

A PEDAGOGICAL :

LEONARDO'S « THE LAST SUPPER » OR THE ART OF PAINTING BETWEEN THE NOTES

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by Pierre Beaudry

In his masterful piece {*On the Subject of Education*}, published on December 17, 1999, in EIR, Lyndon LaRouche shows how the principle of irony, in artistic Classical composition, such as was expressed by the great musician and conductor, Wilhelm Furtwängler, in the form of « playing between the notes », had been captured not only in Classical musical terms by the greatest composers of modern times since J. S. Bach, but also by Classical Greek sculptors like Scopas and Praxiteles, as well as Leonardo da Vinci, in his timeless masterpiece of {*The Last Supper*}. Relating to his early crucial discovery of 1948-1952, LaRouche recognized that such a discovery of Classical form of artistic principle, pertaining both to man and nature, was also conditioned by the discovery of universal physical principles in science. The real challenge, here, is to make the cognitive connection between a discovery of principle in a Classical art form, and a validated universal physical principle.

The discovery of principle of Leonardo da Vinci is pedagogically of momentous importance in this challenge, because it represents, as LaRouche identified, a unique example of a discovery of a validatable universal physical principle, in a plastic art form. This is the challenge that LaRouche has placed at the center of his education policy and that he considers to be of a unique type. We propose here to respond to the LaRouche challenge, and attempt to relive the discovery of principle of Leonardo, following the LaRouche method of « connecting the dots ». LaRouche wrote : « The central issue of this presentation, the focal point, is, « How should we connect the dots ? » With that focus adopted, the congruence of Classical art and science is made, quite properly, as immediate as possible. The Classical Greek development in sculpture, as compared with the same principle better expressed in Leonardo da Vinci's {*The Last Supper*}, typifies the intrinsic non-linearity of the connections which Classical art, like science, makes among the « dots. » » (EIR, December, 17 , 1999.)

A proof of this has been provided, in a negative form, by Rembrandt himself. The process of composition of Leonardo's *{The Last Supper}* drama is so unique, in the entire history of Classical art, that the Christian subject of « The Last Supper » itself came to be universally identified with Leonardo's fresco, and no other.

