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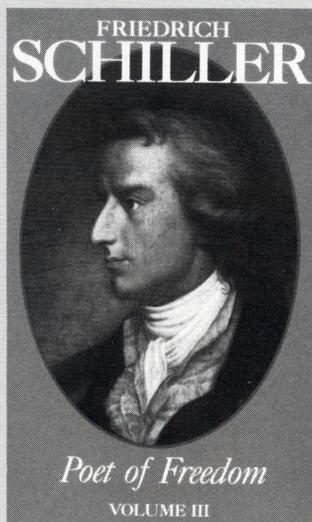
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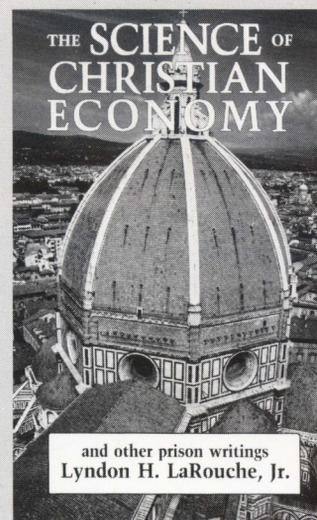
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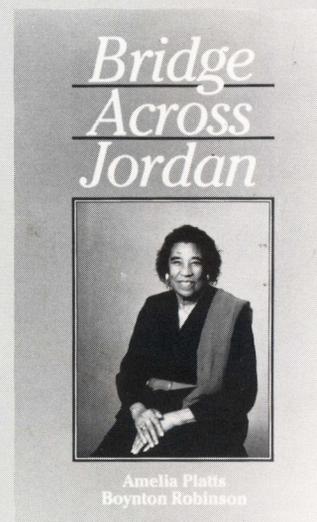
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FIDELIO

"It is through beauty that one proceeds to freedom."

—Friedrich Schiller

Vol. 1, No. 2 Spring 1992

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On the Cover
Schlüsselfelder Ship,
Nuremberg, c. 1503. The
ceremonial wine cup celebrates
the Age of Discovery.
(Germanisches National-
museum, Nuremberg.)

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The Classical Idea:
Natural and Artistic Beauty
Lyndon H. LaRouche, Jr.

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Steer, Courageous Sailor!

One indication of the cultural decline of our times is the degree to which Christopher Columbus' discovery of the Americas has become the object of a campaign of "politically correct" vilification directed ultimately at Christian civilization itself. Typical of this campaign are the comments of Hans Koning: "The year 1492 opened an era of genocide, cruelty and slavery. . . . What sets the West apart is its persistence, its capacity to stop at *nothing*. No other race or religion or non-religion ever quite matched the Christian West. . . . Columbus was but one frightening example of the corruption of unchecked power. . . . It is almost obscene to celebrate Columbus, because it is an unmitigated record of horror."

Contrast this anti-historical diatribe with the view expressed one hundred years ago by Pope Leo XIII in his encyclical *On the Columbus Quadricentennial*: "By his toil, another world emerged from the unsearched bosom of the ocean: hundreds of thousands of mortals have, from a state of blindness, been raised to the common level of the human race, reclaimed from savagery to gentleness and humanity; and, greatest of all, by the acquisition of those blessings of which Jesus Christ is the author, they have been recalled from destruction to eternal life."

As we shall demonstrate in this issue of *Fidelio*, contrary to those who denounce Christopher Columbus as a mass-murderer and reject European civilization as imperialistic, Columbus' exploit, which was inspired by his Christian faith, liberated the peoples of the New World from a barbarous state and extended to them the benefits of the Renaissance civilization of Europe.

To fully understand the significance of Columbus' 1492 voyage, it must be located in the context of the Council of Florence of 1439. At that council the Roman and Eastern Orthodox Churches were briefly reunited for the first time in nearly four hundred years, based on acceptance of the Western belief that the Holy Spirit proceeds not only from the Father,

but also from the Son. This concept, which is known in Latin as the *Filioque* ("and from the Son"), implies that all men are in the living image of God (*imago viva Dei*), and are capable, through the imitation of Christ, of participating in God (*capax Dei*). Moreover, since the Holy Spirit is Love, and the Son is the Word, man is called to works of charity based on reason.

The voyage of Columbus, which required advanced scientific knowledge of the laws of the physical universe, and which was motivated by a desire to bring salvation to mankind through evangelization, was thus a reflection of the *Filioque* concept affirmed at the Council of Florence.

Since at least the days of

Raymond Lull in the thirteenth century, leading circles in the Christian West understood that it was strategically necessary to outflank the stranglehold which the Ottoman Empire held over the Eastern Mediterranean, by developing a new route to the Orient. When the Turks captured Constantinople in 1453, the necessity of a strategic flank became even more imperative. Both the Portuguese effort to circumnavigate Africa as well as Columbus' attempt to reach the East by traveling due west, were thus a direct outgrowth of the strategic concerns which dominated the Florentine Council. And, as we show, Columbus received crucial scientific support for his endeavor from Paolo dal Posso Toscanelli, a close collaborator of Cardinal Nicolaus of Cusa, one of the key organizers of the Council.

Although not all Europeans who came to the New World lived up to the conception of man expressed at the Council of Florence, it is an undeniable fact that the Church made continuing efforts to do so, and that the abuses against the native populations, rather than being an expression of European Christendom, were the result of a contrary, anti-Christian orientation. Two immediate examples of the approach of the Church come to mind: First, Pope Eugene IV, who was Pope at the time of the Council of Florence, issued the first papal Bull condemning slavery. Second, Pope Paul III issued a Bull in 1537 which affirmed that

EDITORIAL

the native populations of the Americas could receive the sacraments because they, like the Europeans, *possessed reason*.

The concept of natural law underlying the Church's evangelization policy is expressed most clearly by Nicolaus of Cusa in his book *The Catholic Concordance*. In this work, written in 1433, Cusa developed the revolutionary thesis that, since by nature all men are created equal in power and freedom, and are endowed by God with reason, all legitimate governance can only come from the consent of the people and not from any coercive law or judgment contrary to reason.

Contrast this concept of humanity with that which prevailed in the New World at the time of its discovery by Columbus. As is amply documented in the article entitled "Who Really Killed the Aztecs?," the Aztec Empire was a cannibalistic slavocracy, an inherently self-destructive society.

Any honest reading of history, therefore, would have to conclude, based on the scientific concept of *potential relative population-density*, that it was Christian civilization which saved the indigenous peoples from extinction. Rather than respecting and developing all human beings as in the living image of God, the Aztecs sacrificed them to a plethora of gods in whose names they cut out their hearts, drank their blood, and ate their arms and thighs.

Contrary to the cultural relativists, who idolize such bestiality and denigrate Western culture as racist, Nora Hamerman demonstrates in her article on the Council of Florence, that the superior humanity of Western culture is nowhere better evidenced than in the great works of art which it produced during the Golden Renaissance, whose purpose was to elevate the mind of the viewer into harmony with the will of his Creator, thus freeing him to continue God's work by improving man's mastery over the rest of Creation. For as Lyndon LaRouche explains in "The

Columbus

Steer, courageous sailor! Although the wit may deride you,
And the skipper at th' helm lower his indolent hand—
Ever, ever to th' West! There *must* the coast be appearing,
Yet she lies clearly and lies shimm'ring before your mind's eye.
Trust in the guiding God and follow the silent ocean,
Were she not yet, she'd rise now from the billows aloft.
Genius stands with Nature in everlasting union,
What is promised by one, surely the other fulfils.

—Friedrich Schiller

Classical Idea: Natural and Artistic Beauty," in contrast to the Romantic or Modernist approach to art based on *eros*, the Classical approach of Christian humanist art is based on the love of God and mankind. Its purpose is "to bring forth the force of *agapē* to rule our minds and guide our actions."

In this year of the quincentennial of Columbus' voyage to the New World, civilization is again in need of a strategy for outflanking the enemies of mankind.

As Schiller Institute founder Helga Zepp-LaRouche stressed in a speech delivered on the occasion of the 550th anniversary of the Council of Florence, the primary task before us today is to realize *in our own time* the objective which motivated Columbus, the salvation of the human species based upon the concept of man elaborated at the Council.

It is our duty, following in the footsteps of Columbus, to contribute to the development of the peoples of the world and to free our fellow men from the barbarous state in which so many are still consigned to live today. And just as the discovery of the New World was the leading edge of the development of humanity in the fifteenth century, so we see in today's exploration and future colonization of space, the necessary means for mankind to lift itself above the earthly concerns of this our mortal life. It is with this spirit that we join Friedrich Schiller in his exhortation to the potential Columbuses on every continent: "Steer, courageous sailor!"



The Classical Idea: Natural and Artistic Beauty

by Lyndon H. LaRouche, Jr.

The strict usage of the term “classic” within the modern Western European tradition arises from former policies of education which placed the emphasis upon the Greek and Latin classics. “Classic” values signified reference to the idea of beauty associated with ancient, “classical” Athens. The models of the “classical” notion of beauty were centered around the image of the design of the Athens Acropolis and the expositions on the interrelatedness of the Good and the Beautiful found as central features of the dialogues of Plato (428-348 B.C.).¹

The strict Classical Idea was established in the Western European tradition through the influence of the writings of St. Augustine (354-430), including his *De Musica*. The relationship between Platonic notions of the Good and the Beautiful, and Augustinian Christian standards, was defined by St. Augustine in a famous letter citing the coincidence and differences between his

outlook and that of Plato.² The application of Augustinian principles of harmonic beauty by the twelfth- to thirteenth-century cathedral-building school of Chartres in France, is an outstanding example of the pre-Renaissance notion of application of the Classical Idea.

Provided we take those ancient Greek and medieval aspects of the matter into historical reference, the modern form of the Western European Classical Idea is associated with the Renaissance, including the influential work of Dante Alighieri (1265-1321) and such followers as Francesco Petrarca (1304-1374), but otherwise emphasizing the fifteenth-century and early sixteenth-century work of the Golden Renaissance, as typified by the influence of Cardinal Nicolaus of Cusa (1401-1464), Luca Pacioli (c.1445-c.1517), Leonardo da Vinci (1452-1519), Erasmus of Rotterdam (1469-1536), and Raphael (1483-1520).

In Western Europe, to the present day, the Renaissance expression of the Classical Idea was also generally known by the name of “humanism.” Unfortunately, in the English usages of this century, the term “humanism” has been stolen by the Ethical Union and its co-thinkers;

This article is excerpted from the Preface to the Institute’s “Manual on the Rudiments of Tuning and Registration.”

their "secular humanism" signifies an outgrowth of modern liberalism which is directly opposite to classical humanism in every sense. So, today, we are obliged to say "classical humanism," or "Christian humanism," to show that we mean something directly opposite to what popular opinion today knows as "secular humanism."

Renaissance humanism, as typified by its principal authority, Nicolaus of Cusa, signified, among other things, that there is nothing in the universe of human experience which is not potentially intelligible to an individual human mind, nothing which is not potentially susceptible of intelligible representation in the strictest sense of intelligible scientific representation.

On that point, Nicolaus of Cusa and Plato agreed. For classical Athens, beauty was not a mere matter of differing tastes; the quality of being beautiful, or ugly, is a decision subject to rigorous scientific verification. The Golden Renaissance, especially through the Milan collaboration between Luca Pacioli and Leonardo, re-constructed rigorous geometrical proof of this classical Greek principle. From the spread of the influence of this proof, there developed what we rightly identify as the modern Classical forms of music, painting, architecture, drama, and poetry.

The Classical Composers

By Classical music, we signify the work of a series of eighteenth- and nineteenth-century composers, beginning with Johann Sebastian Bach's (1685-1750) establishment of the well-tempered system of polyphony, and continuing through paragons such as Wolfgang Mozart (1756-1791), Beethoven (1770-1827), Schubert (1797-1828), Mendelssohn (1809-1847), Chopin (1810-1849), Schumann (1810-1856), and Brahms (1833-1897), through the 1890's.

We should also include those predecessors of Bach, including his immediate musical ancestors of the seventeenth century, who, from the time of Leonardo da Vinci, fought to establish a Classical music based on perfection of an effort aimed at producing a well-tempered system. We must also include the known history of what we call today the *bel canto* method of voice-training and singing.

Stone sculptures of singers from the fifteenth century demonstrate conclusively that the *bel canto* system was fully developed at that time, and doubtless earlier (SEE Figure 1).

We must distinguish between the musicians in this Classical tradition, and those composers among their contemporaries who fought to eliminate the Classical tradition. Claudio Monteverdi (1567-1643) was such an

anti-Classical composer, whose approach to composition and choice of musical themes prefigures the nineteenth-century Romanticism of Liszt (1811-1886) and Wagner (1813-1883). The nineteenth-century Romantic composers lived and worked during the same time as the Classical tradition was practiced by such exponents of the Classical tradition as Mendelssohn, Chopin, Schumann, Verdi, and Brahms.

During the period of Bach's last years at Leipzig (Bach served as cantor of St. Thomas's school and music director in Leipzig from 1723 to 1750), the House of Hanover and other elements of a faction then known as "the Venetian Party"³ sought to obliterate Bach's music and influence from the memory of mankind, to the effect that Bach's compositions were not permitted to be performed in European concert halls until Felix Mendelssohn broke the ban, by performing Bach's *St. Matthew Passion* at Berlin, in 1829. Against Bach, the Hanoverian faction held up as a model the trivial figure of Rameau (1683-1764).

Despite the ban against the performance of Bach's compositions during the period from approximately 1750 until Mendelssohn's famous 1829 concert, Bach shaped the development of the Classical field. Beethoven virtually teathed upon Bach's "Well-Tempered Clavier," under the instruction of one of Bach's leading students, Christian Gottlob Neefe (1748-1798).

Wolfgang Mozart underwent a revolution in the profundity and power of his composing after 1782 studies of Bach's work. Although the powerful Venetian faction had banned Bach's music from the concert stage, Mozart and Beethoven defined Classical composition on the basis of their own studies and use of Bach's discoveries.

The influence of Marxist and kindred social theories of art among musicologists and others, has produced the popularization of a doctrine to the effect, that modern composers belong to successive periods of musical mannerisms and tastes, such as the Baroque, Rococco, Classic, Romantic, and Modernist. The spread of this social theory has been perhaps the chief reason the majority of modern professional musicians no longer grasp some among the most rudimentary features of principles of classical musical composition.

It is usually assumed that the "Romantic Period" erupted on the European continent during the period of the 1815 Treaty of Vienna and the anti-Classical Carlsbad Decrees. For that reason, all leading composers after 1827-1828 are not only classed as representatives of the Romantic Period; in most instances of what passes for standards of performance of the musical repertoire today, the works of strictly "Bachian" composers such as Schubert, Mendelssohn, Chopin, Schumann, and

Brahms are interpreted in a way more or less appropriate for Berlioz (1803-1869), Liszt (1811-1886), Wagner (1813-1883), and Hugo Wolf (1860-1903).

The cleanliness, meticulous shaping of tone, “long-line” phrasing, and contrapuntal voice transparency, essential for the classical composition, are more or less abandoned, and the performance inundated with thick blobs of sentiment and Romantic mannerism instead.

So, the historical fact is, that during the entire period from the time of Leonardo da Vinci through the death of Brahms, composers, performers, and musicologists committed to the Classical Idea in music constituted a more or less widespread and powerful faction within music. During this span of time, there were no distinct periods of such a nature that some ruling Hegelian sort of musical spirit of the age—an Hegelian *Weltgeist* or Savigny *Zeitgeist*—was a characteristic feature of the work of the musicians generally.

To the degree there might seem to be any justification at all in use of terms such as a Baroque, Classic, Romantic, or Modernist “Period,” this merely signifies that one of the contending political factions within music enjoyed the upper hand in terms of backing by powerful patrons. The hegemony of the “Bachians,” such as Mozart and Beethoven, during the 1763-1815 period of the rising influence of the American Revolution upon Europe, represented the Classical faction in music at the relative peak of its political power. The Romantic movement in music derived its power from the anti-American forces at the center of the Holy Alliance.

The same is true of other aspects of the fine arts, including painting, architecture, drama, and poetry. The increasing patronage of Romanticism and, later, Modernism, is associated with a rise of irrationalism in political movements as well as in artistic fields. As the political power of wealthy patrons of these irrationalist movements in art was increased, and as irrationalist radicalism was spread more and more throughout the populations, the representation of the Classical musical composer on the concert stage, and in the teaching institutions, was diminished. Although works from the Classical repertoire continued to be performed, the standard interpretation of those works was shifted in a way more or less satisfactory to the sentimental, anti-polyphonic irrationalism of, initially, the Romantics, and, more recently, the Modernists.

The means by which Classical music was so undermined were purely political ones, such as the shift from the well-tempered C=256 Hz to the Russian bandmasters’ A=440 Hz, decreed as a purely political decision during the 1815 Congress of Vienna. At the same time that the Romanticism of Liszt and Wagner was pro-

moted against Beethoven’s influence, there were also direct efforts to obliterate those strict standards of tuning and vocal registration the which lie at the center of the methods of Classical composition and performance.

In the effort to destroy the tradition of Classical music from within, three chief lines of attack were chosen. The first, was a direct attack on well-tempered harmonics, by aid of introduction of “elevated pitch,” beginning with the political decrees demanding that C=256 be replaced by A=440. The second was the imposition of new standards for construction of the musical instruments. The third, was a manifold attack upon principles of *bel canto* singing. That threefold attack has become more or less successful, at least to the extent that the Classical standards and principles in these matters are the knowledge of but a tiny minority among professional musicians and music curricula today.

Natural and Artistic Beauty

Classical Aesthetics is centered around strict definitions of what ought to be intended by use of the terms “natural beauty” and “artistic beauty.”

By *natural beauty*, we mean the principles of beautiful forms as they occur in nature. In music, this includes the well-tempered system of polyphony, which has been discovered by man, but which was created entirely by nature, not the artificial whims of musicians. We include as *natural beauty* the potentialities of the *bel canto* singing voice.

By *artistic beauty*, we mean an artistic composition which never violates the principles of *natural* beauty, but which adds a new dimension of beauty, produced by the creative mental powers of the individual mind of man.

In Classical Aesthetics, we insist that the quality of beauty—both *natural* and *artistic*—is not a matter of taste. The statement, “Well, in my opinion, it is beautiful, and my opinion is just as right for me as someone else’s taste is for them,” is not tolerated. There must be an absolute, scientific proof, that one principle of artistic composition is consistent with the quality of beauty, and that a contrary view is scientifically wrong.

The best exponents and examples of classical Athenian culture, already demonstrate a clear understanding of this point. They recognized that there is an absolute standard of beauty, by which we are permitted, and implicitly obliged, to say that one thing is beautiful, and a contrary thing called art, ugly. They struck upon the right approach to discovering that standard, a standard which can be demonstrated with scientific certainty, to the effect that we can show not only whether one person’s idea of beauty is right, or not, but that a contrary



FIGURE 1. Bel canto method of signing, as illustrated in the marble relief panels of the choirstalls in the Cathedral of Florence. Sculpture by Luca della Robbia, 1431.



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opinion is wrong.

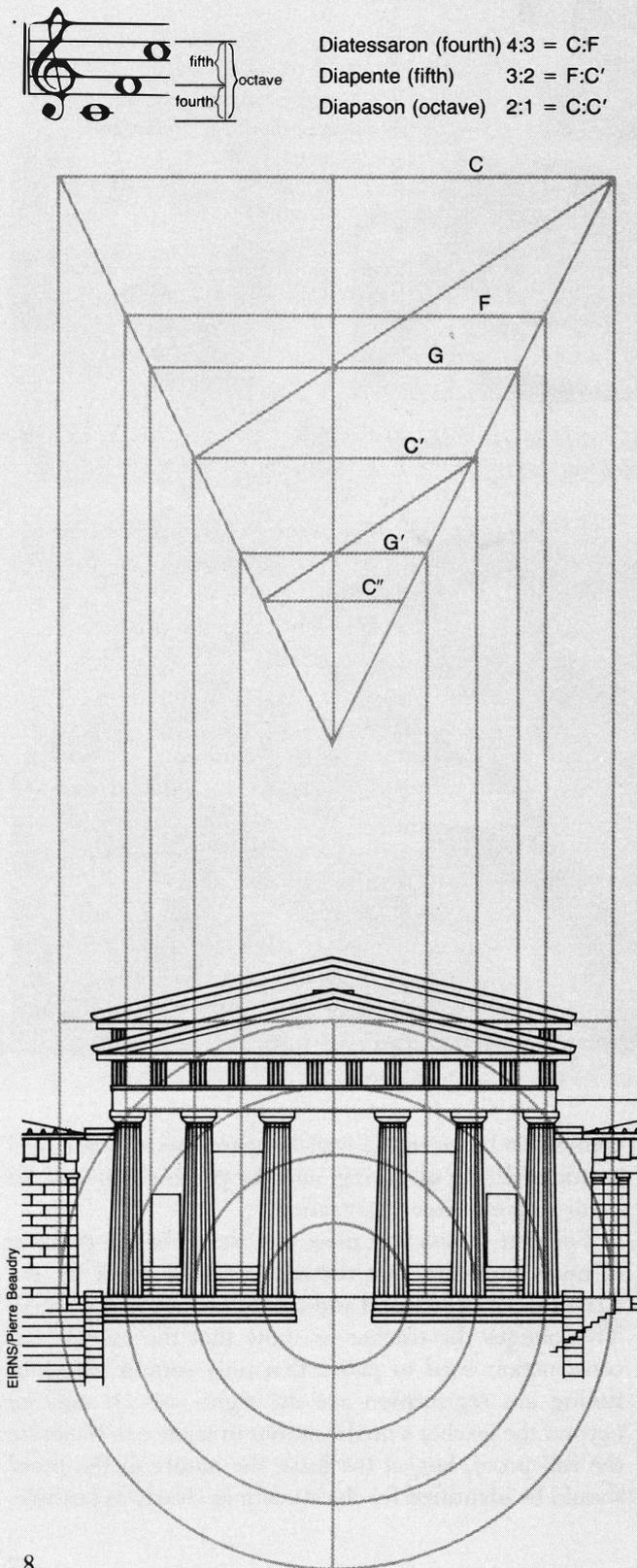
The classical Athenians already understood, with fair accuracy, that this scientific proof is based on a certain kind of use of a special kind of geometric construction, a form of mathematical practice sometimes identified as "synthetic geometry." In other words, the proof of the quality of beauty is a measurable proof, provided we first understand the special principles of measurement required.

Those principles of measurement are the foundation for the proof of the strict standards of the well-tempered system, and are also the basis for showing the necessary

connection between the well-tempered system, as a harmonic ordering of tuning, and the precise values of *bel canto* singing-voice registration.

For that reason it is most important for the training of music students, that the nature of the proof for the Classical Idea of natural and artistic beauty be presented. This obliges the teacher to show that the methods of construction used to prove that only certain values of tuning are registration are the right ones. It may be beyond the teacher's qualifications in science to elaborate the full proof, but, at the least, the nature of the proof should be identified for the student as clearly as possible.

FIGURE 2. The method of "synthetic geometry" formed the basis for the design of the fifth century B.C. buildings of the Acropolis. The west elevation of the Propylaea, shown here, is a composition of mixing the ratios of 2:1 (the octave), 3:2 (the fifth), 4:3 (the fourth), and the Golden Section.



One of the clearest examples of the force of the Classical Idea within ancient Athens, is the design of the Acropolis (SEE Figure 2).

The geometric exposition of this principle of beauty of form is included within the dialogues of Plato. The modern exposition, and further development of the principle, is traced to the work of Pacioli, Leonardo, and their collaborators, a project based directly upon the discoveries of Nicolaus of Cusa in the field of what is called "synthetic geometry" and in the stipulation of the principles of modern physical science.

The classical Greeks already understood that the quality of beauty is located in that which represents the essential distinction between healthy forms of living processes and non-living objects.

This is based on the simple observation, a fact verified in every case, that all living processes have a characteristic harmonic ordering in their morphology of form, and that non-living processes have a different characteristic ordering. This is the most elementary of the measurable differences between living and dead processes. In mathematical physics, we say that the former orderings are characteristic of *negentropic* processes, and the latter of *entropic* ones.

Essentially, life is beautiful, and the quality of deadness in human existence is ugliness. The Athenians recognized that beauty of form is associated with certain harmonically ordered constructions based upon the sectioning of circular motion. In Plato's dialogues, it is emphasized that all beauty of form, including that of music, is congruent with harmonic orderings cohering with the Golden Section of circular motion.

Pacioli, Leonardo, and their collaborators demonstrated, that all healthy living processes have these distinctions. The morphology of growth of healthy living processes is congruent with an harmonic ordering consistent with the Golden Section; the bodily functions of motion are also congruent with the same harmonic ordering. Work over the centuries since Pacioli's famous *De Divina Proportione* (1508), has strengthened the evidence in support of this proof.

These principles, taken together with the methods of scientific thinking earlier elaborated by Cusa, were the basis for Leonardo da Vinci's encompassing genius in the physical sciences and as a scientific pioneer in painting, sculpture, architecture, and music. One of the principal outgrowths of this accomplishment was the school of Raphael.

Between the period of Plato's Athens and the fifteenth-century Renaissance, the well-tempered musical system of Athens was carried a step further, by the famous Islamic philosopher al-Farabi (c.872-950). Al-Farabi elaborated an equal-tempered approximation of

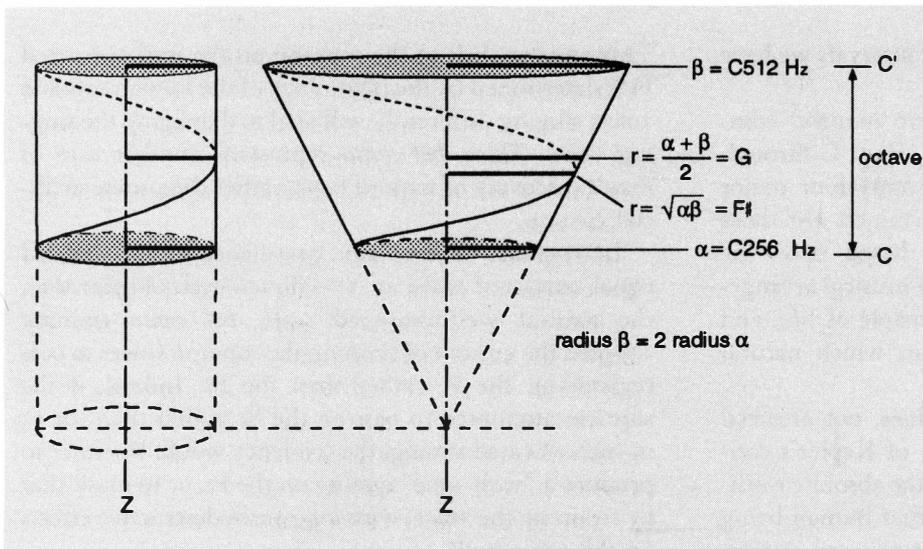


FIGURE 3. Simple spiral action in the complex domain (left) is cylindrical in form; at one-half rotation, the distance moved along the vertical z-axis is one-half the distance moved along the z-axis by a full rotation. The radius at one-half rotation is the arithmetic mean $(\alpha + \beta)/2$, which divides the octave at the fifth, or the movement from C to G. In self-similar spiral action (right), the radius at one-half rotation is the geometric mean $\sqrt{\alpha\beta}$, corresponding to the movement from C to F#.

the values of a well-tempered octave scale. It was al-Farabi's work, carried into Western Europe, which contributed a leading part in establishing the octave form of well-tempered scale.

