it and repossess the Edenic body we all once enjoyed.

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<sup>16</sup> “The Darkest Hour” pitch set:



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A few moments later, however, the structure of the music becomes dismantled. The secure canonic structure collapses and is replaced by spasmodic and incongruous harmonic, motivic and dynamic shifts which dominate the music. The essential “dark” elements of the music of this movement (the twelve-tone tonal “mask,” the whole-tone chords and the tonal outbursts in unrelated keys) follow each other in rapid succession and create considerable tension and unpredictability, finally settling into an equally fleeting version of the D-minor “Beethovenesque” moment which initially represented Adam’s fall. In my mind this is the moment when the cogs of one’s earthly structure fall apart. In the last moments on the Cross, Jesus spirit departs before the body succumbs to physical death. In those brief moments the gospel accounts have Jesus look towards the sky and ask, “Father why have you forsaken me?” A moment later: “It is finished.” The spirit leaves earlier with all the body’s “information.” Left alone, the body only senses physical death and abandonment. It could not possibly know that its sacrifice meant its eternal preservation as something transmuted and imperishable. It could not fathom how cosmic victory can be snatched from the jaws of bodily defeat. The short D-minor dramatic theme ceases suddenly in an ambivalent diminished harmony and is followed by protracted silence.

The “Darkest Hour” pitch-set breaks the silence suddenly and loudly in four different octaves by all four instruments. Darkness, it seems, has won the day. Immediately afterwards and at a lower dynamic, this pitch set is seen under a different light. In each iteration, there is a two-chord conventional harmonic progression. The chords of each pair are related to each other but the pairs in different iterations of the pitch set are not harmonically related. It is as if, darkness has managed to segregate whatever harmonic relationships manage to develop in the small packets inside it and preclude a comprehensive harmonic connection across packets. Another four-octave statement of the pitch set leads to a triumphant arrival at an F-sharp. It is the pitch most distant from C-natural, which with its overtones has established islands of harmonic tranquility throughout this movement. This tritone interval, which in medieval symbolism represents the devil, is an apt metaphor for the contest between Christ and his adversary reaching its climax. There are several aggressive statements of the F-sharp unison trying to shut

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off quiet interjections of C and its harmonics. The harmonic pizzicato pitch and rhythm ratios of the very opening of the movement, appear again here during the brief pauses of the F-sharp violence. They feel like drops of blood from the Cross seeding the earth. Unperturbed, the F-sharp of the Deceiver reigns victorious. To him, the Crucifixion is a repeat performance of Adam's Fall in Eden and the Deceiver is celebrating his having overcome *again* God's chosen, who now lies dead on the Cross and soon in a tomb. The final statement of the F-sharp, with the bow pressure increasing against the strings and turning the pitch into noise, feels like the final cadence of this movement and of the quartet, however unearned, musically and otherwise.

After a protracted silence, the C and its harmonics quietly re-enter the sonic space. The tomb is gradually illuminated, brightening and expanding in four-dimensional space: a sonic resurrection emerging from darkness and silence. Gradually phasing minimalist patterns become discernible as the texture begins to teem with life. A final triumphant C-major tremolo brings the movement and the quartet to its true and final conclusion.