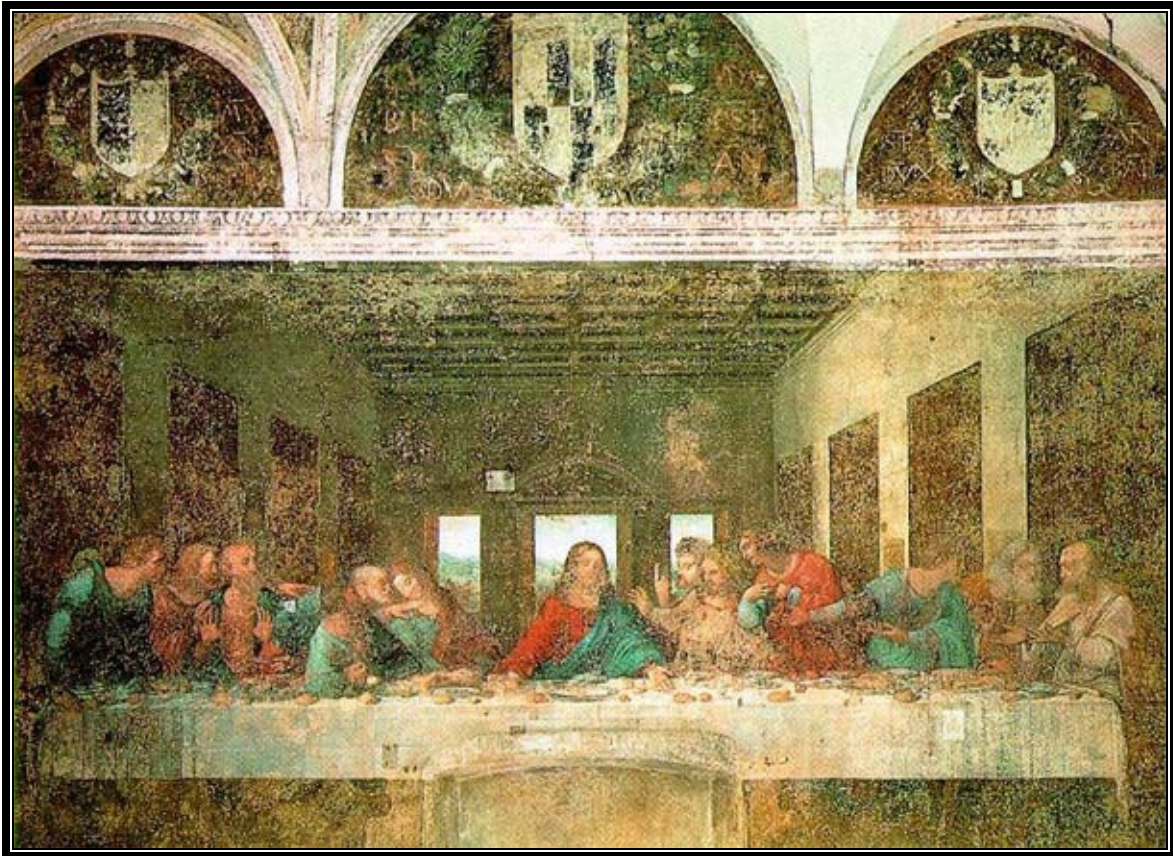


Figure 1. Leonardo da Vinci's *{The Last Supper}*.

In fact, when one says: « *{The Last Supper}*, » one does not think of the versions produced by Ghirlandaio, Dürer, or Rubens, but of the one painted by Leonardo. Rembrandt recognized that fact when he did his own drawing of Leonardo's *{The Last Supper}*. He copied the original version of Leonardo, as if directly from his mind, only to realize that his achievement had reached a level of thorough-composition of such absolute preeminence in Classical artistic composition, that he could not, himself, paint any other version of it. The reason Rembrandt did not paint his own composition of the same subject may have been precisely because he recognized that Leonardo had so truthfully mastered the art of « painting

between the notes, » that nothing could have been added, nor subtracted from it. So, what was it that Leonardo had accomplished in this masterpiece, which would be so definite that Rembrandt himself would not dare modify ?

First, since we are not all able to go on location, in Milan, let us look at a large quality reproduction of the entire scene, preferably with a group of students, as LaRouche recommended, and let's identify how {*The Last Supper*} represents a drama in which Leonardo has embedded a crucial discovery of universal artistic principle of Classical composition. As LaRouche pointed out, in many locations, you have to imagine yourself moving about inside of this large refectory room, where it is located, in the convent of Santa Maria delle Grazie, and relate to the fresco as a Classical expression of the {*living in-betweenness*} of the method of {*bel canto*} voice singing that Leonardo had been one of the creators of, in Florence.

Think of the discovery of principle of Leonardo as being an early form of a well-tempered musical Lydian modality applied to the domain of plastic arts. Leonardo applied in this fresco-painting the discovery of the very idea of the Italian Renaissance, that Nicholas of Cusa had been teaching in his political-theology, and which consisted in replicating the principle of the musical method of voice training called {*bel canto*} to plastic art, with the subject of the opening sublime moment of the passion of Christ. Imagine that the scene moving in front of you is a metaphor for a polyphonic chorus of twelve voices expressing Lydian modality of intervals in the way that LaRouche defined them for Classical thorough-composition.

As LaRouche demonstrated, Leonardo was among those who created the singing discipline of {*bel canto*}, whereby the principle of register shifts coloration of the six adult human voices became the basis for all future musical or plastic forms of Classical artistic composition, much in the way that Kepler, and Gauss after him, had discovered the significance of the asteroid belt « interval » of our solar system. The dissonances of the human voices which appear as willful anomalies, or paradoxes, as opposed to mere mistakes, as expressed in the {*St. John Passion*}, and the {*St. Mathew Passion*}, later developed by Bach, for example, were undoubtedly inspired from the same well spring source of genius as the visible dissonances of {*The Last Supper*}. A careful study of the underlying method of both the musical composition and the plastic art composition reveals the presence and the treatment of the same principle of generating well-tempered Lydian

intervals, or the « devil's intervals », as some of the superstitious Italians, like the evil Venetian Sorzi, called it during the Renaissance.

Next, identify the players of this drama. From left to right, centered around Jesus Christ, there are four groups of three apostles each: the first triplet, on the left, is represented by Bartholomew, James the Minor, and Andrew, the second is Judas, Peter, and John, the third group, to the right of Christ, is Thomas, James the Major, and Philip, and the last group, at the extreme right, includes Matthew, Thaddeus, and Simon. Now, look at this ensemble as a Classical composition of polyphonic counterpoint in which each individual reflects a different voice, that is, not only identifiable within each group of three voices, but each group of three cross-voices also carries a certain individuality of {*thoughtful-emotion*}, which each one reflects differently as if to form, with the other three, a body of thought, a {*Geistessmasse*} that Jesus Christ, as the subsuming central figure, internalizes by reflecting all of the voices in a unifying principle of the composition as a whole.