After the work of the circles of Pacioli and Leonardo, the most important next step of progress in the perfection of this aspect of the Classical Idea were the contributions of Johannes Kepler, the founder of astrophysics, and, in fact, the founder of modern mathematical physics as a whole. As Kepler writes, his work in music, in the creation of the root-conceptions of modern topology, and his astrophysics, were premised chiefly on the preceding work of Cusa, Pacioli, and Leonardo, as supplemented by some very important work by Albrecht Dürer.⁴

In examining Kepler's work on the well-tempered system, we must separate the particular values which Kepler supplies for the principal harmonic intervals of the well-tempered scale, from the method of hypothesis he employed to produce these results. As Kepler himself specified, to define more correct values, both for astrophysics and music, certain specific advances in mathematical physics must be developed to perfect his own hypothesis.

Kepler specified the requirements of a differential calculus, a task undertaken by Blaise Pascal (1623-1662) and completed by Gottfried Leibniz (1646-1716). Kepler also specified the need for an adequate method of geometric determination of the values of what are called elliptic functions. The problem of defining elliptic functions was solved in principle at Germany's Göttingen University by the beginning of the 1860's, chiefly by the successive work of Carl Gauss (1777-1855) and Bernhard Riemann (1826-1866).

By employing today the advantages of the work of such leading nineteenth-century mathematical physicists

as Gauss, Lejeune Dirichlet (1805-1859), Karl Weierstrass (1815-1897), and Riemann, we are able to derive the correct values for the well-tempered system in the most rigorous and conclusive way.

The harmonic orderings of the well-tempered system, centered upon well-tempered values for the minor third, major third, fourth, arithmetic-geometric mean, geometric mean, and fifth, are identical to the correct values for astronomy, and are congruent with the Golden Section. Kepler was correct as far as he had progressed in detail; the modern Gauss-Riemann physics of the complex domain permits us to provide the corrections in method and values in a rigorous and conclusive way (SEE Figure 3).

In the well-tempered system, we begin with the harmonic intervals of the minor third, major third, fourth, fifth, and the Golden Mean (F#), and with the derived distinctions between major- and minor-key harmonic progressions constructed in this way. We are able to construct twenty-four major and minor keys, and their appearance as scale-inversions, in this way.⁵

To construct the system in first approximation, it is sufficient to take the tone of the key of C-major or C-minor which lies on the minor third, major third, fourth, Golden Mean, and fifth, as the tonic tone of a new major or minor key, and to construct the minor and major thirds, fourth, Golden Mean, and fifth for that key signature, as we construct such harmonic progressions for C-major and C-minor.

Our first construction of the harmonic system, begins from middle C = 256. We refine this construction, by going to C above middle C, C' = 512. We repeat the first approximation, in determining the intervals of a minor and major third, fourth, geometric mean, and fifth, reading downward, from C' to C. We repeat this for each

of the key signatures whose harmonic intervals we have defined by the first approximation.

By these combined efforts, we have mapped completely each of the thirteen half-tones, from C through C' in the well-tempered system of twenty-four major and minor keys. The values so determined are those congruent with harmonic orderings based upon the Golden Section. Hence, this is the only musical arrangement which is coherent with the principle of life, and thus the only musical arrangement in which natural beauty is possible.

All of these values are natural values, not artificial ones. The Gauss-Riemann correction of Kepler's construction shows that these values were the absolute musical values of our universe before the first human being existed. Man did not create the well-tempered system, any more than man created gravitation; man discovered both, correcting his error of not recognizing these natural laws earlier.

The basic values of *bel canto* vocal registration have the same quality of natural beauty. What we call *bel canto* voice-training is not some arbitrary system of singing; it is man's discovery of the natural qualities of the human voice's potential for singing.

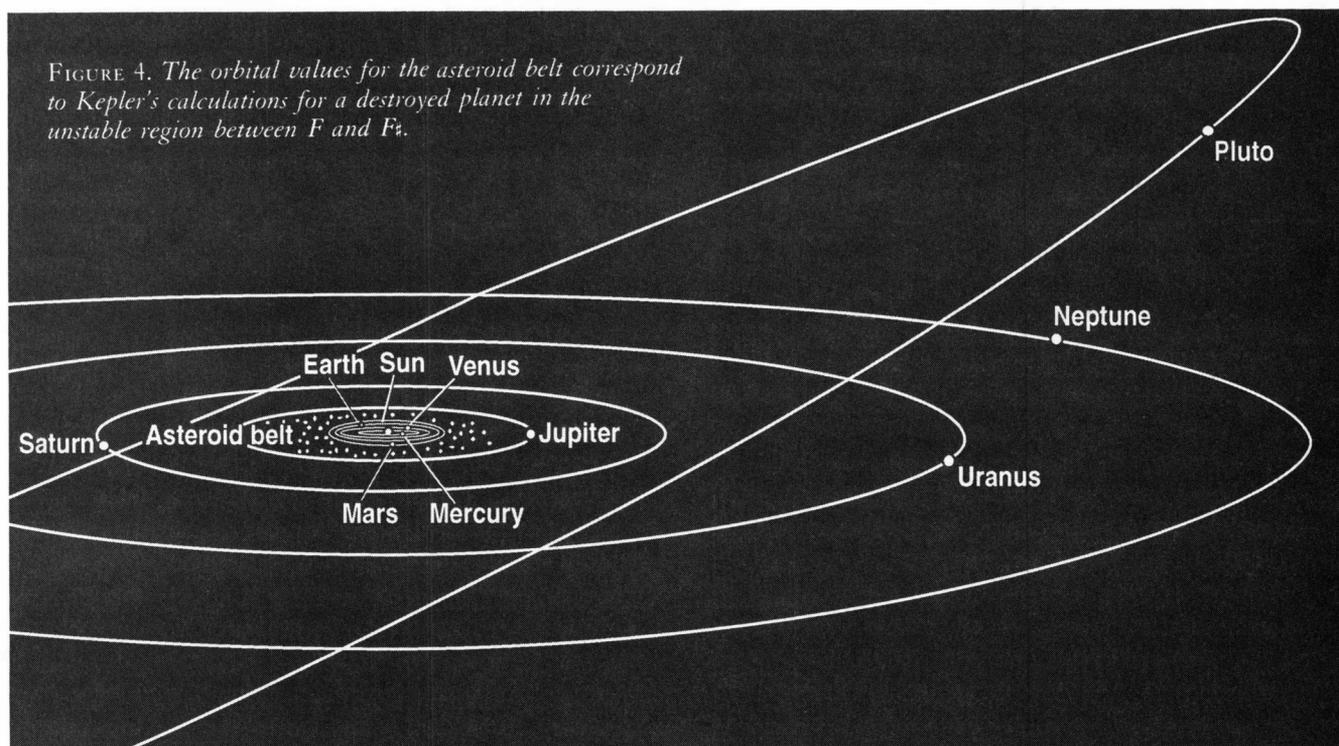
The simplest example of this is the way in which the soprano voice naturally sings in a different quality of voice, in singing the F of the well-tempered system (at C=256), as opposed to singing the next half-tone, the F#.

This register shift of the soprano on the well-tempered F# is determined by the physiology of the human soprano voice; singing differently will lead to damaging the singing voice. Thus, *bel canto* represents another case of man's discovery of natural laws, rather than some artificial custom.

In response to the later prevalence of an elevated equal-tempered scale, at A=440, ten cycles higher than the natural well-tempered scale, *bel canto* training adopted the custom of training the soprano voices to pass register on the F, rather than the F#. Indeed, if the soprano attempted to pass on the F#, rather than the F, in such elevated tuning, the tendency would be either to produce a "wolf-tone" quality on the F#, or to mask that by straining the voice, with long-term destructive effects on the voice itself.

However, the actual absolute pitch at which the soprano register-shift naturally occurs, is the same in both cases. In the well-tempered system at C=256, the discontinuity between the registers occurs not on either the F or F#, but in the no-man's land inbetween. Thus, in elevating the pitch, from A=430 to A=440, the issue is not that we have shifted the scale less than a half-tone of the equal-tempered scale. The issue is, that the elevated pitch places the F, which is below the discontinuity between registers in C=256, above that discontinuity.

If we set the sun of the solar system at C, according to scalar values based upon the distances of the planets



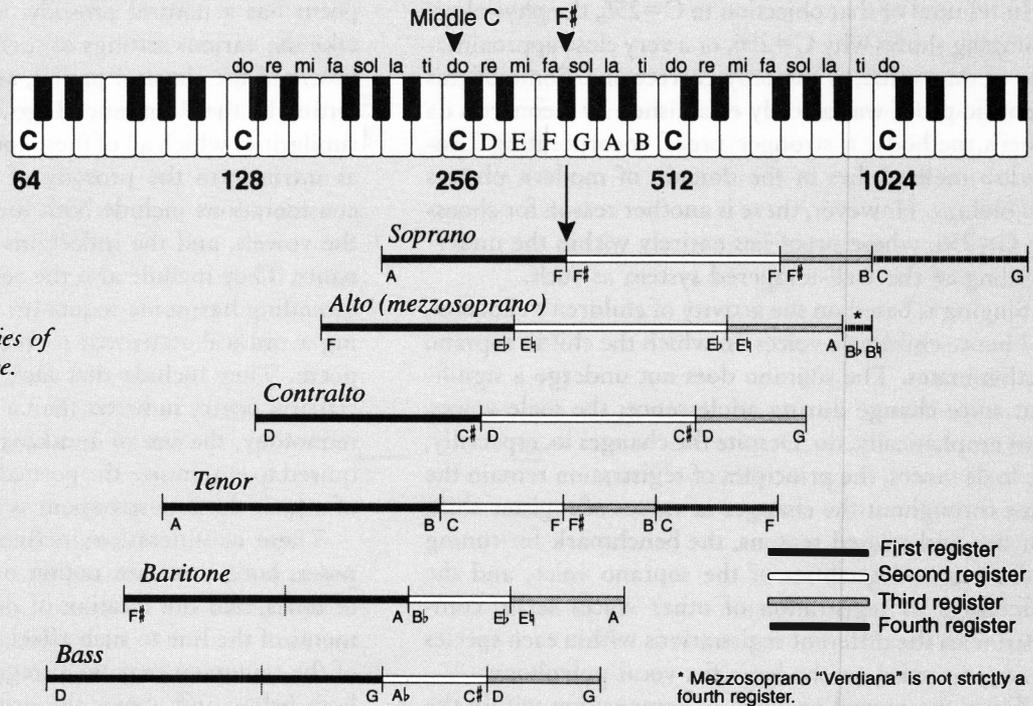


FIGURE 5. *The six species of the human singing voice.*

from the sun, or at F according to scalar values based upon the angular velocities of the planets, in both cases, the asteroid belt lies between the values of F and F#. This doubly-connected conical musical function, according to Kepler, is the reason that, although the solar system requires the existence of a planetary orbit in this location, the planet in that orbit must have been destroyed. Kepler supplied the correct orbital harmonic values for this missing planet, which Gauss proved to be the true orbital values for the asteroids Ceres and Pallas first observed at the turn of the nineteenth century, nearly two hundred years after Kepler had insisted on a destroyed planet with those orbital values (SEE Figure 4).

In astrophysics, the region so defined as lying between F and F# is a zone of harmonic discontinuity, separating the dense inner planets of the solar system from the gaseous outer planets of the second series. In Kepler's astrophysics, the existence of a necessary planet within such a region of discontinuity ensures the destruction of that planet.

The values for the various register shifts of the tenor have zones of agreement and disagreement with the soprano, but the principles of all voice-register shifts are the same, despite the differences in the tonal values at which they occur. The various species of voices, soprano, tenor, mezzosoprano, baritone, contralto, bass-baritone,

and so forth, form a tonal series, a series which is the basis for natural vocal polyphony (SEE Figure 5).

The hoaxster Helmholtz, who wrote his *Sensations of Tone* as a ponderous assault on both the well-tempered system and *bel canto* singing, makes much of the highly varied tuning of organs existing during the eighteenth century. However, Bach himself resorted to the obvious expedient of adjusting the organs with which he worked, and transposing the quoted keyboard key to coincide with the well-tempered tuning at the C=256 which had been standardized in France and Germany at that time. The construction of the best string instruments and woodwinds, during the seventeenth and eighteenth centuries, and the parallel standards of construction of the best stringed keyboard instruments, is a fact which Helmholtz slyly evades. Typically, these instruments were designed to be resonant at values of C congruent with C=256.

During the nineteenth century, as constructions of musical instruments were altered to accommodate A=440, and keyboard instruments redesigned to suppress polyphonic characteristics of the Classical ones, there was an attack upon C=256 standards as being purely arbitrary. It was argued, in effect, "You have chosen C=256 merely because it was a simple power of the number two. There is no reason any other tuning

which pleases us is not as valid, or even more valid than $C=256$."

In rebuttal of that objection to $C=256$, the physiology of singing shows why $C=256$, or a very close approximation of that value, is the only correct one. Some of this scientific proof was already established by Leonardo da Vinci's methods; a stronger proof, incorporating Leonardo's method, lies in the domain of modern physics and biology. However, there is another reason for choosing $C=256$, whose proof lies entirely within the understanding of the well-tempered system as such.

Singing is based on the activity of children's choruses, and hence children's voices, in which the child's soprano predominates. The soprano does not undergo a significant voice-change during adolescence; the male voices, most emphatically, do. Despite the changes in, especially, the male voices, the principles of registration remain the same throughout the changes in values of register-shift. For this and related reasons, the benchmark for tuning is the registral qualities of the soprano voice, and the differences in registration of other voices serve, combined with the different registrations within each species of singing voice, as the basis for vocal polyphony.

Thus, the central problem of composition within the Classical repertoire, is the way in which soprano register-passage coincides with the pitch of the well-tempered system. If the soprano register-shift occurs on the F required by $A=440$, a disharmony is introduced to the Classical repertoire. The principles of counterpoint require that the F lie within the relatively lower soprano register, and the $F\sharp$ be located in the relatively higher register.

For example, in the vocal repertoire of Mozart and Beethoven, the soprano's F must lie in the relatively lower register, and the $F\sharp$ in the relatively higher one. This is required for two principal reasons. The most obvious reason, is the well-tempered system, which requires the same *natural* division of the octave scale, in terms of quality of registration, as Kepler's planetary harmonics. The second is peculiar to the prosodic aspects of the songs of those two composers, in particular. If the register shift is on the F, the soprano will naturally sing the song wrongly from a poetical standpoint.

Throughout the classical vocal repertoire, through such examples as Brahms' "Four Serious Songs," the composer has written the composition for a specific species of voice in a key chosen for this purpose. In this example, either the bass or contralto. If one attempts to transpose this song to a different key, for the purpose of employing a different species of voice, the relations within the domain of the vocal-instrumental counterpoint of the keyboard part fall apart to a significant degree.

A Classical composer approaches the construction of a song in more or less the following manner. The classical poem has a natural prosody, to such effect that if we take the various settings of such poems by various composers of the classical period, and compare these with a setting by the Romantic Hugo Wolf, we observe certain similarities which all of these composers have recognized as intrinsic to the prosody of the poetry itself. These considerations include both the relative tonal values of the vowels, and the inflections of the vowels by consonants. They include also the requirement of combining ascending harmonic sequences and inversions, in defining a musical statement corresponding to a line of the poem. They include that fact, that in the recitation of classical poetry in better than a sing-song sort of tedious monotony, the use of speaking-voice registration is required to emphasize the posited and apposite conception of which the line-statement is formed.

These considerations define, for the Classical composer, both a certain notion of harmonic progressions of tones, and the location of divisions of musical statements of the line to such effect that one or more portion of the statement may lie in registers below, or above, or both below and above, the principal register of central reference.

To satisfy these combined requirements of the poem's musical setting, once the composer has chosen a certain species of voice for this song, and chosen between a minor and major harmonic sequence of utterance, the composer is obliged to choose a definite key signature, which divides the registration of the sung line as required. This is the most important consideration in choosing a key signature for a vocal composition.

Thus, as we have already noted the significance of the soprano and tenor voices as the pivotal point of reference for well-tempered composition, it is of the greatest importance to the composer, that the soprano register-shift occur on the $F\sharp$.

Hence, the elevation of the well-tempered scale which places the soprano register-shift so, is the only *natural* tuning for the composer. Hence, Mozart required tuning of A between 427 and 430. A value of 430.5 is the calculable upper limit for A; $A=427$ defines the lower limit of a comfortable soprano register-passage on the $F\sharp$. If the composer estimated in terms of equal-tempering, he would tend to choose the point of discontinuity between the two registers at a quarter-tone distance between F and $F\sharp$. A well-tempered keyboard tuning scaled to $C=256$, or A between 427 and 430, would fit the requirements for all species of singing voices comfortably.⁶

The grounding of the musical education is in the development of the singing voice. Pre-school-age chil-

dren learning to sing with their minds set at an habituated “perfect pitch,” based on $C=256$, is the normal foundation for a musical population from which all composers and performers, amateur and professional, and audiences, are best drawn. It is such early foundation in singing which establishes music as a native language of the population.

The development of the Classical musical instruments, especially since Leonardo’s work on this, has been governed by construction of instruments which imitate the natural qualities of the properly trained singing voice. One attempts to cause the strings and woodwinds to sing *bel canto*, and approaches the shaping of keyboard instrument’s enunciation of tones and phrasing of tones to the same effect. And, so on. (SEE Figure 6)

The instrumental ensemble is a product of vocal polyphony. The significance of this is rather readily demonstrated by music students. In writing of simple canonical exercises, choose specific species of singing voices, with regard to their natural register-shifts. The differences in progressions, with respect to register-shifts, among the voices, define the way in which the various species of voices might be placed with respect to one another, and the difference in results effected by substituting different species of voices for each assigned part. By creating musical instruments which imitate such species of voices, by virtue of their constructions, or by string instruments which can simulate the registral distinctions among differing species of voices (as Bach’s works for unaccompanied strings illustrate this most forcibly), the principles of vocal polyphony are elaborated in a greatly expanded domain.

The connection is usefully illustrated by comparing the vocal and instrumental compositions of Mozart and Beethoven, separately, and in parallel. The same principles of use of singing-voice registration, which confront us immediately in the composition of the vocal part, govern the composition of the instrumental work. For this reason, the placement of the soprano register-shift in the vocal part, is also an imperative of registration and tuning in instrumental works.

This approach to counterpoint has been savagely impaired by the modern teaching of chordal progressions. It is important for musical literacy, that no performer or audience ever hear a chord as a chord, but rather as polyphony. Each tone of the intoned chord is recognized as a tone in some species of singing voice, as a mere momentary cross-sectional slice of an ongoing piece of polyphonic utterance.

All the topics we have referenced thus far, pertain only to the domain of *natural* beauty. Mankind’s work in all the features we have treated thus far is only the work of recognizing *natural* laws of music, independent

of the rightful powers of choice of the musician. Granted, the mastery of these *natural* qualities of musical beauty, is the imperative foundation of musical artistry, and something which must never be violated in the composition of music or its performance. In other words, these are either simply the *natural* laws of musical science, or principles directly derived from nothing but the application of those *natural laws* to the empirics of the musical apparatus.

All that is beautiful in music, which is not simply the faithful service of *natural beauty*, is the product of *artistic* beauty.

Artistic Beauty As Such

Artistic beauty is the essence of that which sets mankind apart from, and above, the beasts. This quality of mankind has two interdependent aspects. The first of these two aspects we may conveniently identify as the *formal* one; the second, inseparable aspect we may identify as the *spiritual* one. We treat the formal aspect of the matter first, and situate the spiritual aspect in that frame of reference.

What distinguishes human society, and the human individual, from the “society” of the beasts? Empirically, the distinction may be made as follows.

The ethnologists have postulated that the most primitive condition of mankind is what they name a “hunting and gathering society.” Whether such a form of society ever existed, or not, there is no doubt that the early primitive condition of mankind must have been confronted with the problems which the ethnologists postulate. Certain general features of such a postulated form of society can be estimated with relatively great precision.

Under such conditions of wilderness life, an average of about ten square kilometers of the Earth’s land-area would be required to sustain an average individual. This signifies a ceiling upon the size of the living human population, of approximately ten million individuals for this planet as a whole. The level of subsistence and life expectancies of such a population would be very poor, and an average age of death of the individuals significantly below twenty years. The cultural life of mankind in such a state would be more or less comparable to that of troops of baboons.

Today, the human population is in excess of five billion. Admittedly, most of that five billion live in deprived and precarious conditions, conditions which have become progressively worse, on the whole, during the recent twenty years. However, had we deployed adequately the levels of technology already existing, we could sustain more than ten billion at levels of existence and life expectancies characteristic of the industrialized

nations during the late 1960's and early 1970's. At present, the frontiers of science and technology have placed within the reach of the next two generations, the highest potential rate of increase of the *per capita* productivity of labor in history.

The rise of population can be traced with reasonable, if somewhat diminishing accuracy, backwards for more than six thousand years. We are able to correlate the rates of increase of potential population-densities with precise changes in applied technologies. In effect, we are able to construct a mathematical function which correlates advances in science and technology with increases of mankind's potential population-density, subject to the requirement of increasing *per capita* standards of consumption and life expectancies.

Thus, relative to the ethnologist's postulated "hunting and gathering" society, mankind's absolute population-density has been increased by three orders of magnitude (e.g., approximately one-thousand times). In terms of the energy content of *per capita* consumption, we must add additional orders of magnitude of improvement. In addition to this, there is an approximate fourfold improvement in life-expectancy. In contrast, no animal species is capable of improving its conditions by even a small fraction of an order of magnitude, except through human intervention as animal husbandry.

Thus, that aspect of the nature of the human individual, by means of which mankind generates and efficiently assimilates scientific and technological progress, is the aspect of individual human behavior which sets mankind apart from, and above, the beasts. It is the application of that same distinctively human quality of behavior to *natural beauty*, which is the root of *artistic beauty*.

This locates the source of artistic beauty in those same potential creative powers of the individual mind which account for mankind's ability to generate and to assimilate efficiently valid fundamental discoveries in physical science. We limit the discussion of the formal aspect of such creative processes to a few bare essentials of the sort readily observed by inspection of the matter.

Among the most commonplace examples of the creative potential of the individual is an event which often occurs among happy very young children occupied in constructive play with building blocks. At some point, the child may effect what is for that child an original discovery, expressed as the ability to build something which the child had been unable to build before, and to adduce from this success a principle which the child discovers can be repeated in that and other ways. In that moment, witnessing the child's sudden illumination with a special quality of joyfulness, the adults observing may be brought to the verge of "tears of joy."

In that experience, we witness the germ of the principle of artistic beauty: the delight in the exercise of our individual creative powers of discovery which we associate with the notion of "tears of joy."

In music, we experience this in a good performance of Mozart's *Requiem* or the simpler *Ave Verum*. If the conductor does not evoke a sense of the specific quality of emotion associated with "tears of joy," the conductor is informed that either he is seized by a bad state of musical mind, or that the performance lacks the quality of "rightness."

We can more or less readily observe, by thoughtful inspection of the matter, that we are capable of two general qualities of emotional state. On the one side, there is the nobler condition typified by "tears of joy." Opposite, is the erotic emotion, which we associate with hedonistic lusts such as greed and rage. The Classical Idea is associated with the first, and the Romantic and Modernist approach to music with the second.

In Plato, the first quality of higher emotional state is associated with the notion of the Good and the Beautiful—*agathos*, as in the woman's name, Agatha. In the original Greek of the New Testament, a related notion is identified by the verb-related term *agapē*, as directly opposite to the lower quality of emotional state, *eros*. In Western European Christian culture, *agapē* is rendered as *caritas* in the Latin, and the *charity* of the King James' Authorized Version of the New Testament. It signifies, for Western European culture, the quality of love of God, love of mankind, love of truth, and love of beauty, and the controlling emotional state with which we approach life's challenges.

We observe that this quality of *agapē* occurs in a special way in connection with valid forms of creative mental activity. It occurs as the prize secured when we effect a valid discovery. Yet, without this same emotional quality as a driving force, we are unable to sustain the qualities of concentration needed to effect such discoveries.

In the effort to find a solution to an inherently soluble problem, we observe a student or craftsman hammering away in a state of more or less thinly disguised rage, and perhaps smashing his tools when he or she fails to obtain success in that way. In contrast, we observe the happier, relatively calm state of mind, blended with great concentration and energy, quietly proceeding to attack the problem on a flank, working stubbornly, confidently toward a solution.

In musical performance, we observe the master, mobilized in the appropriate, approximately *agapic* state of mind, sustaining successively a very long line of phrasing over a passage, a sequence of passages, an entire section of a movement of a work, an entire movement, an

entire work. The beauty of some of the *adagio cantabile* movements of Mozart and Beethoven instrumental compositions, are excellent illustrations of this.

If we compare such a performance of these works, with the erotic quality of sentimentalism of other performances by celebrated artists, the difference glares out at us. It was said of Wagner's *Liebtestod*, from his *Tristan and Isolde*, that the performers' objective was to leave "not a dry seat in the house." Such is the distinction between the *agapic* quality of the Classical Idea in music, and the erotic approach, bordering upon the Dionysiac or irrationally mystical, of the Romantic approach.

Some performers have recognized the fact of the distinction, but have understood it wrongly. They accept the fact that Classical instruments were tuned to C=256, and accept the prohibition against imposed arbitrary sentimentality upon the performance of the score according to the original text. However, the result is dullness. There is no *intensity* in the execution, no compelling sort of distinctive "long phrasing" of the performance. The almost metronomic absence of any governing emotion at all, has been substituted for the abominations of



EIFNS

FIGURE 6. The fortepiano's frame, built almost entirely of wood—as opposed to the metal frame of the modern pianoforte—combined with a greater distinction between registers, gives a *bel canto* singing quality. This instrument was constructed in Vienna by Conrad Graf around 1830.

the Romanticist's erotic sentimentality, and the Modernist's Dionysiac vacillations between the Dionysiac and the intoxication with the nothingness of the mystically obscene.

Among the best ways of bringing out such crippling emotional states among literate musicians, is to lure them into reciting a short composition in classical poetry. Each of the more fundamental among the interpretive problems of their musical performance will tend to be shown in that terrible recitation of poetry. Another device which is usually more or less infallible to the same effect, is to lure them into discussing the interpretation of a musical composition from their repertoire. The response is usually either pedantic discussion of mere technical aspects of the composition, or sentimental driveling along the same general lines as the usual run of newspaper musical critic's reviews and dust-jacket program notes.

The notion that the composer has elaborated a composition as a musical idea referenced to the potential for developing such an idea in chosen musical subject matter, is something of which the lured musician appears to be ignorant.

There is perhaps no one mode in which accomplished musicians do communicate the notion of *agapic* qualities of musical ideas. Our modern musical culture does not accustom us to communicating on such subjects; most musicians leave such matters to the domain of musical expression as such, rather than words. Sometimes, a verbalization of musical ideas occurs as overtones of musical rehearsals and kindred occasions. The kinds of tests we have suggested will usually bring out the failed musician's problems, but are not infallible ways of ad-ducing the desired quality of expositions from the good musician; the latter usually resort to demonstrations made with aid of their instruments, showing the problems of the wrong way, in contrast with the proper approach. In such ways, they attempt to make the differences heard. In the final analysis, no other approach is a fully adequate one.

Nonetheless, what we have stated here so far indicates the general idea to be conveyed. In practice, perhaps no musician is fully satisfied that any performance he or she has given, or heard, is yet an adequate one. The drive to discover flawed or inadequate treatments, and to discover ways to better serve the purpose, is the life's blood of musical activity, as every true scientist is impassioned by the determination to supersede the inadequacies in his most recent, most valued discoveries. That is the *agapic* way of such professions at their best.

Yet, we may add something of general applicability, which is helpful in making the point a bit clearer. What we aim for in the Classical Idea of music, is polyphonic and *agapic* "transparency" of the composition as a unified

process of elaboration—development—of a musical idea.

Now, the dividing line between *natural* and *artistic* beauties becomes blurred.

In 1747, J.S. Bach entered into a famous collaboration with the Prussian monarch and amateur musician Frederick the Great. The result was Bach's *A Musical Offering*. It is both a beautiful musical composition and a series of studies defining the rudiments of the discovery of a new dimension of approach to the methods of classical musical composition.

After Mozart undertook his intensive studies of Bach, about 1782, Bach's *A Musical Offering* contributed a major influence to his work. The results are most directly represented in a series of three compositions. The first is the C-minor keyboard sonata, K. 457. The second is the so-called "Dissonant" quartet, K. 458. The third is a keyboard fantasy, written as a prologue to the K. 457 sonata, K. 475. The same musical idea is elaborated in application to other locations, but these three, taken together, represent a formal statement of Mozart's assimilation and further development of the discovery which Bach presented in his *A Musical Offering*.

The same musical idea is the principal subject of several works of Beethoven. In the keyboard repertoire, these include his "Pathétique" sonata, Opus 13, and his last keyboard sonata, Opus 111. Schubert also makes the same musical idea the principal subject of several compositions, including, most famously, his posthumous C-minor keyboard sonata and the "Kriegers Ahnung" of the collection published as his *Schwanengesang*. Chopin, demonstrably predominantly influenced by Bach more than Beethoven, nonetheless includes among his most famous references to Beethoven's work and explicit treatment of Beethoven's Opus 111, as his own Opus 13.

In effect, the discoveries situated at the center of Bach's *A Musical Offering* were thus rendered a virtual law of classical compositional method. This is exemplary of a general principle of the Classical Idea, not only in music. As in valid scientific work, the initial discovery of a principle has the implications of a work of great artistic beauty. Once established, that same principle becomes a part of the repertoire of natural beauty.

This is not the exception to the rule, of the distinction between natural and artistic beauty; rather, is the apparent exception which proves the rule.

All Classical art, as a whole, and in each of plastic and non-plastic aspects of art as a whole, has a directed character. The direction, is the perfection of man's use of natural beauty. The result of progress is, that the greater perfection so achieved becomes a higher standard for natural beauty's expression as art. The discoveries which have established this higher standard persist as

artistic beauty for generations to come; the enjoyment of such works is the act of reliving the process of discovery, and is thus of the character of durable artistic beauty on that account. At the same time, what is proven to have been a valid discovery in the production of artistic beauty, becomes a principle of natural beauty thereafter.

The essential distinction between natural and artistic beauty, is that *natural beauty* is that which is decreed for art from the beginning, by God. *Artistic beauty* is that use of lawful natural beauty shaped by valid use of those creative powers with which God has endowed the human individual. The situation is broadly the same as in the progress of physical scientific knowledge and practice. The difference is, that the *agapē* which enables the scientist to produce valid fundamental discoveries, and to guide society in the use of those discoveries for the advantage of mankind, is the end in itself of the creation and re-creation of artistic beauty.

The purpose of art is to celebrate and strengthen the noblest state of mind which the individual person can achieve, and to aid thus in making us better people. It is a contribution best and most naturally celebrated in the manner *agapē* prescribes, by an intensification of that anti-erotic quality of emotion we associate with childlike "tears of joy."

The most precious gift we may receive, is the means to bring forth the force of *agapē* to rule our minds, and guide our actions, at will. Artistic beauty is a lever by means of which we are enabled to do just that. That is the purpose of art in general, and music in particular, according to the Classical Idea.

NOTES

1. Unless specifically indicated as B.C., dates given in this are A.D.
2. One of St. Augustine's most extensive elaborations of the differences between the Christian and Platonic world outlooks can be found in his *City of God*, books 8–10 and 12 (New York: Random House, 1950).
3. On the usage of "Venetian Party" during the early eighteenth century, see H. Graham Lowry, *How the Nation Was Won, 1630-1754* (Washington, D.C.: Executive Intelligence Review, 1988). Under the reign of England's Queen Anne, all of Western Europe and English-speaking North America was divided between the allies of Gottfried Leibniz and Jonathan Swift, on the one side, and what was termed the "Venetian Party." The latter included the Duke of Marlborough's Liberal Party in England, and the corrupted Georg Ludwig of Hanover, later Britain's George I.
4. Johannes Kepler, *The Secret of the Universe* (1596); *Commentaries on Mars* (1609); *On the Six-Cornered Snowflake* (1619); *Harmony of the Universe* (1619); and *Epitome of Astronomy* (1620).
5. Arithmetic-geometric mean, geometric mean, and Golden Mean (or Golden Section) are each distinct values for F_n , depending on the construction of the scale.
6. A summary of the rigorous treatment of the formal aspect of such creative processes, is provided in Appendix A, Book II of the Institute's "Manual on the Rudiments of Tuning and Registration."

Nicolaus of Cusa And the Council of Florence

by Helga Zepp-LaRouche

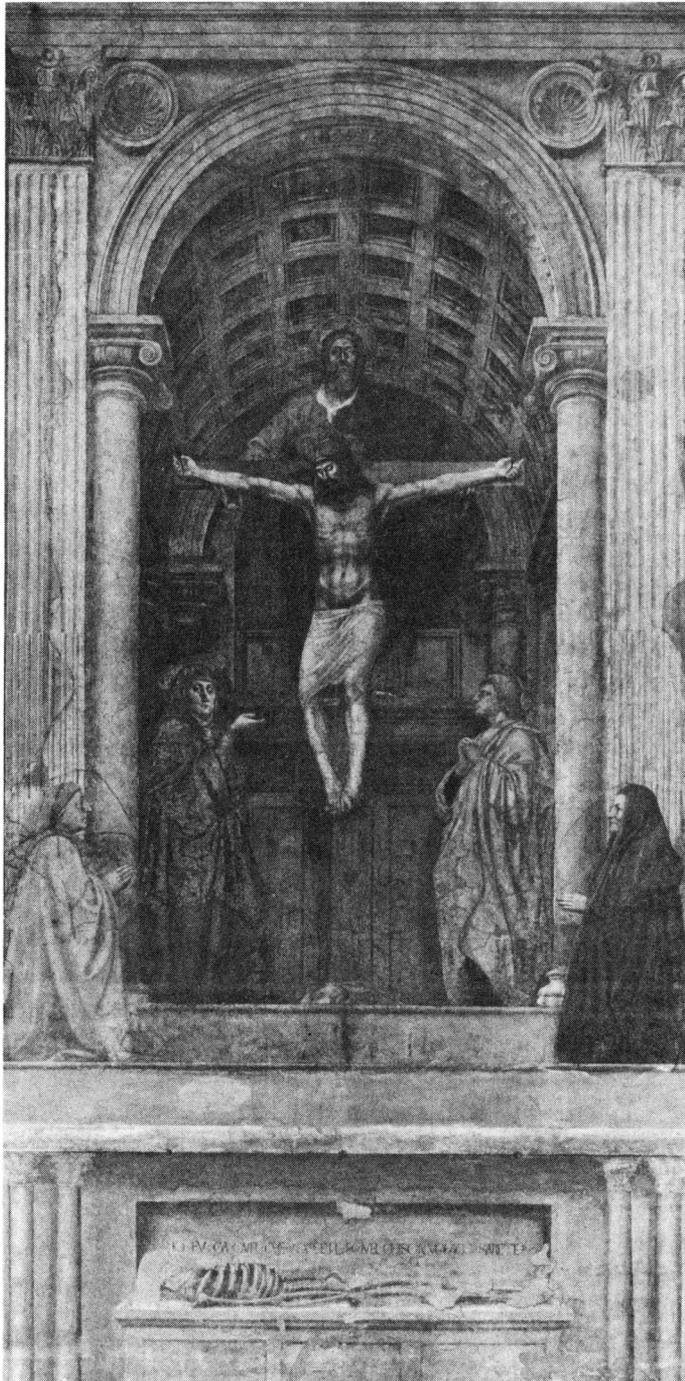
In a period in which humanity seems to be swept into a maelstrom of irrationality, it is useful to recall those moments in history in which it succeeded in elevating itself from conditions similar to those of today, to the maximum clarity of reason. The 550th anniversary of the Council of Florence is the proper occasion for dealing with the ideas and events which led to such a noble hour in the history of humanity.

We would do well to orient ourselves according to this optimism, which is born of an unshakable faith in man in the image of God. For the dangers threatening us today in a near-apocalyptic manner are even greater than those which devastated civilization in the fourteenth century. Then, the dangers were the collapse of production and trade, the Black Death, belief in the occult, and schisms in the Church. Today, they are the threat that entire continents in the developing sector will be wiped out by hunger, the increasingly species-threatening AIDS pandemic, satanism's blatant offensive, and an unexampled process of moral decay. The parallels are all too evident, yet this has not halted our headlong rush today into an age even darker than the fourteenth century.

The principal problem arises when man abandons God and the search for a life inspired by this

Schiller Institute founder Helga Zepp-LaRouche delivered this speech to an Institute conference commemorating the 550th anniversary of the Council of Florence, held in Rome on May 5, 1989. The speech was delivered in German and has been translated by John Sigerson. It has been slightly edited for publication.

Masaccio, Trinity, Church of S. Maria Novella, Florence.



Scala/ART Resource, NY

aim. As Nicolaus of Cusa said, the finite being is evil to the degree that he forgets that he is finite, believes with satanic pride that he is sufficient unto himself, and lapses into a lethargy which prevents him from developing all his powers, hence preventing him from discovering within himself the promise of his actual "divine origin." But precisely because the Christian humanist image of man today is vulnerable to destruction from so many different flanks, it is urgent that we learn from the example of the Council of Florence.

The Catholic Concordance

I would like to outline the role which Nicolaus of Cusa played in the Council of Florence, in bringing about the union of the Roman and Eastern Orthodox Churches on the basis of the highest common denominator. At the time of the council's conclusion in 1439, Cusa was thirty-eight years old, and therefore, compared to the other Church fathers present, a relatively young man. However, if one takes into consideration Cusa's complete works, by which he became, so to speak, the "gatekeeper to the new era" and the founder of modern natural science, then it is not surprising that he should have contributed so much in practice and content, to make the union of the churches possible.

In the preface to his most important work, the *Catholic Concordance*, which was written in 1433 during the preceding Council of Basel, Cusa speaks of a new epoch in the spiritual history of humanity. In this work, the basis for human rights and for national sovereignty can be identified, in that Cusa defined the relationship between governor and the governed as a relationship based on natural law. And, although he conceded maximum autonomy to individuals and states, as also to individual churches, he made clear that no lower association can be on the side of reason if it places in jeopardy the interests of all and the union of the universal Church.

Having understood that the Council of Basel, because of its assertion of conciliar supremacy over the Pope, had shown itself to be incapable of achieving union, Cusa asked himself how union with the Eastern Church could be achieved. With the schism of the Greeks (1054 A.D.) still in effect, the Council of Basel, which represented itself as a universal council, was in reality only a patriarchal council of the Western Church. To realize a universal council, in which all five patriarchs would participate, would require union with the Eastern Church and the consent of the Pope. What the reference points for such a union might be, became clear to Cusa when he studied the ancient texts of the preceding councils, an activity which he had undertaken in order to write the *Catholic Concordance*.

The Council of Basel Fails

When preparations for discussion of reunification with the Eastern Church began in July 1436, Cusa was assigned several important tasks. Because he was among the few who spoke Greek perfectly—as is demonstrated by a sermon from the year 1428 or 1430 containing many Greek quotations—he was elected council *praecognitor* and conservator of the decrees on Oct. 5, 1436.

When, on May 7, 1437 a schism occurred at the Council of Basel as a result of disagreements regarding the location of the unity council, some representatives of the minority current, loyal to the Pope's request that the council be held in Italy, left Basel. They were the bishops Digne and Oporto, and Cusa. The Greeks welcomed the minority request, and left Basel with them. This strengthened Pope Eugene IV, who sealed the minority decree with the Bull *Sabotoris et Dei nostri*, issued on May 30, 1437.

Cusa participated in negotiations with Florence, which initially failed due to the opposition of the Emperor Sigismund and of Charles VII of France. The decision on the location of the unity council was therefore postponed until the Greek delegation was to arrive. Eugene IV then sent a delegation to Constantinople on ships leased in Venice. The delegation was composed of his nephew Antonio Condulmer, Mark, archbishop of Tarantaize, Christoph Gavatori, bishops Digne and Oporto, and Nicolaus of Cusa. The papal delegation reached its destination on Sept. 3, 1437, and the Greek delegate Dishypatos confirmed that only the Basel minority had the authority of the true council. The delegates, acting as representatives of the Pope and the council, opened negotiations with the Byzantine Emperor and the Patriarch.

Shortly thereafter, the Council of Basel delegation arrived in Constantinople, and even Emperor John VII, who had not succeeded in overcoming the conflict, decided to travel to Italy with the papal delegation. With him traveled the Patriarch Joseph II, representatives of all the patriarchs, and numerous fathers of the Eastern Church.

The Greeks were acting on the basis of the same considerations which had brought Cusa to conclude that union would be possible only with the consent of the Pope. This was likewise the gist of the advice offered by the delegates John Dishypatos and Emmanuel Miloti, who had collaborated closely with Cusa in Basel.

The Crucial Documents

Cusa had made good use of his stay in Constantinople. Before writing the *Catholic Concordance*, he had collected

exhaustive source material on the synods which had taken place earlier in the East. He took with him a Greek manuscript which contained the acts of the Sixth and Seventh Councils, the Second and Fourth Councils of Constantinople of 680-681 and 869-870, and the Council of Nicaea in 787.

He also took the Greek codex of the treatise of Saint Basil against Enomius, which played an important role in the debate over the *Filioque*, i.e., that the Holy Spirit proceeds from the Father *and from the Son*. Since all the texts procured by Cusa dated back to the period before the schism, they had the effect of debunking the argument of the main Greek speaker, Mark Eugene, according to which the *Filioque* had been introduced only later.

Another decisive indication of the work of Cusa is the Codex Harlaiana, containing the texts of the Apostles and the letters of the New Testament. It becomes clear, that Cusa had personally researched that text, since in a gloss, he noted that the so-called "Comma Johanneum" (I John 5:7) was missing.

Other manuscripts brought back from Constantinople by Cusa, and today preserved in his library at Berncastel-Cues, are codices No. 8 and No. 9 with the Psalms; No. 18 with an exegesis of the Gospel according to Saint John written by the Greek fathers; No. 47, the prayers of John Chrysostomas; and No. 48, the exposition of the Nicene David Paphlagon on Gregory of Nazianzo. Cusa also acquired a manuscript with the *Platonic Theology* of Proclus, which he then gave to Ambrose Traversari in Ferrara for translation.

It is therefore possible to hypothesize that it was Cusa—whom Piccolpasso described as an "expert in Greek and otherwise quite cultivated and endowed with universal gifts," as well as a "discoverer of many manuscripts and the owner especially of Greek works, includ-



Council of Florence 550th Anniversary Conference: left, Helga Zepp-LaRouche; center, father Isydor Patrylo, OSBM, General Superior of the Basilian Order of St. Josaphat; right, Cardinal Mario Luigi Ciappi.

ing those with Latin commentary and grammatical annotations"—who contributed the essential sources which were to demonstrate the correctness of the Latins' argument on the *Filioque*, thus cementing the union. As early as Oct. 17, 1437, Cardinal Cesarini, speaking with Ambrogio Traversari, had described the manuscripts on the preceding councils as valuable background material for the consultations with the Greeks.

During the discussions which took place during the council, first in Ferrara and then in Florence, the Latins raised the argument that the *Filioque* was not an addition but simply a more precise explanation of an affirmation contained in the Credo. Even the fathers of the Second Joint Synod, they argued, considered it not an addition to the Nicene Creed, but a specification. In fact, they said, the *Filioque* is an explanation contained in the words *who proceeds from the Father*. Since the Son participates in the Father in all essential aspects, the Holy Spirit proceeds necessarily both from the Father and from the Son.

This had also been the argument of St. Basil, who taught that the Father would be unthinkable without the Son and the Holy Spirit. The three persons, he wrote, must always be thought of together: If one thinks only



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Benozzo Gozzoli, Journey of the Magi, Medici Palace, Florence. The subject was chosen as a metaphor to celebrate the Council of Florence, showing the gathering together of the Council participants from both East (below) and West (left).

of the Son, one thinks also on the one hand of the Father and on the other, of the Holy Spirit, just as the procession of the Holy Spirit is recognized also from the Son. Everything that the Father has, the Son has as well, except for the fact that the Son is not the Father. For this reason, with that sole exception, everything that the Father affirms, the Son also affirms. According to John 16:15, Christ himself states: "Everything that the Father has is mine."

This position was also presented by John of Montenero in the sessions going from March 2-24, 1439, when he spoke eloquently for the Latins. The argument struck the Greeks, particularly Isidor, Bessarion, Dorotheus of Mitilene, and Gregory Melissenos, chaplain of the imperial court. Isidor replied in the name of the Greeks that they needed some time to digest the argument fully, and that they would appreciate receiving it in written form, particularly the quotations from the Latin fathers. After having attentively studied the Patristic texts—in which a



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crucial role was played by John of Ragusa's comparison of the codex brought by Cusa with the text brought by Mark Eugene—on June 8 they recognized unity in the doctrine of the procession of the Holy Spirit.

The Significance of the *Filioque*

Even if the significance of the union of the Churches over the issue of the *Filioque* is undervalued by the majority of our contemporaries, they are at the very heart of the values of our Christian humanist culture, and the values of the Christian West. If we lose this knowledge, we will also lose what is most precious, that which is at the basis of our conception of man.

The emergence of Christianity marks the greatest turning-point in human history. By becoming man, Christ broke the cyclical image of history, which had been the leading feature of pagan, pre-Christian myths and cults. With Christ, who was at the same time man and God, man made in the image and likeness of God became *capax Dei*, that is, capable of participating in God, and thus capable of infinitely increasing self-perfection and approach to God. Only with the Son of God who becomes man, with the Passion and Resurrection, was man's redemption made possible. God's capacity to become man, and man's capacity to participate directly in God, is the basis of the inalienable dignity of every man. No other monotheistic religion believes that God has become man. What Christianity allows man is his liberation, his freedom through necessity.

Nicolaus of Cusa demonstrated passionately the correctness of the *Filioque*, not only through his service to the Church, but also by his teaching of the Trinity and his Christology, which are of immense speculative greatness. For Cusa, Christ gives meaning to the universe, and his followers are those who give meaning to man. Thus he writes in the beautiful sermon "Confide, My Daughter" of 1444, "Let us seek in ourselves what Christ is! If we do not find him in ourselves, then we will not find him at all."

Then, he continues with the following observation:

Until such time as man reaches life in *his own humanity*, the true cause of every life; in *truth*, cause of all that is true and acceptable; and in the *Good*, cause of all that is good and to which it is right to aspire—he will never reach his aim, he will never have peace.

How true! And how right it is, to affirm that the root of all unhappiness for those who today hastily and restlessly chase after pleasure, lies in the fact that they believe they can realize their own humanity in some way other than by "seeking Christ within themselves."

This is why the *Filioque* is so important for us today. The idea that the Holy Spirit proceeds only from the Father, but *not* from the Son, contains a different relationship between man and God. It is, in a certain sense, a more impersonal relationship: The Father is more the authority, whom man must obey, whom man may indeed love, but more from a distance. Man does not participate in equal measure in the process of creation, as is the case if the Holy Spirit also proceeds from the Son.

Microcosm and Macrocosm

For Cusa, man is the microcosm in which all the various elements and lawfulnesses of the macrocosm are united, thus uniting the order of creation. Each man recapitulates within himself in concentrated form, the whole history of evolution, from the inorganic to the spiritual—an incredibly modern idea for a thinker of the fifteenth century!

The fact that no form of life can fully develop its capacities without participating in the next higher form, can be seen with animals, which only fully accentuate their potentialities once they come into contact at some point with that which is human; it can also be seen with man, who becomes fully man only if he participates in God. Thus, in Jesus Christ, man is enhanced to his maximum degree. Christ is, in fact, man in the most perfect manner, being at once fully God and fully man. For this, the perfection of man, and with him the perfection of all creation, are possible only if man is more than just man, and if he is at the same time also God. A perfected meaning is given to creation only if it is understood that the divine Logos takes into its possession and service, the primordial creative image of the universe, and of the man who represents it—a man who possessed personally the highest capacity for self-perfection.

Christ, as He who gave meaning to creation—what a wonderfully consoling thought! Yet, this very highest basis of existence is not too elevated for us, nor is it unreachable; it is up to us to open ourselves to this truth.

As Cusa states in *The Vision of God*, Christ is even closer to us than the father, the mother, the brother, or the friend.

Trinity Doctrine

Cusa was likewise drawing on Augustine and the school of Chartres, when he stated that man is in the image and likeness of the triune God. The unity and trinity of God consists in the fact that the three persons, Father, Son, and Holy Spirit, are one single universal principle

and one Creator.

It is truly fascinating to think that Cusa elaborated his trinitarian doctrine for the first time in *On Learned Ignorance*, a work which was born of discussions with the best and most cultivated Greeks during his crossing from Constantinople to Venice, which lasted three and a half months. He writes: "Compared to unity in multiplicity, similarity in diversity, and the harmonic order in the universe, God is the first principle, the absolute unity, equality, and connection, and therewith the one and triune cause from which the all multiplicity and diversity creatively derive." He adds that divine "unity" spawns absolute "equality," and that "connection" derives from both.

This speculative manner of understanding the Trinity occupied Cusa for his whole life, and, as emerges particularly from his *On the Peace of Faith*, he saw in it the best method for making the other religious representatives understand that the Christian trinitary concept does not have anything to do with a doctrine of three divinities. Cusa writes:

Some name unity Father, equality Son and connection the Holy Spirit, since those designations—even though they are not proper, nevertheless suitably designate the Trinity. For the Son is from the Father and Love or Spirit from unity and the equality of the Son. That is, the nature of the Father passes over in the Son into equality. Therefore, love and connection arise out of unity and equality.

In another location, Cusa uses an analogical description of the divine Trinity, comparing it to the image of Love—the three elements of the loving, the loved, and Love. We can add that without divine Love, *agapē*, man does not understand anything.

The Image of God

Cusa dedicated a later work, *On Conjecture*, to Cardinal Julian Cesarini. Here, he developed the idea that the Trinity of absolute unity, infinite equality, and connection in God, taken together with the corresponding relationship between God and his Creation, are conjecturally transferred to man and his relationship to what on various levels man "creates, guides, and receives."

Cusa wrote a personal letter to Cardinal Cesarini, affirming that the great similarity of man to God consists in the fact that man may participate with his insight, his justice, and his love, in divine unity, equality, and connection. In this form, man both encompasses within himself, at the microscopic level, and transcends the entire cosmos, and is, in his own way, simultaneously

the receptive and the creative image of the triune God.

This is the essence of our existence.

Of course, man can choose to reject this fact. But in doing so, he violates the universal laws implicit in the order of Creation, and he cannot do so for long before nature rebels against him and brings about his demise. Or, as Pope John Paul II expressed it in the encyclical *On Social Concern*, nature will no longer recognize man as its master.

Our knowledge of the essential aim of our existence in God, as creative image of the triune God, is the most precious knowledge that we have. It is precisely this knowledge that we risk losing today. This is the central target of the satanic offensive today in all its convolutions. And precisely because the image of man thus defined is the focus of their attack, for the first time it is our entire human civilization which is at risk.

What is required, therefore, is an initiative which addresses the most important problem of our time, as the Council of Florence did with theirs. At that time, the problem was to bolster the unity of the Church against the onslaught of the Turks. Even if similar dangers stand out today, the central question of the existence of the human species, the *punctum saliens* of human history, is different today.

Urgent Tasks

Today, the lives of billions of human beings are threatened by economic injustice—a problem which was already addressed twenty-two years ago by Pope Paul VI in the encyclical *On the Development of Peoples*. In the time that has elapsed since then, the problem has worsened so dramatically, that only with the immediate realization of the ideas contained in the *On the Development of Peoples* and the *On Social Concern*, will it be possible to save the human species.