THE MUSICAL IDEA OF LYDIAN INTERVALS

The principle of Lydian intervals used by Leonardo in {*The Last Supper*}, is the same as the one used by John Sebastian Bach in his composition of the art of the fugue and more specifically in his {*A Musical Offering*}. It is the same principle which was later developed by Mozart, in his {*Fantasy K. 475*} for piano, and Beethoven's {*Sonata Quasi-Una Fantasia*}. As LaRouche demonstrated, all great Classical composers, such as Haydn, Mozart, Beethoven, Schubert, Shuman, Mendelssohn, and Brahms, have used the same principle of Lydian intervals of thorough-composition. (See Lyndon H. LaRouche, {*Politics as Art*}, in *Fidelio*, Spring 2001.) A simple exercise can give an idea of how to generate such Lydian intervals.

Take anywhere on a keyboard, which is tuned at C-256, any three successive tones, and start playing, from each one of them, intervals of minor thirds in an ascending manner, such that the progression takes you, say, three or four octaves up on the keyboard. With these three progressions only, you will cover all of the intervals of the well-tempered musical system. Then, in each case, invert the motion and play the same intervals, in a descending manner. Such geometric spiraling motions, ascending and descending will generate all slightly minor-dissonant intervals, which, when

projected onto a conical spiral, represent a partitioning of octaves into half, and half of the half : these dissonances all appear to be of equal division on the ascending and descending progressions, and are all associated with Lydian intervals which, when organized in the same key, or when leading to a naturally ordered set of changes of four different keys, for each of the three progressions, bring closure to the composition. It seems that a musical {*fantasy*} was ironically the form that was initially chosen by Mozart to express such a reality principle. When ordered in accordance with the register shifts of, say, the three adult male voices, creating tensions between them, the development of those three ascending-descending series of minor third progressions, into four keys each, will inevitably lead you to organizing a thorough-composition of resolved dissonances. During the late fifteenth century, an elementary form of such lawfully generating dissonances and tensions was invented by Leonardo with the method of {*bel canto*} in Florence, and this is how he organized the drama of {*The Last Supper*.}

What is unique about these intervals is that they represent a quality which permits you to change: that is, change keys within the system itself, and change lawfully the system itself by going beyond the twenty-four key system domain of Lydian intervals as such. One example of the limit beyond which the Lydian system can be brought to, are the late quartets of Beethoven.

THE SHOCK EFFECT AND LYDIAN INTERVALS

The question of the unity of composition of {*The Last Supper*} is really the very first thing to look for, if one is to understand the organizing principle of the painting at all, that is : how do you explain the explosion of emotions that Leonardo has painted in this dramatic scene ? The issue, here, is really: how do you relive the principle that masters and unifies all of the different emotions that Leonardo has portrayed in this apparent explosive chain-reaction? In a paradoxical way, the answer to these question can only come from understanding why Christ is so calm, while the apostles are so agitated. What could have happened to produce such an apparent opposite paradoxical effect between Christ and his disciples? If one does not first internalize the significance of these Lydian tensions, there can be no understanding at all about the discovery of principle that Leonardo had composed within {*The Last Supper*}.

So, we must begin to answer these questions by first examining Leonardo's paradoxical treatment of irony, that is, its underlying principle of Lydian composition. As LaRouche indicated, before the performance of a symphony, a great conductor, such as Furtwängler, is able to conceive of the entire composition as a whole, in his mind, in the flash of a moment, and see the entirety of the composition before his mind, including its completion, even before the first opening note is played. Leonardo used the same principle of *{thorough-composition}*. He organized all of the tensions and dissonances of the composition in his mind even before putting the first brush stroke on the wall. So, the great tension, or the great Lydian dissonance, must be born in the mind first. LaRouche summed up this type of process as follows: « Careful study of this work, along with Leonardo's documentation of the principles underlying its design, provides the teacher and students the advantage of experiencing this painting as a re-enactment of the discovery which Leonardo embodied in it. That makes the discovery itself a matter of the student's actual knowledge, rather than mere learning. » Now, let' unravel that re-enactment.