But, as in the Council of Florence, union will be attained only on the same high level as the *Filioque* principle itself. Even to solve the problems currently afflicting humanity, it is necessary to find in Cusa's works those metaphysical and ontological truths which will necessarily lead to their solution. Only with the development of all microcosms, i.e., of all men on this planet, so that they realize their full, God-given human potential, will it be possible to reach a Concordantia.

Therefore, may this 550th anniversary of the Council of Florence serve as the occasion to revive this grand proof of the capacity of man to act on the basis of reason, with our theme this time being the realization of a plan for the development of all peoples. For, participation in the triune God concerns each and every human being.

The Council of Florence: The Religious Event That Shaped the Era of Discovery

by Nora Hamerman

On July 6, 1439, in the city of Florence, Italy, the assembled Church hierarchy and imperial authority of the Eastern Orthodox Church and the Pope and bishops of the Roman Church proclaimed a document of Union entitled *Laetentur coeli*, "Let the Heavens Rejoice" (SEE box). After the Great Schism in 1054 A.D., the Council of Florence had finally reunified the Eastern and Western branches of Christianity.

The Council of Florence took place under the immediate threat of war, plague, and under conditions of extreme poverty. In fact, on several occasions the Council was nearly disbanded for lack of funds.

Nonetheless, under these conditions it established, for the first time, the ecumenical principle of a unity of doctrine within a plurality of rites and customs; and the correlated notion, that doctrine could *develop* without *changing* in its essential truths.

These achievements came to fruition in the evangelization of the Americas, which we celebrate this year on the 500th anniversary of Columbus' voyage to the lands he called the Indies. Yet while the date 1492 is inscribed in every schoolchild's memory, what happened in Florence in 1439 is scarcely remembered.

The Council of Florence is often overlooked as an obscure moment of ecclesiastical history. In part, this is because the union achieved in Florence did not survive



Cathedral of Florence, cupola built by Filippo Brunelleschi.

two decades. The strategic purpose of the Council, which was to join Eastern and Western Christendom in the military defense of Constantinople, failed in 1453. Less than a century later, the Council's aim of keeping Western European Christendom together was shattered by the Protestant Reformation.

Yet, judged from the standpoint of universal history, the Council was possibly the most successful gamble mankind has ever seen. It was the watershed for the Florentine Renaissance, which produced the greatest flowering of genius in the shortest period known to history. To understand how that result was *deliberately* brought

about—in order to replicate it today—we must understand the principles shared by those who organized it.

The Filioque Principle

The Union of 1439 was proclaimed jointly by two young men, the Greek John Bessarion and the Italian Julian Cesarini, from the pulpit of the Florentine cathedral of S. Maria del Fiore, under the great cupola, that had just been dedicated in 1436. The Bull stipulated accords on the doctrine of Purgatory, the primacy of the Pope, and divergence of rites, but above all it registered agreement on the doctrine that had long distinguished the Western, Augustinian form of the faith from the Eastern: the

"*Filioque*" clause recited in the West in the part of the Nicene Creed which proclaims belief in the Holy Spirit, the third person of the Trinity.

This clause was understood to define the necessity of technological progress as an indispensable feature of the doctrine of the Trinity, by stating that the Holy Spirit proceeds both from the Father *and the Son* (in Latin, *Filioque*), who is both God and man. Eastern resistance to the *Filioque* had persisted since the eighth century, when the doctrine was promoted by Charlemagne against the Arian heresy, which denied the divinity of Christ. Byzantium, ruled by a theocratic emperor who saw himself in the direct line of descent from the pagan Roman emperors as both secular ruler and high priest, was resistant to the implications of a theology that undermined autocracy by giving a major role to anyone but the Father—and particularly by implying that *development* is necessary.

At the Council, the Byzantines finally agreed to the *Filioque*. As recounted by historian Joseph Gill, their first objection was legalistic. They attempted to prove that any "addition" to the Nicene Creed was forbidden by Scripture, but this argument was finally beaten back by the obvious point that the Nicene Creed itself, established in the third century A.D., is an "addition" to Scripture. The Greeks were forced to concede that while the faith could not *change*, it not only could, but indeed must, *develop*.

This victory by the Latin side forced discussion on to the central point of whether the *Filioque* was true. During the lengthy debates, the Greek prelates were unmoved by the Aristotelian syllogisms presented by some of the Western theologians. But in the end, it was the massive evidence of the writings of the early Church Fathers, especially St. Basil for the Greeks and St. Augustine for the Latins, that moved them. The principle they accepted was "patristic," for it was clearly impossible that the great saints could have been in discord, and if read from the standpoint of this underlying principle of unity, it was also obvious that all the Fathers accepted a concept of the Son's relationship to the Holy Spirit, that could be expressed legitimately as the *Filioque*.

The Conciliar Movement

At the outset of the fifteenth century, as the threat of the Turkish aggression grew, Western Europe was in chaos, presenting no possibility of a unified military resistance. France and England were torn into feudal entities by the conflicts later called the Hundred Years' War. In most of Europe, the centralized nation-state was a

shadow of the robust promise of the twelfth and thirteenth centuries. Depopulation had begun at the outset of the fourteenth century, as the impact of the practice of usury and slavery—whether *de jure* or *de facto*—struck the poor and defenseless.

After a half-century of shockingly high mortality rates, the outbreak of the Black Death in 1348 carried off as much as fifty percent of the inhabitants in densely populated centers like Florence. Recovery from this disaster was slow throughout the continent. The plague returned often, and population continued to fall. The illusions of some, who had expected that a thinned-out populace would mean more riches to go around for survivors, were shattered by the reality of the Christian teaching that money itself is sterile without human labor. Yet the Church's own credibility was wrecked by the fact that many of its highest prelates, including numerous Popes, had been complicit in usury and the related sin of simony, the selling of holy things for financial gain. The schism of the West had led since 1373 to two, and after 1409, three competing Popes. In such a situation, the Church could not fulfill its traditional role as a peacemaker above warring parties. Moreover, Europe was racked with religious conflicts, such as the Lollard and Wycliffite rebellions in England, and the Hussite insurgency in Bohemia.

The grand design of the Conciliar Movement was to convene church councils in order to restore Christian unity, by carrying out reforms which everyone agreed were needed, although the nature and extent of the reforms were disputed. The conciliarists were active throughout Europe in the networks of intellectuals established by the Florentine poet Petrarca. Petrarca was an Augustinian Platonist, who committed himself to the recovery of Plato's dialogues, which were unavailable in reliable translations in the West, and to the expulsion of Aristotle's authority from science.

Until his death in 1374, Petrarca was the hub of an international community of scholars who managed to keep in touch through the duplication of letters. These scholars sought to recover antique Greek and Roman manuscripts, to master the classical languages, and to build up lay piety and secular states, both in the monarchical and republican forms. Their Conciliar efforts intensified in the 1390's, spurred by the carnage in western Europe, but especially by the growing danger of Turkish aggression in the East.

The first councils were inconclusive. Then, between 1410 and 1435, two general councils of the Roman Church were convened in the cities of Constance and Basel.

The first major reform was accomplished at the Coun-

cil of Constance in 1414-1418, where a single Pope, Martin V, was elected, and the rivals all renounced their claims. Under Martin V, the process of making peace between France and England began to move forward, even though in 1430, Joan of Arc was unjustly burned at the stake for her efforts to restore France's nationhood. The papal legate, Cardinal Niccolo Albergati, persuaded the powerful Duke of Burgundy to shift his allegiance from England to France. By 1435, the basis for peace had been established.

The conciliarists, who were concerned about greater participation by the national churches in the choice of their bishops, and about control of finances, believed that the reforms of the papacy in Constance were inadequate, and forced the Pope to convene the Council of Basel in 1431. It was for this Council that Nicolaus of Cusa wrote

his first great work, *The Catholic Concordance*. But the higher principle of concordance he sought, was not to be found in Basel.

In 1437, Nicolaus of Cusa became the envoy of the reigning Pope Eugene IV, whom he had previously opposed. Eugene, who had taken refuge in Florence after political troubles drove the papal court out of Rome, had become convinced by the Florentine Christian Platonists to convene an Ecumenical Council which would supersede the hopelessly divided Council of Basel.

The Traversari Conspiracy

Nicolaus of Cusa was recruited to this conspiracy by Ambrogio Traversari, the general of the Camaldulensian Order, who in 1435 was sent by Pope Eugene IV to Basel

'Let the Heavens Rejoice'

Excerpts from the Decree issued by the Council of Florence, which reunited the Roman and Eastern Orthodox churches on the basis of the concept of the Filioque.

Since we Latins and Greeks have met in this sacred Ecumenical Council, we have in common been at great pains, that that article about the Procession of the Holy Spirit should be discussed with great care and assiduous investigation.

After, then, the production of texts from the divine Scriptures and very many quotations of the holy Doctors of both Western and Eastern, some indeed affirming that the Holy Spirit proceeds from the Father and from the Son, while others, from the Father through the Son, and after perceiving that all bore the same meaning though expressed differently;

We Greeks declared that what we say, namely that the Holy Spirit proceeds from the Father, we do not say with the intention of excluding the Son; but, because we believed that the Latins say that the Holy Spirit proceeds from the Father and from Son as if from two principles and two spirations, we refrained from saying that the Holy Spirit proceeds from the Father and the Son.

We Latins, however, assert that what we say, namely that the Holy Spirit proceeds from the Father and the Son, we do not say with the intention of excluding the Father from being the source and principle of the whole of divinity, namely of the Son and of the Holy Spirit, nor by saying that the Holy Spirit proceeds from the Son, that the Son does not receive this from the Father; nor thereby do we assert that there are two principles

and two spirations, but we declare that there is only one principle and a single spiration of the Holy Spirit, as we have hitherto maintained.

And since from all these one and the same understanding of the truth emerges, in the end they unanimously agreed with the same sense and the same mind to the following holy union, pleasing to God.

In the name therefore of the Holy Trinity, Father, Son, and Holy Spirit, in accord with this sacred universal Florentine Council, we define that this truth of the faith should be believed and received by all Christians, and so we profess that the Holy Spirit is eternally from the Father and from the Son, and has his essence and his subsistent being from the Father and from the Son together, and proceeds from both eternally as from a single principle and a single spiration.

Declaring, as the holy doctors and Fathers say, that therefore the Holy Spirit proceeds from the Father through the Son, is directed to this sense, that by it is meant that the Son like the Father is according to the Greeks the cause, but according to the Latins the principle, of the subsistence of the Holy Spirit; and since all that is of the Father, the Father himself in generating gave to the only begotten Son, except to be the Father, [we define] this too, that the Holy Spirit proceeds from the Son, the Son Himself has eternally from the Father, from Whom also He was eternally begotten.

We define that the foregoing explanation of these words was posed legitimately and reasonably by the symbol *Filioque*, for the purpose of affirming the truth and out of urgent necessity. . . .

to organize support for an Ecumenical Council of East and West in Italy.

Ambrogio Traversari, born in 1386, had been a member of the Camaldulensian hermit order since 1400. The order's important monastery of S. Maria degli Angeli in Florence was a center of music and art, including vernacular music, and the leading school of manuscript illumination of the city. Lacking a university education, Traversari taught himself classical Greek and became the outstanding Greek scholar of Italy.

Traversari's mentality, typical of the new Renaissance spirit, is shown in the fact that he vigorously defended vernacular music, by citing the example of the aged Socrates, who learned to play the lyre as an example to the young.

Traversari had inherited from Petrarca the task of leading the battle for the Western notion of the Trinity and of liberating Latin learning in the West from the heavy weight of Aristotelianism.

Under the encouragement of Traversari, among others, classical Greek was mastered by several young Florentines, and the early Greek Church Fathers' writings were scrutinized to develop the arguments that would prove there was no contradiction between East and West on the issue of the *Filioque*, in the early centuries when Christendom had still been unified.

Traversari was not only an ardent collector of such texts, but also a leader in the faction that insisted that Christianity must harvest the best fruits of classical Greek civilization, in order to develop the laymen of a viable republic. By the first decade of the fifteenth century, a debate split all of the religious orders in Italy over whether it was legitimate to study such pagan classics as Plato, Homer, and Proclus. The anti-humanist opposition took a position much akin to today's "fundamentalists," while the Petrarcan outlook was ecumenical and republican. Traversari emphasized that the notion of "poetry" was essential to truth, pointing out that, after all, the Holy Scripture is poetry.

The disciples of Petrarca cited the Fathers of the Church in support of their argument that such readings were not only legitimate, but necessary in order to enrich one's knowledge of God and to foster piety among laymen. The numerous Renaissance paintings showing Augustine and Jerome in their studies, surrounded by books, scientific instruments, and even art objects, are rightly seen as propaganda on behalf of the Christian humanist movement, which insisted on the unity of science and religion.



Jan van Eyck, *St. Jerome in His Study*, 1435.

Key to the movement toward the Council of Florence was the new concept of translation, in open polemic with the Aristotelian approach which prevailed in earlier centuries. Medieval translations of Greek works of the classical and early Christian "patristic" periods were often unfathomable because they proceeded by word-for-word equivalents. But using the method of St. Jerome as their guide, the watchword of the Petrarcan humanists was "translate the meaning," recognizing that the verbatim translations often produced absurdities when the meaning of the words themselves had changed through the centuries. The word-for-word approach was only used for the Holy Scriptures—as Jerome himself had done.

The new, accurate translations were the basis of the

ecumenical movement to which Cusa himself became recruited. While still in his twenties he discovered some lost Latin comedies, which were the subject of correspondence between Traversari and the Medici family in 1429. Later, after 1440, when Cusa and some of his friends decided to attempt a scientific refutation of Islam, as the basis for converting Muslims to the Christian faith, their first step was to insist on getting an accurate translation of the Koran.

Science and Technology

It was these circles, fighting for the *Filioque*, as opposed to the Aristotelians, who launched modern science. In 1423, one of Traversari's Greek associates brought back to Italy from Constantinople a treasure trove of Plato, some 238 manuscripts. In 1424, Traversari reportedly engaged in an assiduous search for a work by Archimedes on military machines and hydraulics, a search that is particularly interesting in regard to the later genesis of the isoperimetric theorem by Cusa.

Cusa's 1438 book, *On Learned Ignorance*, developed the crucial isoperimetric theorem in the process of tackling the Archimedean problem of "squaring the circle." Cusa showed in that book that a circle is the minimum perimeter that can enclose a given area. Kepler and Leibniz later stood on the shoulders of Cusa as they developed the conception of "least action."

During the 1420's and 1430's, Traversari's monastic cell at S. Maria degli Angeli near Florence was the meeting place for a group of humanists linked to the Medici banking family, according to his fifteenth century biographer, Vespasiano de' Bisticci. Members of Traversari's entourage included Niccolo Niccoli, whose fabulous collection of antique books formed the basis of the Platonic Academy of Florence; Gianozzo Manetti, author of the first "Oration on the Dignity of Man"; Aeneas Piccolomini, the future Pope Pius II; and the physician Paolo dal Pozzo Toscanelli. Toscanelli had been a fellow student of Nicolaus of Cusa in Padua in the early 1420's, where both were likely to have studied with the famous master of music theory and mathematical perspective, Prosdocimo de' Beldomandi.

Who Was Toscanelli?

Toscanelli's full importance is hard to judge because most of his writings are lost, but at the very least he was the confidant of the most

creative scientists and artists of his day. He is reported by early sources to have instructed Filippo Brunelleschi, the founder of modern architecture, in formal mathematics. When Leon Battista Alberti wrote his treatise *On Painting* in 1435, which popularized the theory of painter's perspective, he dedicated it to Brunelleschi, whom he credited as the inventor of this new procedure. Shortly afterward, Alberti dedicated his book *Intercoenales*, a series of dialogues touching on political economy and other issues, to Toscanelli. Some decades later, Toscanelli designed a *gnomon*, or sundial, which was installed in the lantern of Brunelleschi's dome and marks the summer solstice at a fixed point on the floor. In 1464, when Cusa died, Toscanelli was the executor of his will.

According to the nineteenth-century historian Uzielli, there was a series of symposia in Traversari's monastery on various topics including especially geography, a topic of great interest to the Florentine merchants who wished to break the grip of the Venetian oligarchy on trade with the Orient. Poggio Bracciolini, another humanist in this group, describes himself, Cosimo, and Niccoli poring over a manuscript of Ptolemy's *Geography*, which had been translated into Latin in 1410 in Florence. (Despite



Council of Florence, fresco, Vatican Library, 1585. Ethiopian and other bishops kneel before Pope Eugene IV.

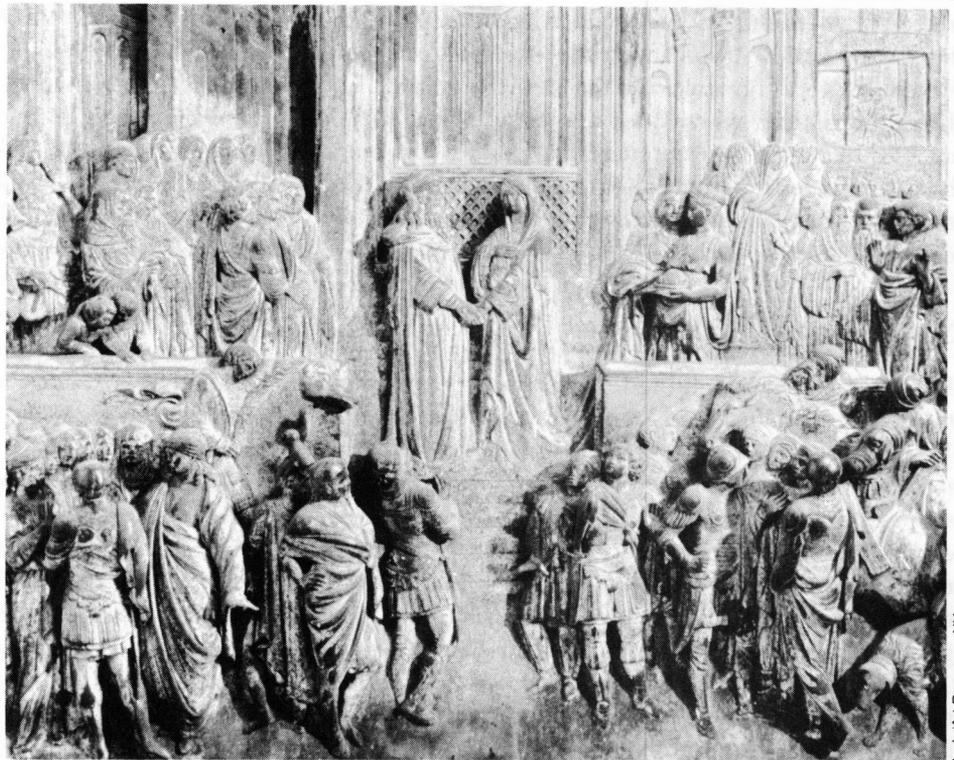
EIFRNS/Nora Hamerman

its serious flaws, the Ptolemy manuscript employed a spherical projection method of mapping and inspired cartographic reforms [SEE Symposium article on Ptolemy.] In mid-1428, Prince Pedro of Portugal, brother of the famous Henry the Navigator, arrived in Florence to collect maps and pointers for his brother's enterprise. While Portugal contributed the invaluable experience of its seafarers in navigating the deep oceans, Florence served as the theoretical storehouse for expeditions into Africa from the Iberian peninsula.

Such symposia came to a high point at the Council and form the natural counterpoint to debates over the procession of the Holy Spirit. In 1439, Gemistos Plethon, a neo-Platonic philosopher who came with the Greek entourage to Italy, gave the Florentines a lecture series on Strabo, the Hellenistic geographer. Toscanelli had the opportunity to talk with foreign delegates from every corner of the globe and fill in details missing from his mental map.

Although we do not know the precise nature of the connection, the voyages of discovery and the evangelization of new continents clearly do stem from these discussions at the Florentine Council. Reportedly, in 1474, the very old Toscanelli wrote a letter to Christopher Columbus that revised the basic concept of the Earth with the revolutionary premise that the ocean could be used as an intercontinental waterway, and that the navigable *ocean-sea* included the Southern Hemisphere. Toscanelli tells Columbus that he had written on the same subject to Fernão Martins, the canon of Lisbon cathedral. Toscanelli and Martins may have discussed this question at length at the house of Cusa at S. Pietro in Vincoli in Rome, where the three men met frequently in Cusa's last years.

By bringing together all the Christian churches of the known world at that time, the Council of Florence had affirmed the true basis for evangelization in opposition to the policy of slavery often practiced in the era of European discovery ahead. Indeed, it was Pope Eugene IV who issued the first papal condemnation of slavery.



Ghiberti, Meeting of Solomon and Sheba, "Gates of Paradise" Baptistery doors, Cathedral of Florence, 1435-7.

Scala/Art Resource, NY

The 1585 fresco in the Vatican Library of the Council of Florence shows three bishops kneeling before Eugene IV. The fact that one of them is the Ethiopian bishop, whose church signed the Decree of Union, underlines the principle of equality of all men, as in the living image of God.

Moreover, the connection between the theological principles of Christian Humanism and what we now call political-economy, was well understood by the leading participants in the Council. Already in 1440, Bessarion, the Metropolitan of Nicea, who had been named a Cardinal of the Latin Church, addressed a letter to the king of one of the states of Byzantium which had not yet been conquered by the Turks, Macedonia, in which he urged a crash program of "Westernization" for the Greek nation. Among the points of his proposal were a survey of natural resources as the basis for developing the economy, and the sending of young students to Florence to assimilate the level of knowledge of the Greeks' own Platonic tradition which had atrophied during the long stagnation of the Byzantine Empire.

Nicolaus of Cusa

The deep affinity between this Florentine group and Nicolaus of Cusa should be obvious. At the age of sixteen,

in 1417, Nicolaus had enrolled in the University of Padua to study canon law. There he met his classmate and lifelong friend, the physician Toscanelli who was among the intimate followers of Ambrogio Traversari. In Padua, Cusa also met the young teacher Julian Cesarini, a Roman only a few years older than himself. Cardinal Cesarini, who initially presided over the Council of Basel, was convinced by Traversari to abandon the contentious Council.

In 1437, Cusa left Basel with a minority group and set sail from Venice. In Byzantium, the minority delegates were received as representing the true authority of the Council of Basel and the Pope.

Cusa made good use of his stay in Constantinople to collect additional Greek sources for the Western argument that the early Greek Fathers of the church had absolutely no objection to the concept of the *Filioque*. Later that year they returned and debarked at Venice with the Byzantine Emperor and Patriarch and their retinues and proceeded to Ferrara, where the Council opened in April 1438. Traversari, later referred to by Cusa as "my good friend," met him again in Ferrara.

Before the Council was moved to Florence from Ferrara, Cusa left on a mission he was uniquely qualified to fulfill. One month before the Union was signed, the Council of Basel had excommunicated the Pope and elected an anti-Pope, Felix V, the king of Savoy. The

young German humanist spent the next decade preaching, organizing, and negotiating in Northern Europe in order to prevent the break between Germany and Rome which finally did occur in the sixteenth century.

Cusa was heartened when the news of the Union between the churches caught up with him in Germany, whence he wrote jubilantly on Aug. 4, 1439, to his friend Tommaso Parentucelli, "The Holy Spirit has made itself heard not in Basel, but in Florence." (Parentucelli became the first humanist Pope as Nicholas V in 1447, and made public the naming of Cusa a cardinal of the Church.)

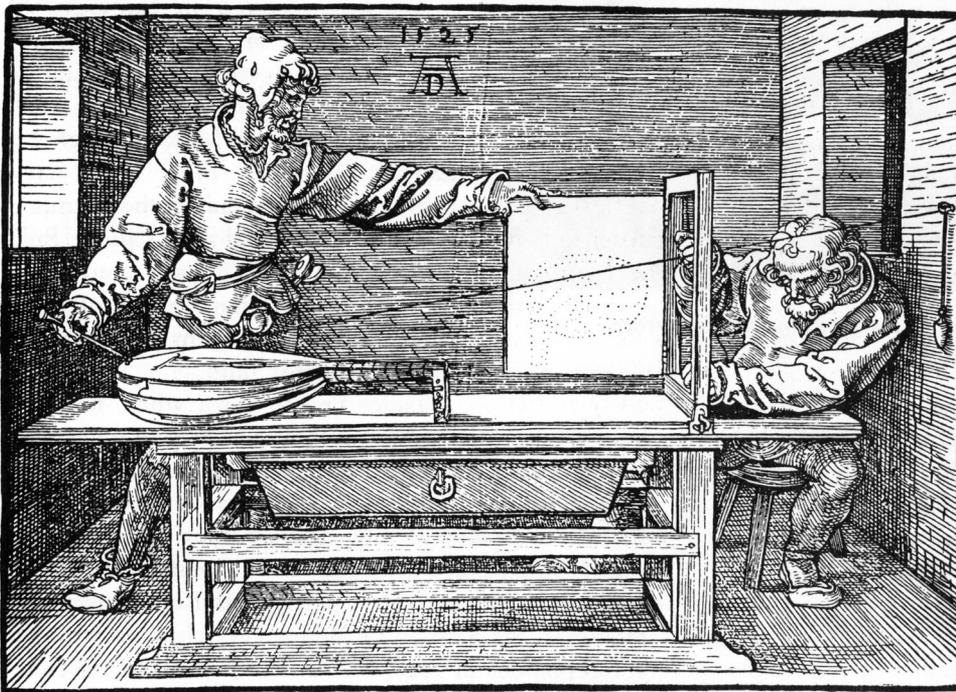
His mission was completed only in 1449 when Felix finally renounced his claims, and the German Emperor had recognized the Pope in Rome. Although rewarded with a Cardinal's hat, Cusa found his personal burdens no lighter. As papal legate to Germany and later bishop of Brixen, he faced violent resistance to his passionate efforts to reform the church.

Backlash in the East

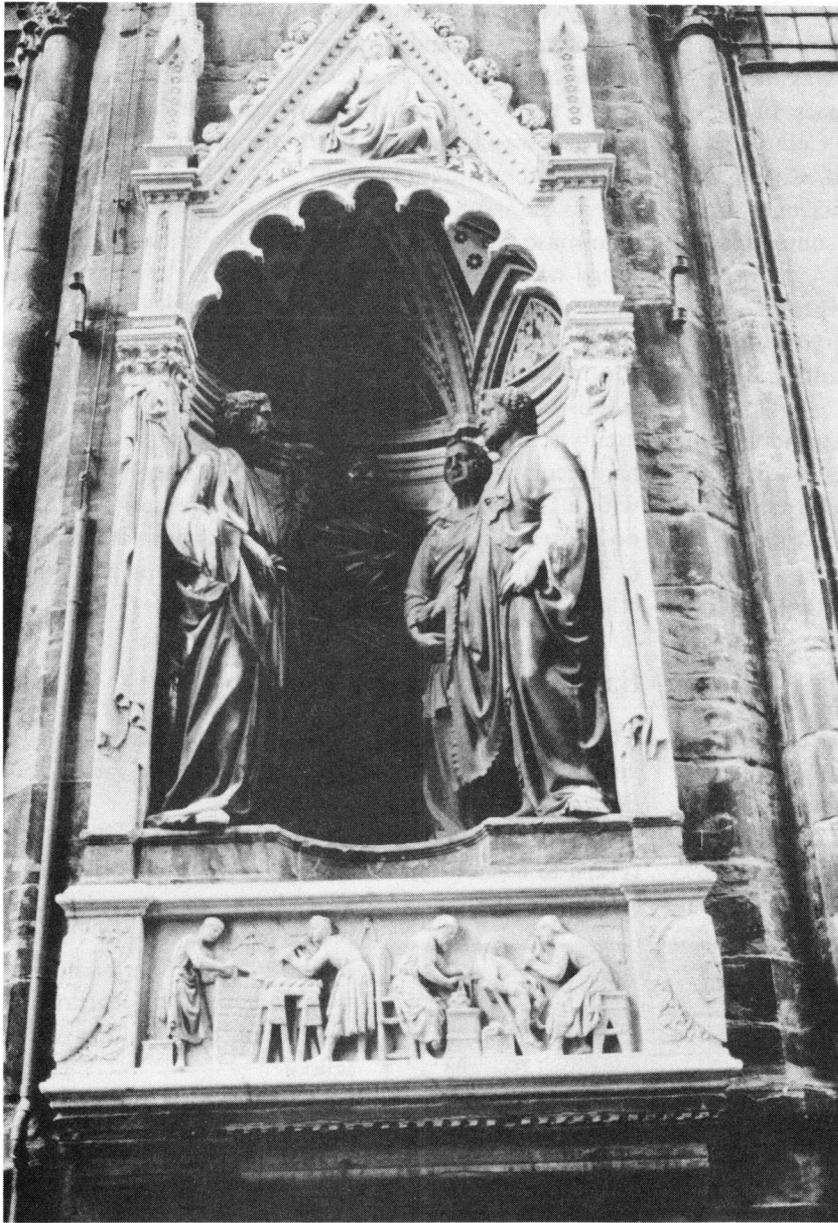
The hardships faced by Nicolaus of Cusa were also visited upon his close collaborators, John Bessarion, Isidor of Kiev, and Julian Cesarini.

No sooner did the Greek prelates and imperial rulers return to Byzantium in 1443, than the backlash against acceptance of the *Filioque* broke out throughout the remaining Byzantine territories, whipped up by reactionary monks of the Mount Athos school.

The Venetian and Genoese oligarchies made sure that no effectual or timely military support was provided to Constantinople. In 1444, thanks to what the king of Naples charged was Venetian treachery, the Western forces commanded by Cardinal Cesarini were slaughtered in the battle of Varna in Bulgaria, and Cesarini died at the age of only forty-five. The Turks drew the noose tighter, and in a terrible bloodbath, overran Constantinople in 1453, with the help of renegade Western engineers serving the interests of the Venetian oligarchs. Only in the



Albrecht Dürer, *A Man Drawing a Lute*, 1525. *The Florentines discovered pictorial perspective, the principle of man's capacity to depict measurable space in a lawful way.*



EIRNS/Steve Meyer

Decorated niche, Orsanmichelle (shrine of the grain market), Florence. Sculptors included Donatello and Ghiberti.

last months of the siege did the Emperor finally have the Bull of the Union read in the church of Hagia Sophia, and by then it was too late. After they conquered Constantinople, the Turks imposed a new Patriarch, Gennadios, on the Greek Orthodox Church, who promptly renounced the *Filioque*.

Isidor of Kiev

The Metropolitan of Moscow, Isidor, merits a statue in his honor in Russia today for his courageous fight to

bring the Renaissance to Russia. He had led the Muscovite delegation to the Council, and had signed the Union proclamation and forced the other Russian delegates to also sign, not out of political motives but because of his deep study of the issues.

In Florence, when after fifteen sessions the question of the Holy Spirit was still being discussed, one opponent shouted angrily, "We would rather die than let ourselves be Latinized." Metropolitan Isidor opened the way for a solution by calmly saying, "We do not want to become Latins either, but the Fathers of the Eastern Church teach that the Holy Spirit proceeds also from the Son, thus it is right to come to an agreement with the Latin Church."

In agreement with the Byzantines, Isidor signed the Decree of Union for the whole metropolis of Kiev, including Moscow. Abraham of Susdal and others who had come from Moscow with him refused to do so. Isidor was made a Cardinal by Pope Eugene and appointed legate to facilitate the application of the Union.

Warmly received in Budapest in 1440 and even in Poland, Lithuania, and Kiev, which were still adhering to the Council of Basel, Isidor received a cold welcome in Moscow when he arrived March 19, 1441. Three days later, he celebrated mass at the Kremlin, in his cathedral, and as he had the Bull of the Union read, he was interrupted by the Grand Duke Vasilij, who arrested him and tried him as an apostate to the Orthodox faith.

Isidor fled to Kiev, where he built up a Western-tied school of thought. After many travels the "Ruthene Cardinal" died in exile, in Rome, along with Bessarion, who was forced into exile as well. Thanks to Isidor's lifelong struggle, even when the universal Union failed after the fall of Constantinople, the regional Union of his own church with Rome was saved. However, the Russian Orthodox Church declared itself autocephalous in 1448, on the basis of explicit rejection of the *Filioque*, and the doctrine of "Moscow as the Third and Final Rome" was born. This rejection of the Idea of Progress embodied in the Council of Florence is the

cultural root of subsequent Russian imperial designs on the West.

Renaissance Perspective

As the two major branches of Christianity convened to rediscover their common roots by studying the period of the early Christians' struggle against the Roman empire, they witnessed the rebirth of civilization before their very eyes, for they were surrounded by paintings, architecture, and sculpture that was based on a new mastery of the physical laws of the universe by man. The Florentine Renaissance, which we recognize today in these beautiful works of art, is the expression of the strategic and spiritual battle for the *Filioque*.

Ambrogio Traversari is credited with conceiving the program of one of the most celebrated works of the Florentine Renaissance, Ghiberti's "Gates of Paradise" for the Baptistery doors. One of the scenes, the Meeting of Solomon and Sheba, executed in 1435-7, has been interpreted plausibly as an advertisement for the Council of Florence, in which the Eastern Christians would accept the superiority of the Western doctrine of the Trinity, as graciously as Sheba was persuaded that the Jewish monotheism was superior to the animism of her native culture. The gilded bronze panel contains an apparent portrait of Traversari himself, looking directly out from among the "Westerners" in the entourage of Solomon.

Such high-level "political cartoons" depended for their powerful impact upon the primary achievement of Florentine art in this era, the discovery that the physical universe is measurable, and that the transformations between three-dimensional and two-dimensional space can be lawfully known to man, and made intelligible through art. This is known as the science of pictorial perspective, which applied projective geometry to the problem of representing three dimensions on a plane surface.

Brunelleschi discovered that instruments could be devised for mapping the points of intersection upon an interposed plane (the wall or panel of the painting) of light rays, which run from the boundaries of the solid object to the eye. The total of these rays were called a visual cone, or pyramid; thus their projection on the plane surface of the picture takes the form of a conic section. In its initial form,

what the Florentines called legitimate construction was premised upon the conceit of monocular vision, in which the "point at infinity" in the picture corresponded to a single eye-point, and they also imagined, contrary to nature, that the lines from the boundaries of the object to the eye are straight.

Although later theorists, most notably Leonardo da Vinci, were to effect further revolutions in the concept of applying mathematics to construction of pictures, the principle of man's capacity to depict measurable space in a lawful way represented an untransgressible law of nature which the Florentines were proud to have discovered. Through perspective, the fifteenth-century



Interior, Hospital of the Innocents, built by Brunelleschi, 1421.

Florentines defined painting as science, and although mastery of perspective does not in itself constitute good art, there is no retreat from that position, without descending into irrationality.

Progress Made Concrete

The delegates to the Council of Florence from the Byzantine East found themselves surrounded with buildings which proved man's ability to transform nature as "the living image of God," and with pictures and sculpture



Hagia Sophia, Constantinople.

which showed the method behind those demonstrations. In the paintings, sacred figures were depicted sharing a space with ordinary modern, middle-class individuals, and the pictures were implicitly only completed by the viewer, who was drawn into the action through the laws of perspective and proportion.

Most of the sessions of the Council of Florence were held in the Dominican church and monastery of S. Maria Novella, where, on the wall of the nave, a young genius named Masaccio, a protegee of Filippo Brunelleschi, had painted a fresco of the Trinity with life-size figures, demonstrating the application of the new science of perspective.

At the heart of the Florentine commercial district, the

shrine of the grain market, Orsanmichele, was decorated with niches in which over-life-size statues of saints stood: powerful portrait-like figures erected from 1400 onward, paid for by the local guilds, which emphasized the attributes which linked them to productive labor, such as stonecutting. These saints, made by Brunelleschi's collaborators such as Donatello and Nanni di Banco, and his rival Ghiberti, exalted the role of the leading citizen in the republic.

Near the Cathedral, the beautiful Hospital of the Innocents, an institution designed to shelter and educate abandoned children, had been built by Brunelleschi beginning in 1421. The Innocenti was the major vehicle of the appealing vision of Renaissance Florentines that, as author Philip Gavit puts it, "charity, tenderness, and compassion toward children were crucial to personal immortality, the survival of families, and the salvation of the State."

The young sculptor Luca della Robbia, taken under Brunelleschi's artistic wing after the death of Masaccio, was commissioned in 1431 to create the marble reliefs of the choirstalls, or cantoria, for the cathedral. These celebrated reliefs show children in the act of singing polyphonic music from the long scrolls then developed for multi-voice parts. The sculptor was at pains to capture the precise manner of singing by the choirboys, including not only the effort to produce a "head tone" through accessing the nasal passage, but the rounding of the mouth to produce the "round sound" for which the Italian school of singing, known

as *bel canto*, became famous (SEE Figure 1, page 7, this issue).

The Cathedral Cupola

The Bull of the Union was read from the pulpit under the shelter of the cupola which Brunelleschi had built. The cupola defied the fixed knowledge of previous generations of builders. It was an unprecedented artistic, engineering, and economic feat. The diameter of the Florentine cupola was much larger than that of Hagia Sophia in Constantinople, and was equal to the dome of the Pantheon built by Hadrian in Rome in the early second century A.D.. The Greco-Roman building technol-

ogy that had achieved those two earlier, hemispheric domes was long since lost. Since Hagia Sophia, which had been built by the Emperor Justinian in the sixth century A.D. was considered one of the wonders of the world, one can only imagine the shock of the visiting Byzantines when confronted with the Florentine achievement. A mere republic had outstripped the biggest domes of the first and second Roman Empires!

But there is more. Brunelleschi was faced with an aesthetic requirement far more demanding than the Greco-Roman models, because the dome of Florence

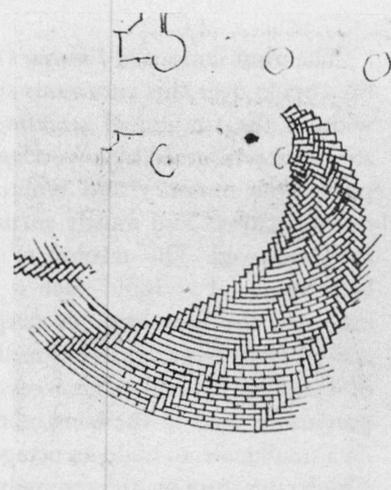
The herring-bone brickwork of the cupola reflected a grasp of the principles of "negative curvature." Above: exposed brickwork; below: original brick molds, museum display; center: contemporary diagram.



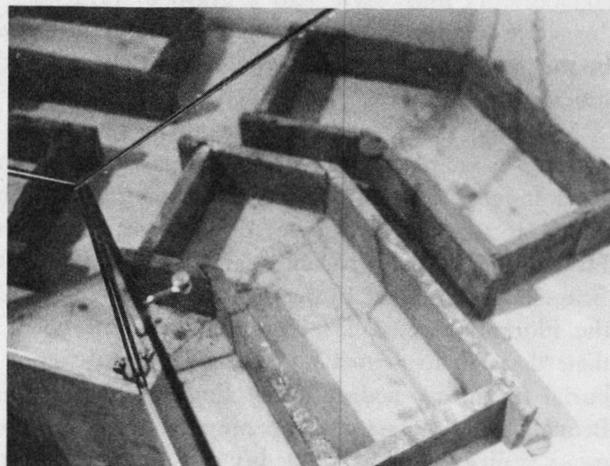
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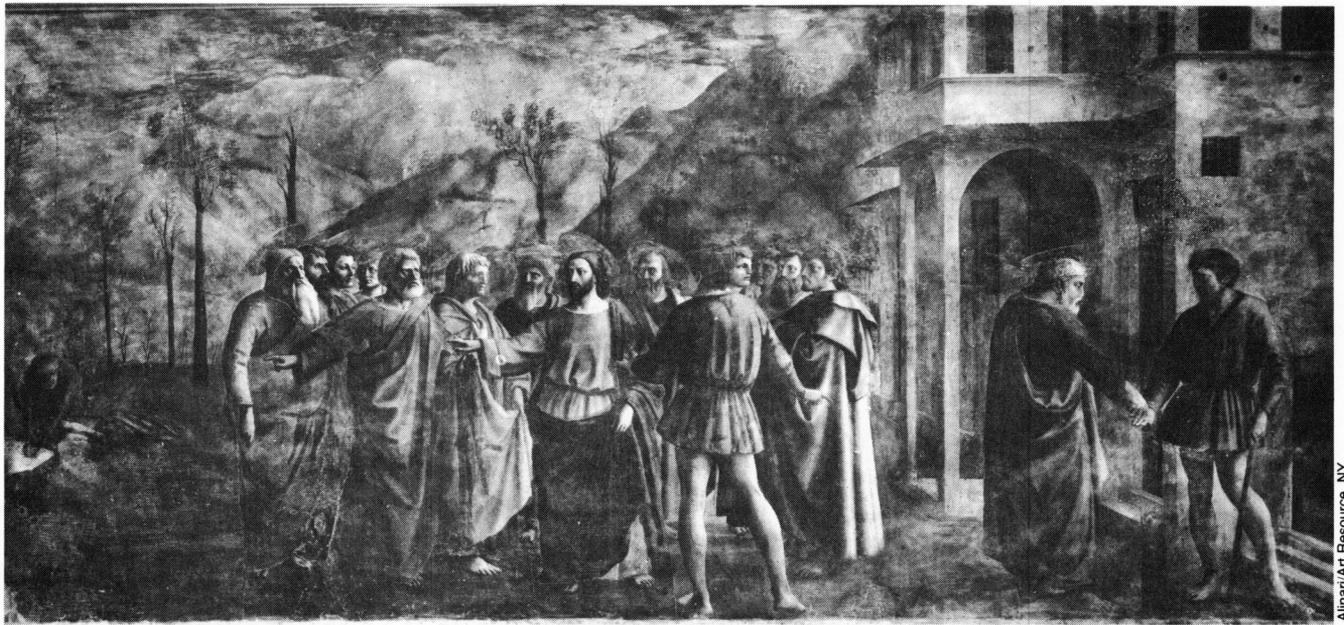
Cathedral of S. Maria del Fiore, Florence.



was to be imposing both on the outside and on the inside, just as the individual interacting with a free, republican society mirrors the internal beauty of his soul in the external beauty he creates in that society. The ancient domes had been designed to be magnificent within, but externally they lacked the concept of perspective by which the Brunelleschi dome, lifted on a high drum well over the shoulders of the cathedral nave vaults, dominates the entire city and surrounding hills as far as the eye can see. The cupola was the fitting manifestation of a culture that was fighting for the doctrine of the immortality of the *individual* soul and struggling to frame a constitution that would wed individual liberty to the highest common good.



EIRNS/Steve Meyer



Allinari/Art Resource, NY

Masaccio, *The Tribute Money*, *Brancacci Chapel*, *Carmelite Church*, *Florence*.

The most famous of Filippo's achievements in raising the cupola over this enormous space, was that he did it without the traditional *centering*, a pre-formed board structure reinforced by a wooden framework. This supported the masonry and remained in place until the mortar had set and mostly shrunk, and was then carefully removed. The amount of wood that would have been required to build such a centering not only far exceeded the Florentine exchequer, but may have required trees larger than those that grew in the forests of Tuscany. Brunelleschi successfully applied principles previously used in the construction of spherical domes on a small scale, to build an octagonally based dome with a high curvature on an extremely large scale. To do this, as Lyndon LaRouche has observed, Brunelleschi and his collaborators must have had a grasp of principles of "negative curvature," which were only understood again by the great mathematicians Gauss and Beltrami in the nineteenth century.

Secondly, Brunelleschi had begun a revolution in political-economy, by destroying the power of the mason's lodges, and introducing labor-saving machines which anticipated the advent of industrial capitalism. His achievement was partially recognized in 1446, after Brunelleschi had died, by the Consuls of the Wool Guild, the Florentine republic's strongest economic body, in their decision to accord him the exceptional honor of burial in the Cathedral. They singled out for praise Brunelleschi's success in cheapening the cost of the enormous project such that "by his careful economy, the

greatest expenses that it would have been fitting for his genius and intelligence to make, were removed."

Third, however, Brunelleschi himself conceived of his achievement on the level of the same concepts that were being fought for in the *Filioque* debate. In a famous exchange of sonnets in 1425, he replied to an invidious attack on the project by asserting:

When hope is given us by Heaven, . . . we rise above
corruptible matter
and gain the strength of clearest sight. . . . Only the
artist, not the fool
discovers that which nature hides.

In the final tercet of his sonnet, Filippo confidently concludes that his enemy's "sour notes" would be exposed, "when your 'impossible' comes to pass."

The Art of Masaccio

The art inspired by Brunelleschi applied to civic life the theology embodied in the *Filioque* principle. The expression of this idea is direct in Masaccio's "Trinity" fresco in S. Maria Novella (see photograph, page 17, this issue).

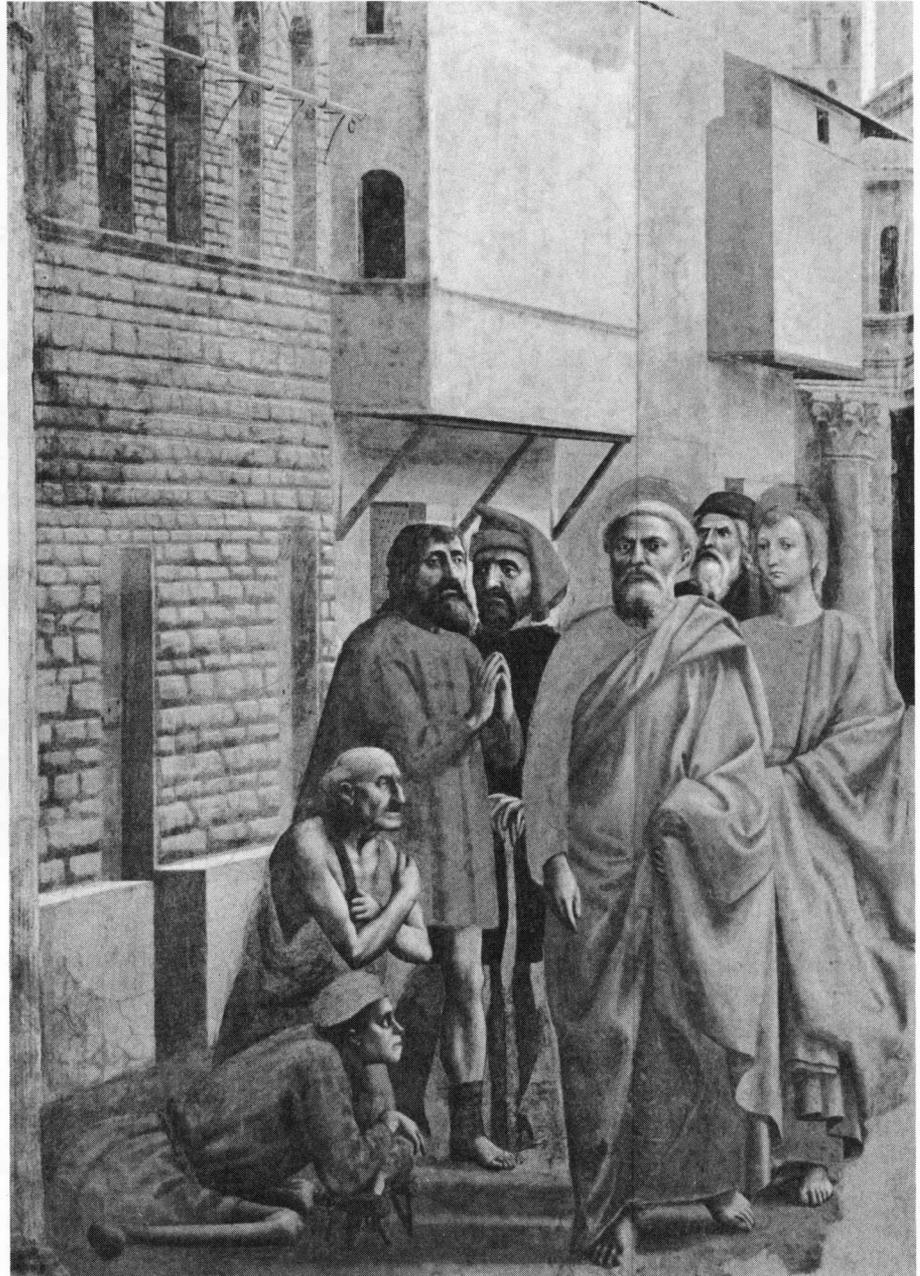
The painting on the wall of the church sets up a Platonic dialogue with the viewer. On the lowest level, below the point of perspective along the painted marble slab of the altar, lies a painted skeleton seen in a cutaway section of an imaginary tomb. A Latin inscription warns,

“Where I am, you shall be; where you are, I was.” With this reminder of our mortality, the eye of the viewer rises to confront two contemporaries, a high official of the Florentine state and his wife, who kneel on either side of the altar. Our eyes follow their prayers upward to the scene of historical Golgotha. A stern and sorrowful Virgin Mary looks directly out and points our attention to the crucified Christ on the cross. As we look upward, a fourth phase is introduced, like the Empyrean of Dante’s *Commedia*, which subsumes all lower-order geometries: for the figure of Christ doubles in his historical dimension as the crucified man and his eternal one as the second person of the Holy Trinity. The cross is both planted in the hill of Golgotha below, and seemingly suspended above from the arms of the Almighty Father. Between the two, there “proceeds” the dove of the Holy Spirit. The very reality which Aristotle denied—the possibility that the Eternal could intervene into Time—is played out before our very eyes, and made undeniable by the application of scientific perspective.

But the story is not yet complete. It must be completed by man, applying the creative powers which the divine gift of reason gives to him by reason of the *Filioque* principle. This entire sequence is enclosed within a magnificent architecture, a new, fully fledged chapel in the Renaissance style of Brunelleschi, painted on the wall of the Gothic church. Masaccio has evoked a kind of building which, at the time he painted this, did not yet exist. His painting exists within an architecture, and his architecture exists within the painting, forcing the viewer to come to terms with the Idea of Progress unfolding before his very eyes.

Similarly, the frescos of the Brancacci Chapel in the Carmelite church also represented an intervention into the philosophical and political struggles of the day.

What better way than through the life of St. Peter, to put forward a reform program for the successors of Peter in the Holy See? In the celebrated mural of “The Tribute Money,” three successive moments of the encounter of Christ and the Apostles with a tax collector are shown. In the central scene, a bumptious Peter is thrown off balance when he tries to strike the tax collector, and Christ prevents him with a gesture that directs the disciple to the nearby lake and tells him to catch a fish. From this productive work he extracts wealth from the sea in



Masaccio, St. Peter's Shadow Healing the Sick, *Brancacci Chapel, Carmelite Church, Florence.*



Scala/ART Resource, NY

Masaccio, St. Peter's Vision of God at Ephesus, *Branccacci Chapel, Carmelite Church, Florence.*

the form of a coin, which Peter uses to pay the tax. Finally, the erstwhile comic figure of Peter is transformed into a figure of great dignity as he pays the tax, while his persecutor, the tax collector, now turned around to face us, is exposed as a misshapen individual with an ugly face and a crippled leg.

This transformation comes about because of Peter's obedience to Christ. His faith causes him to act on the basis of reason. In the process, Peter is transformed. The remaining scenes of his life on the walls of the chapel all take place after the ascension of Christ into heaven. In one of them Peter, taking the place of Christ, carries out

the same kind of transformation he himself had undergone. Walking down a Florentine street, the apostle heals three citizens with his shadow. The three individuals appear as three stages of development, from the lowest level of a man bestialized by disease and poverty, to the semi-human man rising to his feet, and finally, the standing figures of two craftsmen of the city. The message of Christianity is the message of such transformations. A recent restoration of the chapel reveals that here, too, Masaccio completed the scene with a fourth level, opening to a piazza with a Renaissance church facade behind the figures.

Comparing the face of Peter in the first moment of "The Tribute Money" to his face in these subsequent stories, and finally in his ecstatic vision of God at Ephesus, we witness a face which has gone from ignorance and susceptibility to the impulses of the moment, to the face of a man completely committed to God, even at the cost of his physical existence. For Masaccio, the friend and disciple of Brunelleschi, Peter is worthy to be Christ's vicar on earth *because* he can develop in this way.

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Columbus and Toscanelli

by Ricardo Olvera

One of the most controversial matters relating to the discovery of the Americas relates to the Italian Renaissance. In the scientific seminars held during the Council of Florence, Paolo dal Pozzo Toscanelli presented his idea of the project. Based upon the scientific information brought by cosmographers, geographers, and experts in the science of navigation gathered there together, the general lines were traced of what would, fifty-three years later, become the “greatest event after Creation,” according to one Spanish author—the discovery of the New World.

The direct connection between the Italian Renaissance and the Spanish exploit is established by the correspondence between Paolo dal Pozzo Toscanelli and Christopher Columbus. In Toscanelli’s letter to Columbus in 1480, and in the ones written by him six years before to Fernão Martins, agent of the Portuguese King Alfonso V, the Florentine scholar urged the Iberian powers—Portugal and Spain—to realize the transatlantic project discussed in Florence, and he laid out for them the map and the scientific information required for its success (SEE Map I).