As Mathew recounts in his Epistles, the drama that Leonardo was recreating unfolded immediately after Christ uttered these very emotionally charged words before his apostles:

«{ « *Verily I say on to you , that one from among you shall betray me. » And struck by a profound consternation, each one of them asked him, «Lord, is it I? » He replied: « He who has shared this meal with me, shall betray me. The Son of man is leaving; as it has been written of him. But, woe betide he who has betrayed the Son of man ! That man would wish he had never been born. » } » (Mathew 26; 20-22)*

One must fully internalize these terrible truthful words in order to grasp the shock that these words must have produced within the assembly of the twelve. It is the very unraveling moment of that shock that *{The Last Supper}* is depicting. What Leonardo is conveying to the audience, in this sublime moment, is the experience that each of the twelve apostles must have lived at that time, as the truth of those words hit them, or as they were recoiling from it. Christ knew something that the apostles were perplexed in realizing they did not know. «{ ...*Lord, is it I ? }*» This is the perplexity which must accompany any great discovery of principle, and without which a so-called discovery would be a fraud. This is the dramatic life and death question, or the sublime and dramatic paradox that Leonardo endeavored to

create consciously as the exemplar of a discovery of principle for all Classical form of artistic composition.

The task of Leonardo was not merely to reproduce the mental anguish of the apostles, but to treat every single apostle as a dissonance by means of which a « well-tempered » composition could become a standard of truthful artistic composition, as a higher form of composition of resolving such dissonances. In other words, Leonardo was creating a revolution in which the series of expressive reactions, depicting each and every one's response as a visible form of the invisible state of mind of that « existential crisis », was merely a first level of representing their reactions from within each of their sub-groups. That in itself is not the subject of the painting. Then, the sub-groups have to be transformed into a higher domain, where the passing from a lower manifold to a higher manifold represented the resolution of their dissonances into the unity of the composition represented by the dramatic serenity of Christ, or the domain of the true reality of principles. That is the true intention of the work. This is to be conveyed by the position of their hands, the expression of their faces, and the behavior of their bodily manner, as a response to the stunning statement of Christ: that is, as if a shock-wave were to have come from the peaceful center where Christ is sitting, with his arms peacefully extended and his eyes lowered in the serene acceptance of what is to come, and had traveled simultaneously to the two ends of the long table, hitting every apostle differently, and resonating off of each of them, in a polyphony of dissonances ; all of whom are recoiling back to the spectator, in order for him to discover their multiple resolutions into the impassible shock absorbing and resolute Christ in the center. Like the drama of a Classical Shakespearean play, Leonardo's *{The Last Supper}* forces the spectator to relive this drama on the stage of his imagination, and come out of the experiment a better human being than he was before entering that experiment.

THE FURTWÄNGLER HANDS OF LEONARDO

Imagine Furtwängler's hands as he directs the orchestra at the precise moment when he summons the instruments to replicate a change in voice registration that the composer has written into the musical score. Study how he leads the instruments to sing like human voices, and relive that human emotion of phase change, only by the slightest motion of his hands, in the way that LaRouche had identified as the crucial characteristic of « playing between the notes. » A good conductor knows how to express such

singularities of a Classical composition by very specific movements and expressions of his hands, his face and his body. This is how he conveys to the musicians of the orchestra, or to the singers in the chorus, the moment when they should bring out, softly or dramatically, the emotional idea of change and transformation from inside the composition. Leonardo did the same thing with the intricate interplay of all twenty-four hands of the twelve apostles and of Christ, throughout the entire scene of { *The Last Supper* }. The well-tempering of Leonardo's hands, as if they were twelve « points » to be connected non-linearly, conveys, in the same way as Furtwängler's conducting does, the process of « painting between the notes. »

Take the four groups of apostles, one by one, starting from the left, and begin to discover this complex { *Geistessmasse* } of Lydian artistic composition. Thanks to some mental notes that Leonardo has recorded, himself, in his notebooks, we are able to confirm that Leonardo was, indeed, showing us how he was « painting between the notes. »

First, identify on the far left, the group of Bartholomew, James the Minor, and Andrew. Bartholomew is so shocked by the announcement that Christ just made that he sprang up on his feet, out of disbelief, and he put his two hands firmly on the table to better see if Jesus will name the name of who is to betray him. Or, is he so stunned that he is going into a flight forward? Next to him, James the Minor, with his right hand leaning on Andrew's right shoulder, as if to say: « Don't worry, » at the same time reaches out to touch Peter's back with his left hand, as if to inquire whether Peter knows about the culprit. This is the tension of « in-betweenness » of « painting between the notes ». Leonardo made a mental note, here, saying: « Another (Andrew) shrugs his shoulders up to his ears, making a mouth of astonishment, » as if to say : « I can guarantee you that this treason has nothing to do with me ! » Or, is he not rather saying: « Does Christ think that I could really do something like that? » What is the emotion here? Disbelief? Fear? Resentment? Denial? Something else?