As Fernando Columbus, Christopher’s son, reports in his *Life of the Admiral*, the basis upon which his father founded his project was as follows:

A Master Paolo, physician of Master Domenico, a Florentine contemporary to the same Admiral, was the cause in great measure of his undertaking this

This article, translated by Rick Sanders, has been excerpted and adapted from “The Discovery of the Americas and the Great Scientific Project of the Renaissance,” which appeared in the Spanish-language magazine Benengeli, Vol. 2, No. 1 (1987).

voyage with greater spirit. The fact that the cited Paolo was a friend of Fernão Martins, canon of Lisbon, and that the two were writing letters to each other about the sea voyages made to the country of Guinea during the time of King Alfonso of Portugal, and about what could be done in the westward direction, came to the ears of the Admiral who was most curious about these things. And he hastened to write, by way of one Lorenzo Girardi, a Florentine who was in Lisbon, to the said Master Paolo, about this, and sent to him an armillary sphere, revealing to him his intent. Master Paolo sent him a reply in Latin. . . .

Later Fernando Columbus transcribes the first letter from Toscanelli to Christopher Columbus:

To Christopher Columbus, Paolo, physician, greetings.

I see this magnificent and grand desire of yours to see how to get to [the regions] where spices are born, and in reply to your letter I send you a copy of another letter which I wrote some time ago to a friend and familiar of the most serene King of Portugal, before the Castillian war, in reply to another letter which by commission of his Highness was written to me about the said matter; and I send you another such map of sailing, as the one I wrote to him, through which your questions will be satisfied.

Toscanelli affixed to the bottom of his letter to Columbus, a copy of the letter which he had sent earlier to Fernão Martins, the canon who operated as an intermediary between the republican networks of Florence, and those republicans who were trying to convince the King of Portugal to put the navigational capacity of that country in the service of this great project. This letter had been directed at awakening the commercial interest of

the powerful, painting with vivid colors the fantastic riches of the Far East; and attached to it was the *carta de marear* or “navigational map,” which Columbus never let out of his sight for even a moment, during his first voyage.

Did Toscanelli believe that following his navigational plan, the coasts that one would see rise on the horizon would be those of the Orient? Or did he perhaps expect those of a new continent? One fact makes us suspect the latter: the distance at which Columbus encountered America, and likewise the principal geographic and nautical characteristics of the route, were precisely those of Toscanelli’s navigational map. Instead of fantastic palaces covered in gold and the refined civilization of the Orient, Columbus encountered an almost savage continent, in which everything still needed to be done. The prevailing mentality of the courts of Europe at the time, would have made it very difficult to find support for a project involving so much nature and so little art.

Either way, Toscanelli and the strategists of the Renaissance succeeded in their plan to mobilize the maritime-commercial powers to an enterprise which the “experts” of the age considered “not income-producing” (just as today, the cost-accountants consider the project of colonizing the Moon and Mars as not “income producing”), and such experts notwithstanding, there was opened up for humanity the most formidable period of development of which we have memory.

Are Toscanelli’s Letters Genuine?

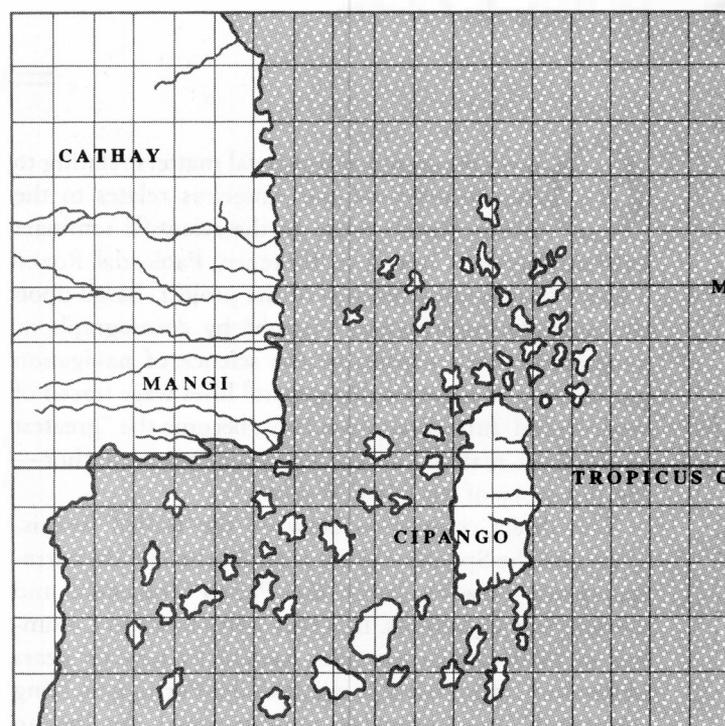
At the Congress of Americanists held in Paris in 1900, Henry Vignaud, then First Secretary of the American Embassy in France, denied for the first time the authenticity of the famous correspondence between Toscanelli, Martins, and Columbus, in a document which was immediately widely diffused through the press of the day. Over the years since 1900, the vital and previously well-known link of Columbus to Toscanelli—and thus, to the Council of Florence—was hidden, and ultimately, forgotten.

In essence, Vignaud said that the discovery of the Americas was not the result of any scientific project, but rather of chance. According to Vignaud, Columbus never had any intention of reaching Asia, let alone the New World, but only of reaching one of the islands located west of the Canaries. If by chance Columbus did have any scientific theory, he would not have gotten this from Toscanelli, nor from any of the cosmographers of the Renaissance, but from Ptolemy, Aristotle, and other “authorities” of medieval geography and cosmography.

Vignaud based this on his “demonstration” that the

letters of Toscanelli to Christopher Columbus, and above all from Toscanelli to Fernão Martins, were apocryphal. In refuting this assertion, the historian Clement Markham argued that

[f]ew documents of this period are so well certified [as this letter]. Las Casas, an absolutely trustworthy and honest historian, not only furnishes us with a Spanish translation, but informs us that one part of the original, it seems, the navigational map adjoined, was in fact in his possession at the moment of writing. In the *Life of the Admiral*, by Fernando Columbus,



MAP I. Reconstruction of Toscanelli’s map sent to Columbus in 1480.

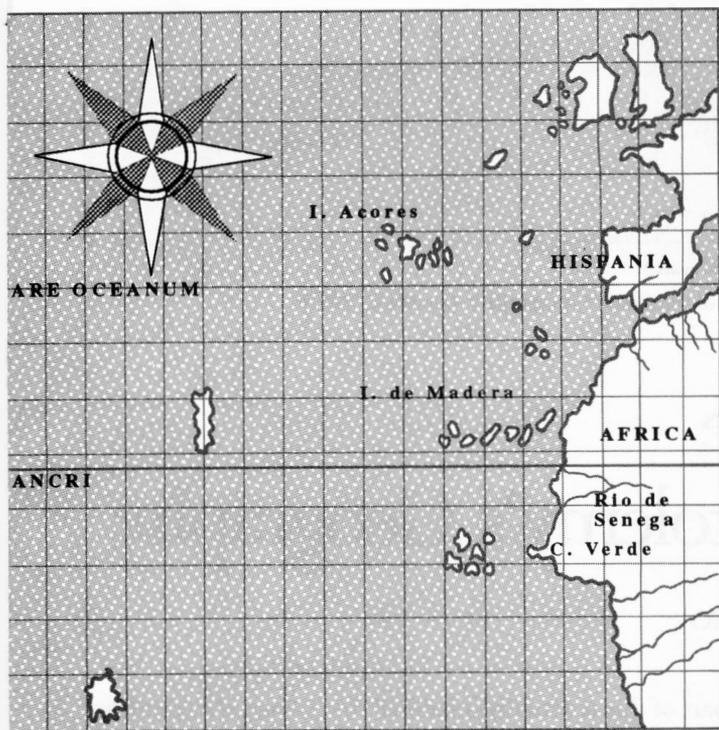
there is included an Italian translation. And one copy of the original version in Latin was found in the Columbus Library in Seville in 1860, in the frontispiece of a book by Pius II which had belonged to Christopher Columbus, written in the Admiral’s own hand.¹

In a reply to Markham, Vignaud attempted to bolster his claim by arguing that Fernão Martins never existed, and that *he was a mere invention*, created to explain the inexplicable: the tie between Columbus and Toscanelli—which was impossible according to Vignaud, because Columbus was never in Florence, and Toscanelli never left Italy.

Did Fernão Martins Exist?

Ironically, by questioning the existence of Fernão Martins, Vignaud actually helps us to highlight the point of conception of the Renaissance exploration project.

For in the work of Cardinal Nicolaus of Cusa entitled *Tetralogus de Non Aliud* (*Tetralogue on the Not-Other*), there unfolds a Socratic dialogue between “Nicolaus” and three interlocutors, of whom the main one is *Fernando Martin Portugaliensi natione*, canon of Lisbon, whose full name is Fernão Martins de Roritz (from the



town of Roritz in Portugal). The other two are Oanes Andrea Vigerius, or Gian Andrea, from Vigevano in northern Italy; and Petrus Balbus Pisanus, or Pietro Balbi, born in Pisa, a former study companion of Cusa and Toscanelli in Padua. This same Fernão (Martins) of Roritz, relative and private councillor to Alfonso V, would, together with Toscanelli, later sign on Aug. 6, 1464, the last will and testament of Nicolaus of Cusa, as a witness and as his personal doctor; a few days later, he would attend Cusa’s funeral.

A relative of Fernão Martins also enjoyed the confidence of Cardinal Cusa: Antonio Martins, the bishop of Oporto, born in Chavez, a town near Roritz. It is this Antonio Martins who had accompanied the cardinal’s delegation to Constantinople in 1437, sent by Pope Eu-

gene IV to convince the Emperor and the Patriarch of Constantinople of the need to be present at the Council.

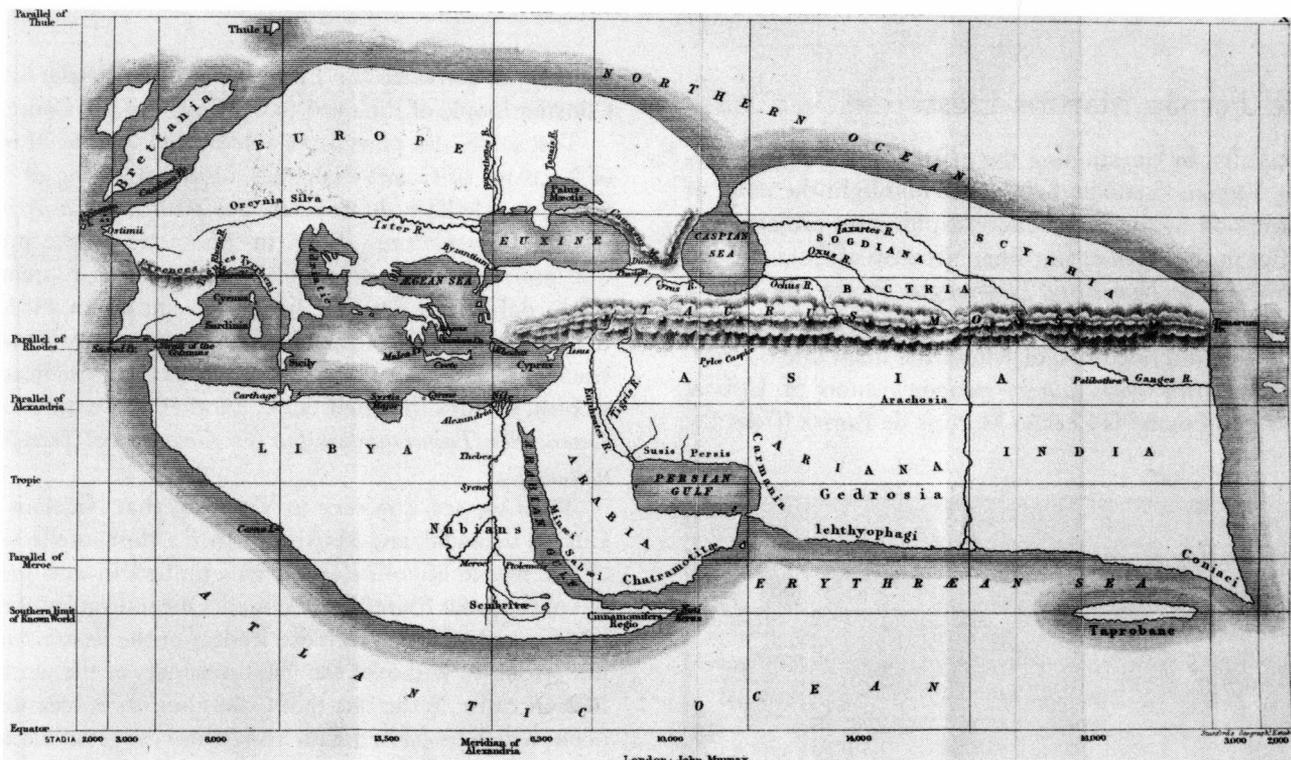
Toscanelli also played the role of interlocutor in one of Nicolaus of Cusa’s dialogues, on the squaring of the circle, entitled *De Arithmetis Complementis* (*On Arithmetical Complements*). Born in 1397, one of the most outstanding participants in the Council of Florence, Paolo dal Pozzo Toscanelli died at age 88, in 1482, a decade before the realization of his great project. He had been Cusa’s fellow student in Padua, and Cusa dedicated to him, besides the cited book, another one entitled *De Geometricis Transmutationibus* (*On Geometrical Transformations*).

Thus we see, contrary to Vignaud, that Nicolaus of Cusa, Toscanelli, and Martins formed a close intellectual circle, whose scientific work was unified in and grew out of the great Florentine Council. One indication of the educational efforts which the leaders of the Renaissance undertook to win over the “best mariners of the world” to their cause, is the fact that Columbus’ most treasured book, which he carried with him in his voyages of discovery, was the *Historia rerum ubique gestarum* (*Universal History of Facts and Deeds*) of Pope Pius II—the humanist Aeneas Silvius Piccolomini—in whose frontispiece Columbus himself had copied in his own hand Toscanelli’s map. It had been Piccolomini who penned the great lament at the fall of Constantinople to the Turks in 1453: “This is a second death for Homer, a second death for Plato: now where will we be able to find the works of genius of the Greek poets and philosophers?”

Pope Pius II died on Aug. 14, 1464, three days after Cardinal Cusa, and the chances of an immediate Christian crusade to liberate Constantinople and free the Mediterranean from Turkish control, were sharply reduced; this thread would be picked up later, through the Reconquest of the Iberian peninsula, brought to a close in 1492 by the same Ferdinand and Isabella who would dispatch Columbus that same year on the greatest military flanking move in history—to bypass the Venetian-Turkish stranglehold, and reach the east by the rear, going west across the feared *ocean-sea*. And thus it was that, after the deaths of Cusa and Pius II, the scientist Toscanelli returned to Florence “to continue his studies, turning his face not to the east, but to the west, thinking about a new route for commerce and for civilization.”²

NOTES

1. Clement R. Markham, *Toscanelli and Columbus: A Letter from Clement R. Markham to Henry Vignaud* (London: Sands and Company, 1903).
2. Angel de Altolaguirre y Duval, *Cristobal Colon y Pablo del Pozzo Toscanelli* (Madrid: Imprenta de Administracion Militar, 1903).



Reprinted from sources in the George Peabody Library of the Johns Hopkins University

MAP II. *The World of Eratosthenes, in E.H. Bunbury's A History of Ancient Geography (London, 1879).*

SYMPOSIUM

The Battle Against Ptolemy's Geography

by Salvador Lozano

When the sages gathered at the Council of Florence examined the viability of the project which came to life in the voyages of Christopher Columbus, they first had to settle various questions related to the form and composition of our planet which had been discussed for many decades.

For example, in the absence of precise geographic data, the distance to be navigated westward from Europe before finding land must be estimated from the size of the globe; the probable proportion between the surface area of land versus water; and so forth. On the other hand, to plan explorations, they had to resolve the double question: which part of the world is habitable, and which

part of this is actually inhabited. In essence, the scientists of the Renaissance were making the same kinds of conjectures that we do today when discussing the conquest of the solar system.

The geographical knowledge of Mediterranean civilization had arrived at a high level just prior to the beginning of the Christian era. Outstanding for their contributions were Eratosthenes, the astronomer Hipparchus of Rhodes (second century B.C.), and the historian Strabo (first century B.C.). Maps II and III are the maps derived from the work of Eratosthenes and Strabo, respectively, and illustrate, among other things, the fact that they were well aware that Africa came to an end at a southern cape that was circumnavigable. It is probable that they knew of the Phoenician expedition sent about 609-593 B.C. by the Egyptian Pharaoh Necho II to circumnavigate Africa by departing from the Arabian Sea, as reported in the famous account by Herodotus in *The Histories*.

This article, translated by Rick Sanders, has been excerpted and adapted from "The Geography of Exploration and the Fraud of Ptolemy," which appeared in the Spanish-language magazine Benengeli, Vol. 2, No. 1 (First Quarter, 1987).

It is worth noting that Hipparchus subjected the work of Eratosthenes to stringent criticism, for his lack of rigorous method in dividing the map into zones and in situating places with precision, a method which must be based in the exact placement of parallels and meridian lines from astronomical observation. Hipparchus, who compiled a catalogue of no less than 1,980 stars, followed this method to correct the location of a good number of places, using for the first time in cartography the division of the Earth's circumference into 360°.

It must be kept in mind, however, that the various volumes of the *Geographika* of Strabo constitute more a formidable descriptive encyclopedia, than a conceptual work Hipparchus-style. In fact, regarding astronomical or mathematical material, Strabo frequently refers his readers to Hipparchus.

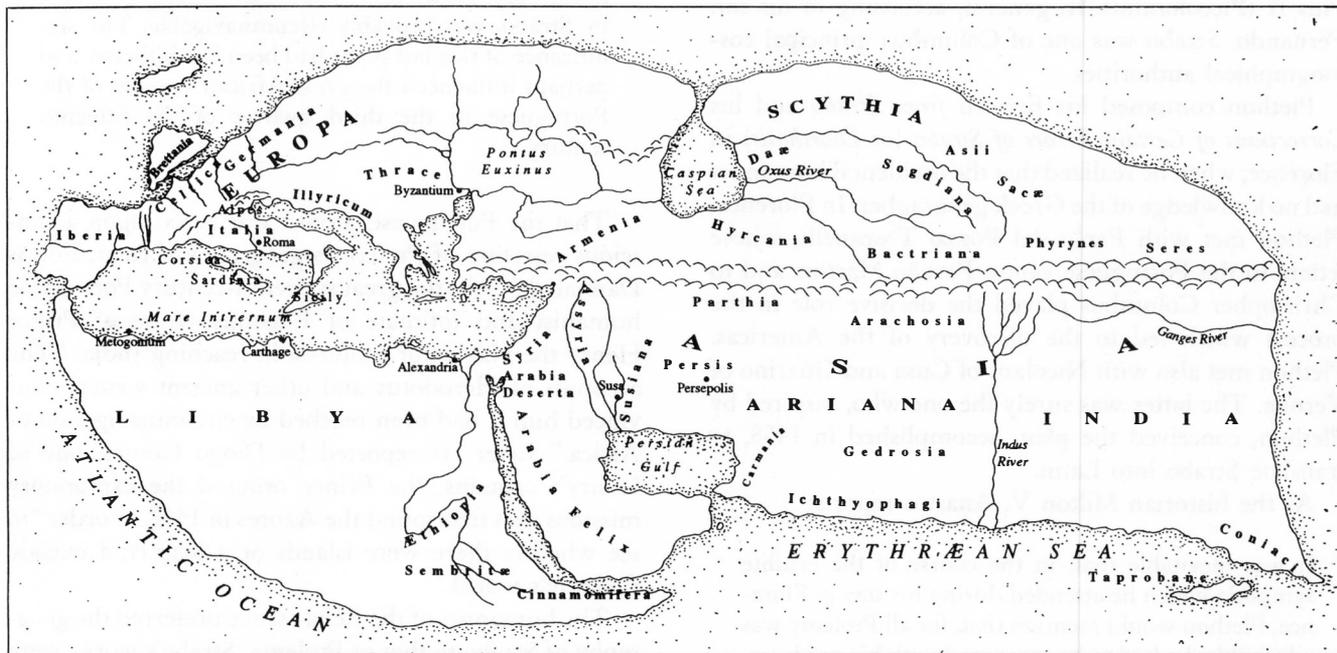
Some three hundred years after the death of Hipparchus, the fanatical Aristotelian Claudius Ptolemy (90-168 A.D.) became director of the library of the Alexandrian Museum. One of the biggest intellectual swindlers in history, who perpetrated frauds in astronomy, optics, and music, as well as geography, Ptolemy concocted a series of fables of which the most scandalous was that Africa is not circumnavigable because it is connected to an unknown land (*terra incognita*) which entirely surrounds the Indian Ocean (SEE Map IV). As for the distribution of land and water on the planet's surface, Ptolemy spread the discouraging idea that water covers upwards of five-sixths of the whole planet. Moreover, he placed rigorous limits on the habitable and the inhabited world.

The Council of Florence

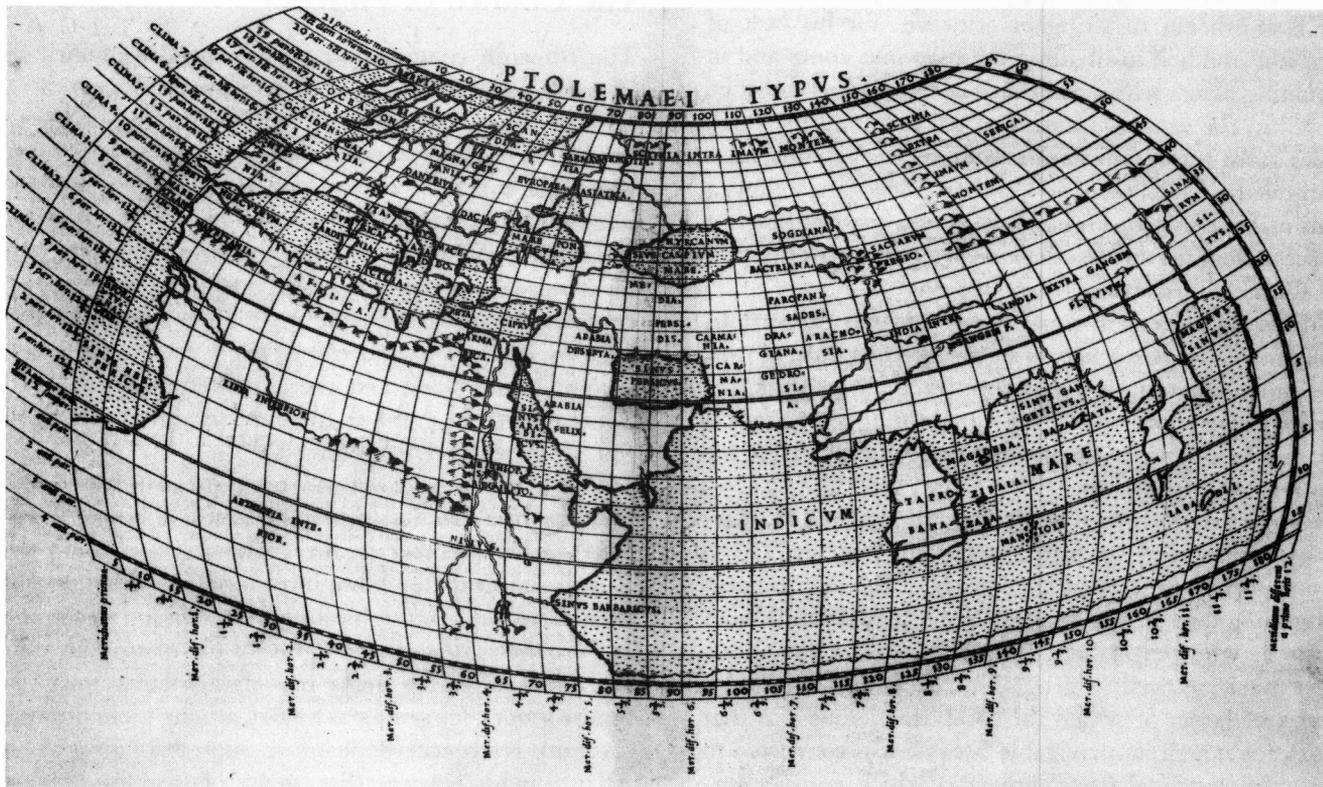
The fifteenth century, the century of the Council of Florence and the discovery of the Americas, provides a vista of bitter conflict: the efforts of the humanists to resolve the geographical questions posed by the great project of exploring the western route to the East, collided with the attempts to obscure all this through the charlatantry of Ptolemy and his promoters—especially as his treatise *Geographika Syntaxis*, which had been almost completely forgotten during the Middle Ages, had only recently been translated from Greek into Latin, a task accomplished, aided and abetted by strenuous promotional efforts, by Jacobus Angelus de Scarparia a mere thirty years before the Council.

One of the decisive events at the Council in this respect was that the erudite Greek, Gemistos Plethon (1389-1464), a lay member in the group accompanying the Paleologue Emperor John, introduced the Western humanists to the geographical encyclopedia of Strabo.

Fernando Columbus, the son of the discoverer, calls our attention to the many reasons his father found in Strabo's work for sailing as he did, among them Strabo's favorable references to the information Plato gives about Atlantis in his *Timaeus*. (For, in the *Timaeus*, based upon very ancient oral traditions, Plato speaks of "terra firma situated on the other side of this true ocean," which could be reached by sailing "from one island to another.") Columbus must have cited this and other observations directly from Strabo's text, since none of these quotes are given in other works by other authors whom Colum-



MAP III. *The World of Strabo. Reconstruction based on E.H. Bunbury's A History of Ancient Geography (London, 1879).*



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MAP IV. *The World of Ptolemy, in Girolamo Ruscelli's La Geografia di Claudio Tolomeo (Venice, 1561). Note the strip of land which connects Africa to Asia and encloses the Indian Ocean—making the circumnavigation of Africa impossible.*

bus had studied or annotated. Columbus referred to Strabo to support the notion that there exist habitable regions as yet unknown; and he frequently referred to Strabo in his comments on the *Historia Rerum* of Pope Pius II (Piccolomini). In general, according to his son Fernando, Strabo was one of Columbus' principal cosmographical authorities.