Second, identify the group of Peter, Judas, and John. Start with Peter and note how his left hand is barely touching John's shoulder, while reclining towards him as if to whisper something in his ear like : « Of course he does not mean you. You are his most beloved from among all of us.» At the same time, Peter has his right hand firmly gripping a knife, which he has swung behind his back, as if to signify: « I am going to kill anyone who tries to harm Jesus. » Again, the « in-betweenness » of two different emotions, of

two different motions into one. Meanwhile, Judas is paralyzed with fear, and is in a state of total stupor, realizing that Christ has just put his case on the table, and he is about to be caught. Clinging to his treasonous decision, like a free-trader clings to his neighbor's social security fund, his right hand holds the purse he received for his treason, and his left hand is about to steal a piece of bread before he attempts to escape Peter's wrath, as he watches him from the corner of his left eye. Is he staying with the group or is he fleeing? Now, look at John. He is the inversion of the image of Christ. He is dressed the same as Christ, except the left and right colors and shoulder garments are inverted. His face is in a state of intense yet calm meditation, with his hands resting in a prayer-like fashion on the table, as if to reinforce the idea that he is the only apostle who has absorbed the shockwave of the announcement by internalizing with {*agapè*}, the suffering of Christ, himself. All three disciples of this grouping are complete dissonances and inversions with respect to one another.

The third group of Thomas, James Senior, and Philip is in complete turmoil. Here, the shock of the words « One of you shall betray me » has resonated in such a way that Thomas recoiled from his seat to stand behind James Senior and point the index finger of his right hand upwards as if to ask : « Do you really mean me, oh Lord ? » Or, is he asking, « Was this treason not prophesized? » James Senior, himself, is pushed by the shock against both Thomas and Philip, as he extends his arms and hands expressing his outrage and resentment that Christ could have made such a revelation: « Lord, do you really think I could ever be able to do something like that? » On the other hand, he could be thinking quite the opposite and say: «This is preposterous, never could I ever do something like that. » Philip is bending forward in a manner described by Leonardo as « morbidissimmo», a state of extreme morbidity which forced him on his feet to better hear what Christ is going to say next. All are unresolved, undecided, off-balance.

The fourth group of Matthew, Thaddeus, and Simon, has almost entirely folded back onto itself. At the right end of the table, Simon appears to be in total state of denial, as if he were saying: « This does not make any sense at all. This cannot be. How can this happen, in my own house? » And Leonardo wrote: « Another ...turns with stern brows to his companion, » as if Matthew were saying to Simon: « Stop blocking on this. You have heard what the Lord has just said. One of us is a traitor! » Thaddeus also seems to be reinforcing the statement of Matthew by saying to Simon: « Come on,

wake up! This is a tragedy! » Or, are they asking him, in a similar but opposite kind of tension: « Look, you are the master of the house here, call your servants to this table. Could it be that one of them is a traitor, even an assassin? » The situation is uncertain; it is like the inversion quality of the Hamlet question « To be, or not to be. » Every one is caught in mid-motion.

Now, think of this whole process as an organizing process in which each of the clusters of what could be called groups of *{thought-emotions}* are all expressions of a negation process, that is, a process in which LaRouche demonstrated how the paradoxes of Lydian dissonances negate the system in which they have been introduced. In each case of the four key groups of *{thoughtful-emotions}*, relating to the truth of the Christ statement, must find a reality principle in which they must stop negating and find a proper resolution. Since all of the four groups of apostles can be identified as negative clusters of *{disbelief, fear, resentment, and denial}*, each can only find its positive inversion by means of the principle of *{agapè}*, the only passionate way, as the character of John shows, in which it can be done. In an amazingly powerful way, Leonardo treated, in a Classical artistic form, the general process of negation and resolution by inversion of these neurotic distortions much in the same way that LaRouche has treated politically those modern forms of distortions that emerge in the creative process of organizing.

It is useful to note here, for clinical purposes only, that the professor of art history at the State University of Milan, Anna Maria Brizio, made the following comment about *{The Last Supper}* : « Like the hands, but in a more open and direct manner, the apostles' heads are all masterpieces of psychological and physionomical investigation. The details reproduced here, in the traditional grouping by three, clearly demonstrate the mode of composition of *{The Last Supper}*, which seems to arise naturally from the gestures and impetuous movements caused by the words of Christ. These various dynamic groupings enhance the interaction within each group and cause the strongest energy to surge towards the center of the fresco. » (*{The Unknown Leonardo}*, Edited by Ladislao Reti, Harry N. Abrams, Inc., Publishers, New York, 1988, p. 31.)