Plethon composed his *Extracts from Strabo* and his *Corrections of Certain Errors of Strabo* (or *Diorthosis*) in Florence, when he realized that the occidental humanists had no knowledge of the Greek geographer. In Florence, Plethon met with Paolo dal Pozzo Toscanelli, whose letters to the Portuguese canon Fernão Martins and to Christopher Columbus played the decisive role in the process which led to the discovery of the Americas. Plethon met also with Nicolaus of Cusa and Guarino of Verona. The latter was surely the one who, inspired by Plethon, conceived the plan, accomplished in 1458, to translate Strabo into Latin.

As the historian Milton V. Anastos reports:

It was inevitable that, in the course of the erudite symposia which he attended during his stay in Florence, Plethon would mention that, for all Ptolemy was admirable, he had to be compared with his predecessor, Strabo, whose *Geographika* corrected and aug-

mented in many points the work of Ptolemy on the same subject. Among other things, he will have drawn people's attention to, as he does in the *Diorthosis*, Ptolemy's idea that the Indian ocean is landlocked being very questionable; and that Africa, as taught by Strabo, was probably circumnavigable. The significance of this last point had been lost hitherto, and perhaps influenced the great African voyages of the Portuguese in the third quarter of the fifteenth century.

That the Portuguese project was based upon a conscious rejection of Ptolemy's geography is clear. For as Damiao de Gois, the great sixteenth-century Portuguese humanist and intimate of Erasmus wrote of Prince Henry the Navigator's interest in reaching India: "The accounts of Herodotus and other ancient writers convinced him it had been reached by circumnavigation of Africa." Later, as reported by Diogo Gomes, one of Henry's captains, the Prince ordered the exploratory missions that first found the Azores in 1432, in order "to see whether there were islands or a mainland outside Ptolemy's world."

The humanists of the Renaissance preferred the geography of Strabo to that of Ptolemy. Strabo's works were printed various times between 1469 and 1473, before the

work of Ptolemy was even printed for the first time, in 1475. Pope Pius II definitively rejected the Ptolemaic description of Africa and adopted that of Strabo—which was that of all the classical Greek geographers.

This illustrious Pope says, in his *Asiae Europaegue Elegantissima Descriptio*:

Asia is joined to Africa by the nape of Arabia which separates our sea [the Mediterranean] from the Arabian Gulf. No one denies this; but he [Ptolemy] adds that at a certain point, they are connected by an unknown land mass which encloses the Indian Ocean. In this opinion he is almost alone. Because all the ones we know who wrote about the features of the Earth, place the Indian Ocean south and east,

without ascribing to it any limit, hence they are of the opinion that it is a part of the *ocean-sea*, as recorded by those who navigated from the Arabian Gulf to the Atlantic Ocean and the Pillars of Hercules.¹

For this reason, when Bartolomeo Diaz circumnavigated the Cape of Good Hope, Christopher Columbus judged the event, and rightly so, as the practical refutation of the Ptolemaic description of the limits of the inhabited world, and a powerful argument in favor of the project in which he played such an outstanding part.

NOTES

1. A clear reference to the expedition of Pharaoh Necho II.

SYMPOSIUM

The Science Behind Columbus

by Rick Sanders

For the modern reader, the attempt to discover the scientific and technological significance of Columbus' 1492 voyage is probably almost as difficult as it was for him to do what he did in the first place. Even leaving aside the politically motivated detractors of Columbus and his exploit, his admirers are not always helpful. Admiral Samuel Eliot Morison, for example, tries to have it both ways. First, he says that Columbus was barely capable of using the astrolabe and the quadrant, and that he underestimated the size of the Earth by twenty-five percent; later, he goes on to say that Columbus was among the world's best navigators, and that "no man alive, limited to the instruments and means at Columbus's disposal, could obtain anything near the accuracy of his results."¹

To understand the outlines of how the science of Renaissance navigation positioned Columbus to undertake his great voyages, we have to answer the following questions:

- What general cosmological and navigational knowledge, other than the astronomical sciences, was required to carry out the 1492 exploit?

And, as to the astronomical sciences, we must know:

- With what kind of accuracy could Columbus determine latitude? Did he use the stars, the sun, or both?
- How close was Columbus in his estimate of the Earth's circumference?

- If Columbus knew the Earth's circumference, did he know the size of the "hole" between Spain and "Cipango" (Japan); that is, did he know to what longitude Asia stretched, so that he might calculate the actual distance between East Asia and Spain?
- Did Columbus have any reliable way of finding longitude?

Cosmology and General Seamanship

Cosmology

The "politically correct" cosmological view at the beginning of 1492—despite the counter-tradition of Nicolaus of Cusa and the Council of Florence—was that of Aristotle and Ptolemy, that the known world was an island in the midst of a chaotic, untraversable ocean. Columbus had the courage to accept instead the conclusions of Pierre d'Ailly, Cardinal of Cambrai, who in his 1410 *Imago Mundi* said:

The length of the land toward the Orient is much greater than Ptolemy admits. . . . For, according to the philosophers and Pliny, the ocean which stretches between the extremity of further Spain [Morocco] and the eastern edge of India, is of no great width. For it is evident that this sea is navigable in a very few days if the wind be fair. [This part is heavily underscored by Columbus in his copy of the book.]²

The Winds

Columbus assimilated the knowledge passed on to him by the Portuguese—including the portolan sailing charts and maps that he inherited from his father-in-law, Bartolomeo de Perestrello—and combined it with his own sailing experience and observations made while living in the Azores—for example, that between 25°N and 30°N, the wind blew steadily from the east, whereas at the Azores, the wind blew steadily from the west. Hence, without hesitation—clearly, he had mapped it all out in advance—Columbus sailed straight down to the Canaries, virtually due west at the right latitude; while on the way back, he sailed north as fast as he could to the latitude of the Azores, and then due east.³

The Magnetic Compass

Sailors, even well-versed in navigational astronomy, and with modern navigational aids, must still use *dead reckoning* to get an approximate position. In first approximation, you assume the small surface you are covering to be flat, estimate your average speed, compensate for any currents, plot how far you have travelled north or south, and east or west, and complete the triangle. But on a cloudy day—or cloudy weeks, as is often the case in the North Atlantic—you must have a magnetic compass to determine the direction in which you are sailing.

The magnetic compass had arrived in Europe probably from China some time between 1000 and 1111 A.D.. Now, the magnetic field lines of the Earth are relatively constant (changing only over decades or centuries) for a specific latitude and longitude; and even though it is true that the magnetic compass did not point exactly to true astronomical North in Europe at the time of Columbus, this variation was constant and was routinely corrected for, using astronomical readings, by compass makers.

But, when you change longitude and latitude, your compass may begin to vary wildly. As Alexander von Humboldt recounts Columbus' experience:

The important discovery of the magnetic variation, or rather, that of the change of variation, in the Atlantic Ocean, belongs, without any doubt, to Christopher Columbus. He found on his first voyage, on the 13th of September 1492, that the compasses, whose declination had been up till then to the north-east, declined towards the northwest, and that this declination to the west increased the following morning. On the 17th of September. . .the magnetic declination was already a quarter of a wind, "which very much frightened the pilots." . . .

The observation of the 14th of September 1492 [marks] a memorable epoch in the annals of *navigational astronomy* of the Europeans. [All emphasis and quotation marks in the original.]⁴

Humboldt makes clear that Columbus' discovery was not that of the *variation* of the magnetic compass, but that

west of the Azores, the *variation* itself *varied*, that from N.E. it became N.W., and that on one occasion when none of the eight or ten pilots travelling with him had any idea where they were, Columbus used the declination of the compass to assure everyone that he knew where they were, one hundred leagues west of the Azores.⁵

Latitude

Any amateur astronomer can determine his latitude *on land* within a half a degree or so, with a simple homemade quadrant. It is enough to measure how far Polaris (the Pole Star) is above the horizon: that angle is your latitude. At the time of Columbus, Polaris was about 3½° off true North, so simple corrections based on the relative position of the two brightest stars of the Little Dipper, or the position of Cassiopeia, were required. A simple way to do this was written into the main handbooks, such as the oldest surviving navigation manual, the *Regimento do Astrolabio e do Quadrante*.⁶

The other primary way of determining latitude is to measure how far the sun is above the horizon at noon, take into account the declination of the sun above or below the celestial equator for that day. The information required to do this—primarily the tables of declination for the sun—were to be found in the same *Regimento*, in the section on the "Rule of the Sun," which gave the sun's position in the Zodiac, and its declination day by day. According to historian of navigation E.G.R. Taylor, "in the list of latitudes which the manual provides, the positions are with few exceptions, correct within half a degree—often to within ten minutes."⁷

But, could navigators determine their latitude from shipboard? Yes, but less accurately. There are places to stand on a ship where the pitch and roll are very small; then you could take various readings, compensate for motion, etc. Navigators must have been able to do this quite accurately, or else common "latitude sailing"—sailing along a latitude line—would have been impossible.

Columbus Knew the Earth's Circumference

A common piece of disinformation circulated to discredit the project that culminated in the discovery of the Americas, is that "Columbus underestimated the size of the Earth by twenty-five percent." This allegation is backed

up by a dispute over the length of the “mile” and “league” in Columbus’ day.

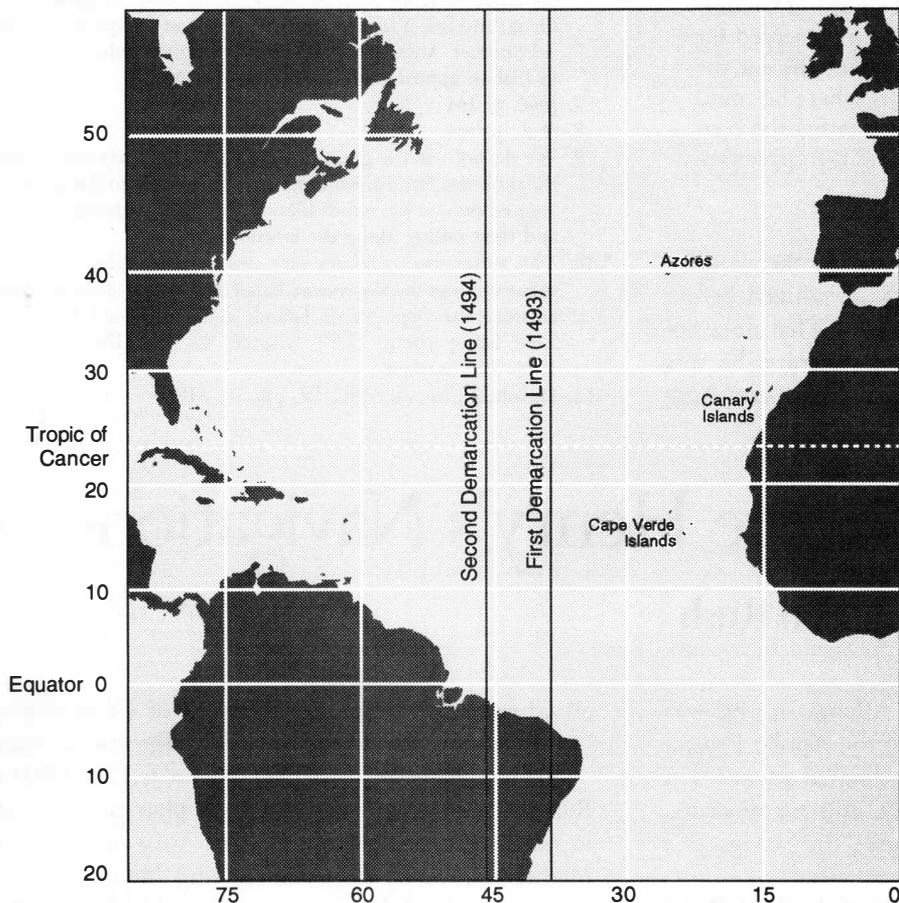
However, there is a direct and obvious way to prove the contrary—that Columbus knew the circumference of the Earth virtually exactly.

Columbus got his education in advanced navigation in Portugal. The oldest surviving navigation manual, the *Regimento do Astrolabio e do Quadrante* cited above, contains a statement that allows us to prove without serious doubt that the length of the league used at the time of Columbus was correct, and corresponded to the correct circumference of the Earth:

Know that the degree of North-South is $17\frac{1}{2}$ leagues, and that sixty minutes make a degree.⁸

Proof

We can prove the length of the league, using the Second Demarcation Line, which today’s scholars show cutting Brazil at 46.5° West—just as it appeared on the Portuguese *Cantino World Map* of 1502 (SEE Map V). According to the 1494 Treaty of Tordesillas, this line was to be located “370 leagues west of the Cape Verde Islands.”



MAP V. The Second Demarcation Line, 1494.

- Since the average longitude of the Cape Verde Islands is 24° West, the difference between the Islands and the Demarcation Line is $46.5^\circ - 24^\circ = 22.5^\circ$;
- Therefore, the linear distance⁹ between the Islands and the Demarcation Line is $22.5^\circ \times 111.116 \text{ km} \times \cosine 16^\circ$ (the average latitude of the Cape Verde Islands) = 2,403.26 km;
- Therefore, since 370 leagues was set at 2,403.26 km, 1 league = $2,403.26 \div 370 = 6.4953 \text{ km}$;
- And, since according to the *Regimento* there were 17.5 leagues to the degree,¹⁰ the circumference of the Earth would come be to $17.5 \times 360 \times 6.4953 = 40,920.4 \text{ km}$.

The actual average value for the Earth’s circumference is calculated today at $111.116 \text{ km} \times 360^\circ = 40,001.8 \text{ km}$!

Distance between Spain And ‘Cipango’ (Japan)

This is a more difficult question, since maps before Columbus do not show a continent between “Cipango”

and Europe. It appears that Marco Polo did not know how to determine longitude (which became possible only in the late fifteenth century, when almanacs began to be published predicting eclipses and occultations of planets and stars by the moon). Marco Polo seems to have estimated the distance he travelled by the land equivalent of dead reckoning, something which is not easy, given mountain ranges, deserts, and so forth. Thus, even if the size of the Earth were known, it would be difficult to determine with any degree of exactitude, the size of the “hole” between the Canaries and “Cipango” (SEE Map I).

Our best guess is that the Florentines, basing themselves on Plato’s account of Atlantis, or on Pliny, or on Pierre d’Ailly, might have concluded that there was land about thirty days sailing west. Perhaps they thought this was India; perhaps, something else.

Longitude

Columbus, along with Amerigo Vespucci, was at the absolute frontier of technology in his attempts to get an accurate measure of longitude. As reported by Alexander von Humboldt:

[The] desire [of Vespucci and Columbus] to substitute the observation of the conjunction of the planets and the moon for lunar eclipses, and of thus increasing the ways of determining the longitude of a ship, was due to the influence exercised in Spain and Italy of Arab astronomy. From the century of Albategni to the work of Ibn Jounis, a long sequence of occultations of stars and oppositions of planets had been observed over a vast extent of countries, from Cairo to Baghdad and Racca. The change of direction which navigation was undergoing towards the end of the fifteenth century, made the necessity felt of obtaining and increasing the number of astronomical methods. But although it was possible to conceive of using [these new methods], the imperfection of nautical instruments hindered their success even more than the imperfection of tables. We have already seen, according to the journal of the first voyage of Columbus, the major part of which has been preserved for us by Las Casas, that the Admiral "sought, on the 13th of January 1493, in Haiti a port where he could tranquilly observe (*para ver en que paraba*) the conjunction of the sun and the moon, and the opposition of the moon and Jupiter."¹¹

The science—in the broadest sense of the word—behind Columbus' achievement, was organized before he was born, at the Council of Florence. That does not diminish his glory, however. On the contrary, he was a fitting prototype of that once proud, now vanishing

American, who has the ingenuity and imagination required to assimilate and put into practice the breakthroughs made by scientists—thus changing world history for the good, more than thousands of his detractors have changed it for the worse.

NOTES

1. Samuel Eliot Morison, *Admiral of the Ocean Sea: A Life of Christopher Columbus* (Boston: Little, Brown and Company, 1942), p. 195.
2. Alexander von Humboldt, *Examen critique de l'histoire de la géographie du Nouveau continent et des progrès de l'astronomie nautique aux quinzième et seizième siècles* (*Critical Examination of the History of the Geography of the New Continent and of Navigational Astronomy during the Fifteenth and Sixteenth Centuries*), Vol. III, pp. 29-31 (translated from the French by the author).
3. In *Cosmos*, Vol. II, p. 262, Alexander von Humboldt speaks of a map of Toscanelli's, different from the well-known one, which Columbus had in his possession. For on Sept. 25, 1492, Columbus showed Martin Alonso Pinzon a map "on which many prominent islands were delineated."
4. Humboldt, *op. cit.*, Vol. III, pp. 29-31.
5. *Ibid.*, pp. 39-40.
6. E.G.R. Taylor, in *The Havenfinding Art* (New York: American Elsevier, 1971), pp. 162-63, says that the *Regimento* was probably written in 1481 by three people: master Rodrigo, the Royal physician to King John of Portugal; the Royal chaplain, Bishop Ortiz; and José Vizinho, a learned Jew and disciple of the famous astronomer Abraham Zacuto of Salamanca (who himself came to Lisbon approximately ten years later).
7. *Ibid.*, p. 164.
8. *Ibid.*, p. 164.
9. We do not use the great circle distance, because the practice at the time was latitude sailing, i.e., sailing down to the latitude you wanted (where the winds blew steadily in the desired direction), and then sailing along the latitude line.
10. This value also correlates very closely to the calculation we can make without the *Regimento*, based on the difference in longitude between the Cape Verde Islands and the Second Demarcation Line being about 22.5°; whence, 22.5° = 370 leagues, and 1° = 17.3 leagues.
11. Humboldt, *op. cit.*, Vol. IV, pp. 311-315.

SYMPOSIUM

Prince Henry's Navigations

by Tim Rush

Columbus' voyage across the Atlantic in 1492 was the westward application of the Apollo Project of the Renaissance: the coordinated advances in navigation, shipbuilding, astronomy, and mapmaking, pioneered by Prince Henry of Portugal ("the Navigator") (1394-1460).

Henry's project was, in the words of the 1454 Papal edict which raised his efforts to a strategic priority for

all Christendom after the 1453 fall of Constantinople, "to prove devotion to God by making the seas navigable."

From the period of Roger Bacon (c.1214-1292) and Ramon Lull (1232-1315), a strategic plan for Christianity to outflank the Venetian-Moslem grip on the eastern Mediterranean, by circumnavigating Africa, or heading west across the Atlantic, was on the table. This plan was further developed by the scientific participants of the

Council of Florence.

The logistical and technological problems were staggering. The boats of the time, both galleys and one-masted trading vessels, could not handle long voyages on the high seas; navigation and nautical astronomy was not developed for routes outside northern temperate-zone Mediterranean-centered requirements; there was almost zero knowledge of the complex winds and currents in the high seas; there was no first-hand knowledge of even the first five hundred miles of Africa coast, let alone the remaining eight thousand miles; and a vast body of medieval superstition had many sailors terrified that penetrating beyond the then-known limits of sailing was a suicide mission.

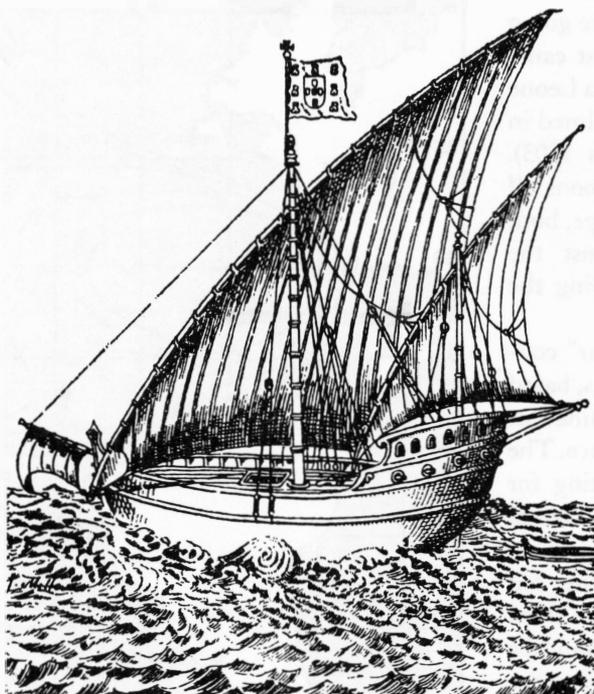
The School of Sagres

The third son of an illustrious generation of Portuguese princes, Henry sponsored a series of yearly voyages of discovery starting in 1416, when he was just twenty-two years old. By the early 1430's, he had established a scientific research center on the coastal promontory at Sagres, which came to be known as the "School of Sagres."

Sagres became the intersection point for all facets of Henry's project: his intelligence-gathering machine; the training of the personnel for the voyages within his household; the revolutionary advances in ship design centering on the caravel, carried out at the Lagos shipyards built and supervised by Henry; the design and execution of a colonization policy; all intermixed with a core group of resident cartographers, scientists, and geographers, and a stream of visitors from throughout the known world.

The center of his team, the only cartographer in the group known by name, was the Majorcan Jew Jahuda (Jacomé) Cresques. He brought a number of companions, and all the papers of his great father, the Abraham Cresques known as *magister mappamundorum et buxolorum* (master of the world-map and com-

FIGURE 1. *The caravel, developed for ocean travel, maximized the efficiency of crew size, hull, and rigging, to gain speed and maneuverability.*



pass). Abraham Cresques had taught at Majorca's renowned school of navigation; he had designed the famed Catalan Atlas of 1375, among many other cartographic achievements; he had mastered the manufacture of navigational instruments; and he had perfected a series of tables to calculate sea distances.

The Invention Of the Caravel

The development and introduction of the caravel under Henry's sponsorship in the period around 1440, was one of the great technological leaps of the Renaissance.

Galleys were out of the question for deep-sea ocean travel—the ratio of numbers of seamen required to ship size meant impossibly large requirements of food and wa-

ter. The barca and varinel, used by Henry in his early voyages, were round-bellied, heavy merchant ships, difficult to maneuver and riding low in the water. They used just one mast and one large sail.

Out of Henry's shipyards came an "intrinsically revolutionary vessel, with respect to both rigging and hull design. She was three-masted and usually lateen rigged." The ratio of beam to length was not 1:2, but 1:3, and even 1:4. "It was thus the combination of hull, size, and rig that made the caravel far and away the most efficient sailing vessel built up to that time. Excellent in windward work, these ships could sail anywhere but into the 'eye of the wind,' while their daily runs in favorable weather sometimes rivaled the logs of the famous clipper ships of a later day."¹ The caravel later became the standard ship of Columbus' voyages (see Figure 1).

The 'Long Ocean Tack'

The caravel opened one of the great deep-sea achievements of Henry's, or any later, time: what became known as the "Guinea tack," or sometimes, the "long ocean tack."

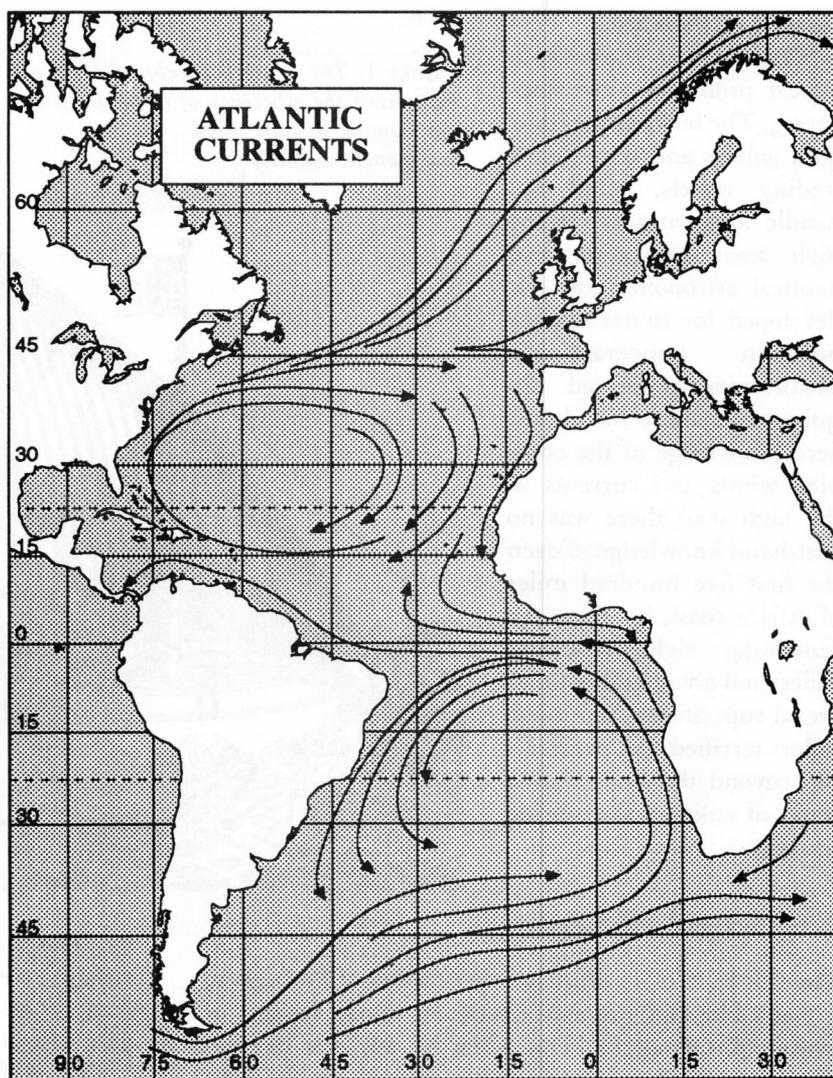
Examine closely the pattern of winds and currents

that the Portuguese had to contend with as they proceeded further and further down the Africa coast (SEE Map VI). Down to approximately the 15th parallel, at the “bulge” of Senegal, both wind and water currents tend uniformly south and southwest. It was literally a breeze going out—but hell tacking back. Next came the problem of calms off the Sierra Leone coast (an Italian crew stayed becalmed in the area for fifty-seven days in 1503). Further south, from the Cameroons all the way to the Cape of Good Hope, both winds and currents run against the south-bound mariner, while aiding the return.

The result was that any “linear” conception of the exploration voyages, based on paralleling the coasts, undermined its own viability the longer the distance. The time taken in tacking and waiting for favorable winds, coupled with the lethal results of tropical heat and diseases on the crews; of tropical waters rotting out the wooden hulls; and slimmer and slimmer margins of provisions that could be carried for such long distances, all meant that no sustained course of exploration, evangelization, or commerce, could be carried out on that basis.