Here, we have a typical art critic who sees the right shadows and identifies them as being decisive, but the « dynamic groupings » are reduced to a typical Aristotelian misunderstanding of the Platonic idea of « power. » As a result, Brizio turned the most powerful aspect of the Leonardo

discovery of principle into a mystical form of « energy. » Her inclination may have been right, but her appraisal was wrong because she made the mistake of reducing the dynamic of the creative process to an academic Aristotelian idea of « energy » while, in reality, Leonardo is deriving his artistic conception from a real life Platonic notion of « power », that is, the power of love and justice, the power of {*agapè*}. Ultimately, what {*The Last Supper*} represents is that power of axiomatic change in the real world.

Now, let's look at the Lydian intervals between the groups. They are like changes of key signature in a musical composition. Think of them as LaRouche proposed, that is, as a proper way of « connecting the dots ». First, there is the key signature of the entire piece represented by Christ, who is isolated from the rest of the group in order to underscore the solitude of leadership and the silent acceptance of having to bear the sins of the world alone. « All of you will fail me! », he said to his apostles the next day. Then, the four groups of three are distinctly separated and united by transfinite emotional barriers. Each of those different keys must resolve all of their dissonances into the initial key signature of the piece.

Here, something very interesting is happening. It seems that the different individuals of each group are incapable of understanding what is happening inside the other groups, or as a whole. It appears that each apostle can only perceive his own dissonant reaction with respect to the group of three inside of which he resonates. Only Christ seems to be capable of having a sense of the totality of the event, which also includes the foreknowledge of what each and every one of his apostles will do in the garden of Gethsemane, during the Crucifixion, and during the Resurrection. In that sense, Leonardo had to mold all of the subtleties of {*The Last Supper*} in the same fashion that Wilhelm Furtwängler had to mold the execution of a Classical composition for a chorus and orchestra.

This is the effect of what LaRouche has identified as the power relationship of the individual voice to a {*field*} of change which can have a definite effect on the total outcome of the composition, in the form of an active potential of the Dirichlet Principle, but without really seeing how its role is integrated into that whole. The individual voice, within a chorus, can only hear the effect of the polyphony onto the local region of where he is performing from. I refer you to this note on Furtwängler that LaRouche recently wrote:

{For example, what conductor Wilhelm Furtwangler sometimes identified as performing between the notes. In a Classical polyphonic work of many performers, unlike the case of the accomplished string quartet, the individual performing voice does not hear the functional interaction of his or her own voice within the array of voices as a whole. What is heard is the impact of the polyphony upon the volume of the region in which the work is performed and heard. This is heard not as a collection of voices, but as a {field}, as I have identified the notion of a field in reference to the case of Kepler's principle discoveries and Dirichlet's Principle. The exceptionally able conductor, such as Furtwangler, hears the whole in a way which the performers do not, thus, seeing and shaping those subtleties which craft the effect of the field of the performed composition, in that acoustical setting, as a sensed indivisible whole. }» (Lyndon H. LaRouche, Jr., {SCIENCE : THE POWER TO PROSPER}. April 16, 2005, in Morning Briefing, Sunday, April 24, 2005.)

In other words, the unity of composition of *{The Last Supper}* does not represent, as art critics have wrongly asserted, a fusion between « reality » and the « fiction » of a three dimensional illusion, as if Leonardo had blurred the effects of discontinuity that exist between the two. What Leonardo executed was the « true reality of principles » behind the apparent world of the senses, that is, the principle of the *{bel canto}* Lydian modality, expressed in the mode of a Christian principle of organizing axiomatic changes that have the power of shattering the fishbowl domain of socially accepted public opinion. What he painted was the relationship between the visible behavior of human beings and the invisible principles unifying their reactions in the real world. This means that it is not the particular visible individuals that count, nor their specific « fishbowls », but the significant change of the intervals of their relationships, that is, how the apostles relate to one another with respect to Christ, their domain of principles. Such is also what LaRouche had identified as the social function of Classical music, Classical art, and Classical drama.

Thus, Leonardo's *{The Last Supper}* reflects as many paradoxes that form negating Lydian dissonances which have to be resolved, in a well-tempered form of « painting between the notes », in order to achieve the highest unity of thorough-composition.

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