Henry’s crews hit upon a unique and extraordinary solution to the problem. As the voyages probed further and further south, the captains began to set sail at an oblique angle to the contrary winds they faced heading home. They headed north and northwest. But instead of tacking a few miles, and then tacking back in the opposite direction, they kept going—for up to a thousand miles of open ocean, until they reached the vicinity of the Azores. They then turned east, utilizing the variable winds of that latitude which shuttled them relatively securely due east to Lisbon. The two legs of this “long ocean tack” involved distances substantially greater than the direct route—but an equally substantial saving in time (SEE Map VII).

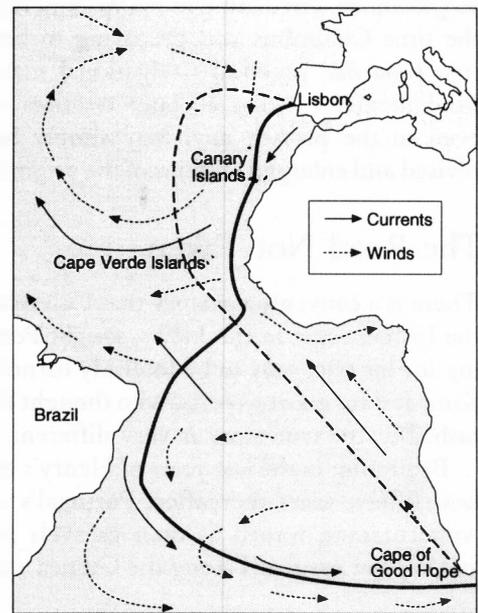
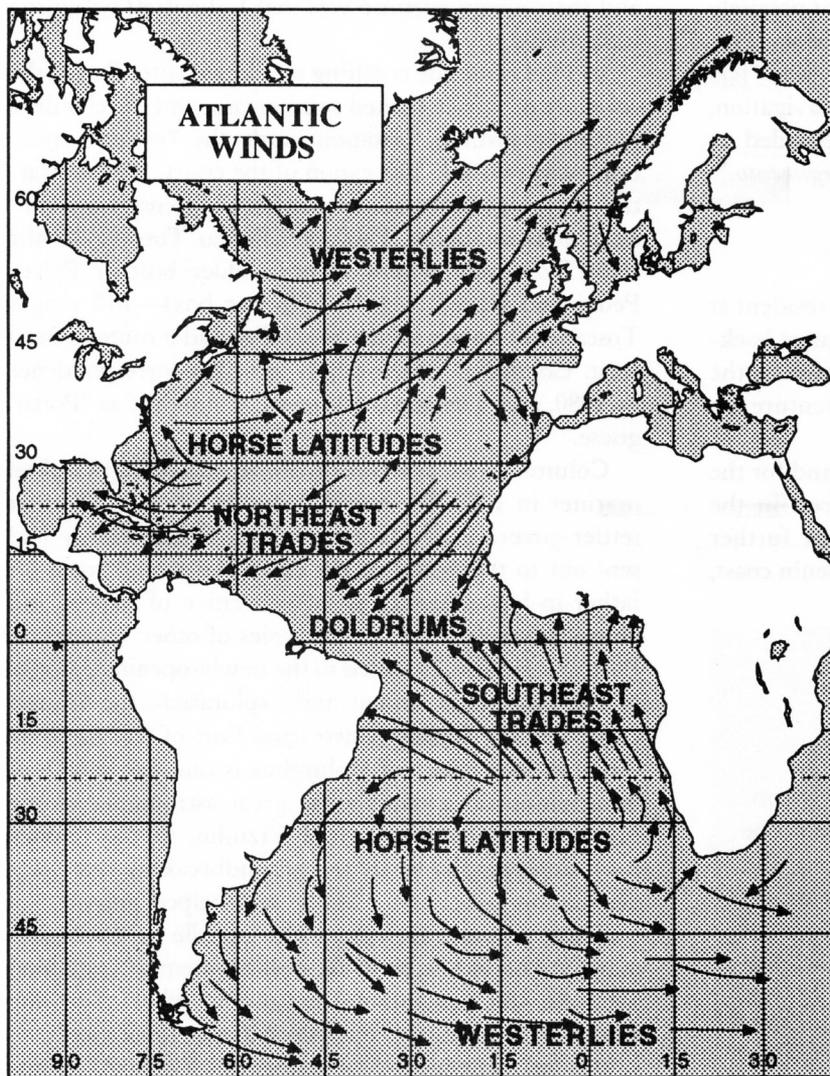
This solution was then inverted and extended into the southern hemisphere for the great breakthrough of Vasco da Gama’s voyage to India in 1497. What Da Gama did—after a decade of intense Portuguese researches into the wind and ocean currents of the South Atlantic—was sail with the prevailing winds and currents to the latitude of the Cape Verde Islands (again,



MAP VI. *Opposite vortex patterns of currents and winds in the North and South Atlantic.*

utilizing the generally clockwise circulation of wind and ocean in the northern hemisphere); then, cut across the doldrums to intersect the mirroring counterclockwise circulation in the southern hemisphere, and follow it *southeastward*, almost to the coast of South America. (Alvaro Cabral, in the next voyage, would officially “discover” Brazil by exactly this “longer ocean tack”—a discovery almost certainly made earlier by the crews doing the reconnoitering for the breakthrough!) Once in the “roaring 40’s” of the southern Horse Latitudes, Da Gama “hitchhiked” a ride back on the eastward winds, to intersect the Africa coast at almost precisely the Cape of Good Hope.

It was a route that was not to be improved upon in the next four hundred years, and although for Da Gama it involved being out of sight of land for over three



MAP VII. The "long ocean tack." Solid line: Portugal to the Cape of Good Hope; dashed line: from the Cape to Portugal.

months and 3,800 miles (compared to Columbus' thirty-three days and 2,000 miles), it cut the time of the passage in half. It was a staggering feat of seamanship.

Columbus' masterly use of the circulatory pattern of the northern belt for his voyage (out on the Trade Winds, back in a northerly route intersecting the Azores), shows his acute learning abilities in the Portuguese "long ocean tack" methods.

The *Regimento*

Coupled with the School of Sagres revolutions in ship-building and use of winds and currents, was a revolution in navigational astronomy. Mariners from time immemorial had used the Pole Star as a rough guide to their latitude. However, the needs for charts and tables were minimal, since voyages took place within a relatively narrow belt of latitudes and usually had visual land-

marks within several days of sailing to correct any errors. The giant distances out of sight of land introduced by Henry's navigators forced the Portuguese to bring the extensive astronomical knowledge and sophisticated instruments of court astronomers within the reach of common sailors—heretofore considered too lowly a profession to merit access to them.

Thus, in the last years before Henry's death in 1460, we find the first consistent mention of the use of the quadrant on board the Portuguese caravels. Within twenty years, the design and use of the astrolabe had been adapted by the successor to Henry's School of Sagres, the "Junta dos Matemáticos" in the Lisbon court, to become an increasingly common instrument on board (Columbus carried both).

A problem of an entirely different order presented itself to the Portuguese when they neared and then crossed the Equator, in the years 1454-1474: the Pole Star rode lower and lower on the horizon, and then disappeared. There was no southern equivalent for the Pole Star. A navigational guide to determine latitude below the Equator was required.

Based upon centuries of accumulated knowledge of *solar declinations*, the result was the great joint work of two Jewish astronomers and mathematicians, Abraham Zacuto and José Vizinho, the *Regimento do Astrolabio e*

do Quadrante, circulating in manuscript form at precisely the time Columbus was preparing to head west. This first *bona fide* practical navigational manual was “[s]o fundamental . . . that all later treatises on navigation, even to the present day, may simply be regarded as revised and enlarged editions of the original *Regimento*.”²

The Road Not Taken

There is a conventional story that Columbus, resident at the Lisbon court in the 1480’s, sought Portuguese backing for his trip, only to be foolishly turned down by the King and his court experts, who thought the venture too rash. But the true story is very different.

Beginning in the last years of Henry’s life, and for the next fifteen years thereafter, Portugal’s interest in the western route waned as their caravels pushed further and further eastward along the Guinea and Benin coast,

Portugal and Florence

In 1425, Prince Henry’s older brother Pedro embarked on a four-year mission, which was one of the widest and most successful diplomatic and scientific expeditions in the history of Europe. When he arrived in Florence, he became the toast of the city. A joust was held in his honor, and literary works were dedicated to him. “The humanists made much of the Portuguese prince.”³ Among the aims of his mission: “to look for geographic materials for Prince Henry his brother. . . . He certainly must have frequented, among others, Palla Strozzi, Antonio Corbinelli, who had had sent from Constantinople geographic codices, and especially Cosimo de’ Medici and the nucleus of his gifted intimates, who met with him at the convent of the Angeli, [hosted by] Ambrogio Traversari; among whom the main ones were Lorenzo de’ Medici, Ser Ugolino Pierúí . . . and finally Paolo dal Pozzo Toscanelli.”⁴

The ties to the mathematician Toscanelli would define the most fruitful of multiple threads of political, economic, and scientific collaboration for the rest of the century. For, as one of Italy’s most distinguished Columbus scholars put this widely-suppressed fact, “the Florentines played an active part in financing and stimulating the Portuguese maritime enterprises.”⁵

and their joyous surmise was that India itself was just a little ahead.

In 1474 came the crushing shock that after Benin, the coastline of Africa turned south again, and in relentless, unbroken fashion. Instantaneously the “western question” was revived. The canon of the court, Fernão Martins, exchanged correspondence with Florence’s pre-eminent mathematician, Paolo dal Pozzo Toscanelli—the same Toscanelli whom Henry’s older brother Prince Pedro had visited back in 1428 (SEE BOX)—and sought Toscanelli’s advice on the feasibility and a route to head west. Columbus was brought into this correspondence by 1480, and Toscanelli addressed Columbus as “Portuguese.”

Columbus had first come to Portugal as a shipwrecked mariner in 1476. He married the daughter of the first settler-governor of Madeira, whom Prince Henry had sent out to the island in the early 1420’s, and from his father-in-law inherited a large archive of papers and observations. In 1482, after a series of other voyages on Portuguese ships, he sailed to the newly-opening frontier of Portuguese settlement and exploration, the Guinea Coast and the freshly-constructed Fort of São Jorge da Mina. A later letter of Columbus is our sole source of information on a trip by the great astronomer of the Junta dos Matemáticos, José Vizinho, to the Guinea coast to personally verify the groundbreaking new solar declination tables and rules he had helped prepare.

Thus, Columbus was in the middle of Portugal’s maritime breakout, at its densest moment of combined scientific and navigational expansion, when the route west was as seriously considered as the route south.

It is fortunate indeed for history that a man of Columbus’ determination and strength, energized by direct contact with the Florentine scientist Toscanelli, and backed by the greater resources of Spain, stepped forward to take the “road not taken” by the Portuguese, and thus ensured that Henry’s project to “show devotion to God by making the seas navigable” brought the Renaissance Christian world simultaneously to the American continent and, by the Africa route, to the Indies.

NOTES

1. Boies Penrose, *Travel and Discovery in the Renaissance*, (Cambridge: Harvard University Press, 1952).
2. *Ibid.*
3. John Dos Passos, *The Portugal Story* (Garden City: Doubleday and Co., 1969).
4. Gustavo Uzielli, “Paolo Toscanelli, Amerigo Vespucci, and the Discovery of America,” in *Paolo dal Pozzo Toscanelli, iniziatore della scoperta d’America. Ricordo del Solstizio d’estate del 1892* (Florence: 1892), as translated by Rick Sanders.
5. Paolo Emilio Taviani, *Christopher Columbus: The Grand Design* (London: Orbis, 1985).

Who Really Killed Off the Aztecs?

by Carlos Cota Meza

A vast number of studies has been produced during the twentieth century, containing the most absurd demographic theories regarding ancient Mexico, all part of an obsessive attempt to demonstrate that the Spanish conquest, colonization, and evangelization of the New World was a horrendous act of genocide committed against the Indian populations found there.

The majority of those studies inflate by nearly one order of magnitude the number of inhabitants of Aztec Mexico whom Hernando Cortés found in 1521, in order to conclude that their “disappearance” fifty years later was the product of “genocide.” The truth is that the majority of those people never existed—except in the imaginations of our modern-day anthropologists.

Cloaked in pseudo-scientific terminology, demographers of ancient Mexico employ the term *population-density* as if it meant nothing more than counting up the number of inhabitants possible per square kilometer, as if one were counting the number of head of cattle enclosed in a corral.

The term *population-density* has never meant that. The term is rather used to determine the relationship of the human being, at any particular stage of development, with nature or with that portion of territory where he is dominant, and to analyze whether the reproduction of the human species in that area of the globe under analysis is successful or not. Today, the concept of population-density has been scientifically developed by economist Lyndon H. LaRouche, Jr. and is known as *potential relative population-density* (SEE BOX).¹

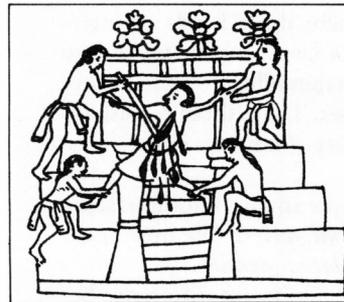
Human beings cannot be counted like cattle or sheep, but rather are to be analyzed from the standpoint of how they came to be lords over nature, and what technical means are at their disposal for the successful reproduction of their existence. Based on anthropological and archaeological evidence, as well as on the study of ancient means of production, a general table of population-density for humanity at different levels of its development can be determined.

At the level of development of the hunting and gathering society so frequently idealized today, at most, one

inhabitant could be maintained per square kilometer. With the transition to domestication of animals and to agriculture, humanity increased its population-density to eight inhabitants per square kilometer. Maximum development reachable at this primitive agricultural level was approximately 20 inhabitants per square kilometer.

Modern agriculture has increased population density to approximately 100 inhabitants per square kilometer. While hunting and gathering could maintain a population of at best 10 million inhabitants on the Earth, modern agriculture has raised the potential relative population-density of the planet to some 10 billion.²

Applying this methodology to ancient Mexico, we discover that the Indian population could never have been the 20-30 million inhabitants the neo-demographers imagine; nor did the Indians enjoy a happy existence in harmony with nature. Thus, the European conquest, colonization, and evangelization did not produce the “genocide” that is cunningly attributed to them.



Absurd Numerology

IN THE BOOK *Mexico-Tenochtitlán: Economy and Society in the Sixteenth Century*, author José Luis de Rojas

presents a synthesis of more than a score of essays, by more than one dozen writers. Apparently, the bible of ancient Mexico's neo-demographers is the tract written by Woodrow Borah and Shelburne F. Cook, *Essays on the History of Population, Mexico, and California*. All the essays are intended to demonstrate “the prolonged decline of the Indian population, caused by the Spanish conquest.”

The figures given for the total population of pre-Hispanic Mexico have always widely differed, fluctuating between 3.3 million and 30 million. For the city of Tenochtitlán (a small island of 13.5 square kilometers),

Potential Relative Population-Density

The increase of man's power over nature is most easily measured as a decrease of the habitable land area required to sustain an average person. This measures the economy of labor in a most effective way; this measure can be applied to each and all forms of society without regard to the wide assortment of distinctions in internal culture and structure among societies in general.

The name for this measurement is, in first approximation, *population-density*. Given, a society's level of technology in practice, how many persons can be sustained, per square kilometer, solely by means of the labor of that society's population?

However, before we proceed to measure, we must make certain adjustments in our definition of population-density.

First, land varies in quality for human habitation. This variability is threefold. Relative to any technological level of culture, various pieces of land vary in quality of suitability and fertility for human habitation and other use. However, human habitation does not leave land in a permanently fixed condition. The quality of habitability and other use is worsened by effects of depletion; the quality is improved by means including irrigation, fertilization, and so forth. Finally, a change in technology is a change in the qualities of land most suitable for human use. These three kinds of interacting variability of quality of land must be taken into account in comparing the "habitability" of one square kilometer of land with another. These three considerations define the variable quality of land as *relative* value of a square kilometer.

Instead of measuring simple square kilometers, we must measure *relative square kilometers*. We must measure, therefore, *relative population-density*.

Second, there is usually a significant difference between the size of population which could be supported with existing levels of technology, and the current size of the population. It is the former which we must measure in comparing different levels of technological development of cultures. We must measure the *potential* population, defined in this way.

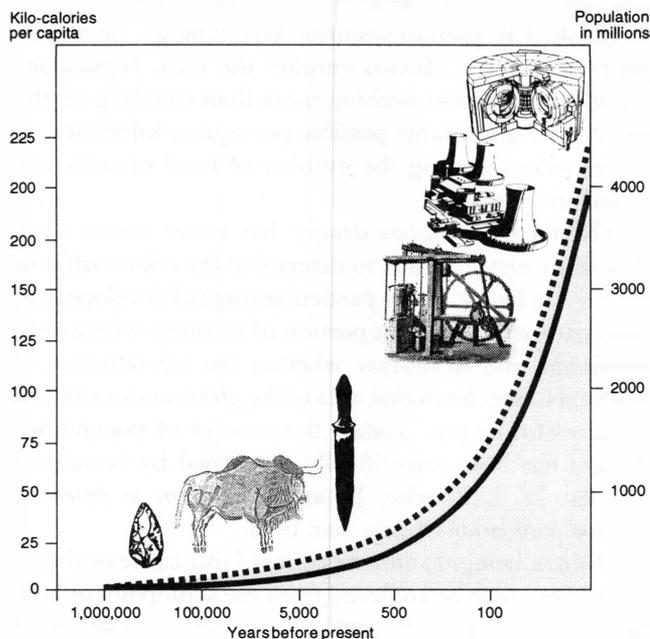
We must measure the *potential relative population-density*. This is the rough measure of the superiority of one level of culture over another. This is the measure of *economic progress*; it is the measure of *economy of labor*.

—Lyndon H. LaRouche, Jr.,
from *So, You Wish to Learn All About Economics?*

the neo-demographers calculate a population of between 260,000 and 300,000 inhabitants.

The way in which they calculate population is absolutely absurd. They multiply by five the number of warriors mentioned in the chronicles of the conquistadors, and multiply by six the number of houses said to have been there, as if Aztec Mexico could have sustained six-person families like the families of 1960's Mexico, when the population growth rate was nearly four percent a year! Using another measure, they come up with an arbitrary coefficient taken from the supposed number of taxpayers, to whom are attributed a supposed number of dependents, less a presumed number of the tax-exempt.

After feverish numerological calculations, they then extrapolate estimates for the sixteenth century, based on population structures of the twentieth. De Rojas says that Cook and Borah "assumed that the Mexican population of 1930 should hardly differ in its composition from the pre-Hispanic, which seems basically correct to us." Then, for example, based on a 1950 demographic pyramid, he indicates that "we can suppose, operationally, that among the pre-Hispanic Aztecs, the number of men and women was practically balanced"—an impossible assumption for any ancient society.



Time Line of History

Paleontological history, to about 5,000 years ago, was characterized by stone tools and gradually improved methods of hunting and gathering. In Archeological history, the agriculture of the Bronze Age was developed. In the remaining 2,500 years before the present, introduction of fossil energy sources and atomic energy has increased the relative potential population-density by three orders of magnitude.

So fantastic are such assumptions, that we could equally assert that the Aztec priests applied anesthesia to their victims before ripping out their hearts. But as we are dealing with a “demonstration” of how the Spanish conquest unleashed the prolonged collapse of the Indian population, the authors do not bother with trifling details.

Cook and Borah do a study of 206 towns, finding that between 1568 and 1646, the total population fell from 1,321,329 to 303,717. With the greatest cynicism, they admit that they did not take into consideration the possible construction of new cities in reaching their conclusions. “To identify these relations and the changes that took place has required quite difficult detective work.” It was merely simpler to conclude that the Indian population was exterminated, than investigate its transfer to new centers.

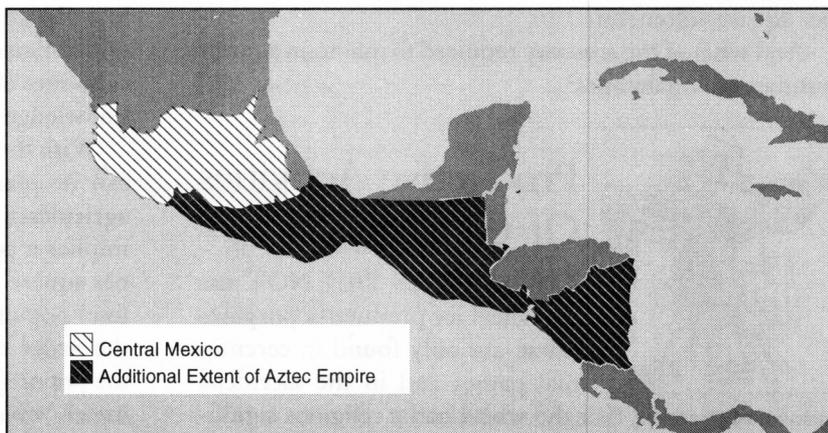
These same authors reach their climax in calculating total population. In central Mexico, they conclude that there lived 25 million people. Further, they estimate that “the average density of the Indian population was 49 inhabitants per square kilometer.”

The central Mexico they are considering is bordered to the northwest by the Lerma-Santiago River, in the northeast by the Sierra Madre Oriental, from the Motezuma River flowing out of the Panuco River down to a point where the state limits of Veracruz, Puebla, and Oaxaca join (near Cotaxtla). The southern border can be found on the southern banks of the Balsas River, and from there up the Pacific Coast to the borders of Michoacán, Colima, and Jalisco states, a point near Lake Chapala (SEE Map I).

The current estimate of the surface area of this region is 219,915 square kilometers, which—for the population calculated by Cook and Borah—yields a population-density of 116 inhabitants per square kilometer—*more than twice that registered in 1985*, which was 40.4 inhabitants per square kilometer for an equivalent area!

Ah, but if one adds the territory down to Guatemala, El Salvador, and Nicaragua into one’s calculations—which is how far the Aztec Empire extended—one will add another 278,282 square kilometers to the original 219,915. We then arrive at a total land mass of 498,197 square kilometers, with a population-density of 50 inhabitants per square kilometer.

What these pseudo-scientists have done is to take their hypothetical figure of numbers of inhabitants calculated over a much larger area, and then “concentrate” their



MAP I. Aztec Empire: central Mexico and additional territory.

density into a much smaller area.

In a similar way, by confusing the Valley of Mexico with the city of Tenochtitlán, they give the latter a value of 300,000 inhabitants concentrated in 13.5 square kilometers, thus assigning to each inhabitant *45 square meters in which to live!* If the inhabitants were 200,000, they would each have been granted 67.5 square meters. With a glimmer of honesty, de Rojas wonders, “Up to what point are these figures acceptable?” Other authors give Tenochtitlán a population which could hardly reach 80,000. Even if this were truly the population-density, it would be greater than that attributed to today’s Mexico City and its outlying regions, the largest city in the world!

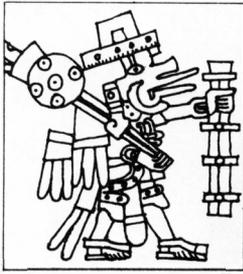
The truth is that the plains of the Valley of Mexico measure 4,300 square kilometers, which, with a population of 300,000 inhabitants in the entire valley, would yield a density of 69 inhabitants per square kilometer. Considering a population of 80,000 for the whole valley, the density would be 18 inhabitants per square kilometer—a reasonable density, in accordance with the productive activities of the period. A population of 300,000 for the Valley of Mexico in the sixteenth century, on the other hand, means a density greater than that registered in any state of the Mexican Republic, according to the 1990 census.

But as the neo-demographers of ancient Mexico are the first to admit, they are not trying to establish exact figures, but to charge the Europeans with ethnocide.

If we began the other way around and, taking nothing more than the area of central Mexico, we applied to it different population figures than those just mentioned, we would have, for 25 million inhabitants, a population-density of 116 inhabitants per square kilometer; for 18 million it would be 83 inhabitants per square kilometer; for 11 million, it would be 51 inhabitants per square

kilometer; and for 3.3 million, it would be 15 inhabitants per square kilometer.

And what of the *economy* required to maintain a given number of inhabitants?



Productive Activities Of the Aztecs

THE AZTECS DID NOT use the wheel for productive purposes (these are only found in ceremonial games and in the sacrificial stones, suggesting that the wheel had a religious significance). They also did not use beasts of burden. In any ancient societies one might examine, the use of these two “technologies” meant a gigantic leap in productivity.

There were certain agricultural settlements, which were exploited in a very rudimentary way with the use of the “planting stick,” the most ancient tool for sowing after the hand itself. In the Valley of Mexico, there were found the celebrated floating gardens, which were most extensively used by the Aztecs themselves in Lake Texcoco, since they had no solid land and were permanently surrounded by enemies who did not allow them to venture onto solid land (their crops were corn, beans, pepper, and maguey cactus). Domestication of animals was clearly very limited, as no evidence of animal husbandry was found.

Metal-working was limited to fancy and ceremonial goldsmithing, and the smelting instruments were of stone, which, as is well known, could not be heated to high temperatures. Obsidian and flint stones were used as highly tempered chisels. Mining equipment was very poor. Most domestic utensils were also of stone.

The goods found in the marketplace suggested that hunting by stealth was a widespread practice, and was never abandoned for agriculture and domestication of animals, which requires staying in one place and stable concentration of labor.

The inhabitants of the new continent during the fifteenth century did not include any dairy products in their diet, despite having the opportunity to tame domestic mammals. Animal protein came from the lowest forms in the animal kingdom: iguanas, snakes, amphibians, worms, and larvae. Although the Aztecs practiced cannibalism, they were primarily insectivores. Their vegetarianism was very peculiar: They ate algae from the lakes, which, being in populated regions, received considerable quantities of human waste, causing an enormous incidence of usually fatal gastrointestinal diseases.

The astronomical and mathematical knowledge usually attributed to the Aztecs found no reflection in any

of their mechanical and productive activities. Such knowledge belonged to the most ancient and civilized populations, but did not correspond to the intellectual capacities of the Aztecs. Instead, they used their acquired knowledge for ritualistic purposes.

With these basic productive activities, the Aztec world can be placed approximately at the level of primitive agriculture (and this is a generous interpretation), which implies a potential population-density of 20 inhabitants per square kilometer. Thus, one may conclude that the total population of central Mexico would have been on the order of 4.3-million inhabitants. We could extend the population-density to 25 inhabitants per square kilometer, which would lead to a population of nearly 5.5 million, but there is no evidence that the Indian population could have been 30-, or even 20-million inhabitants, given that there was no economy that could have maintained such a number.

These figures, which could be considered prudent, have always been omitted, precisely because they argue against the dogma of “progressive depopulation.”

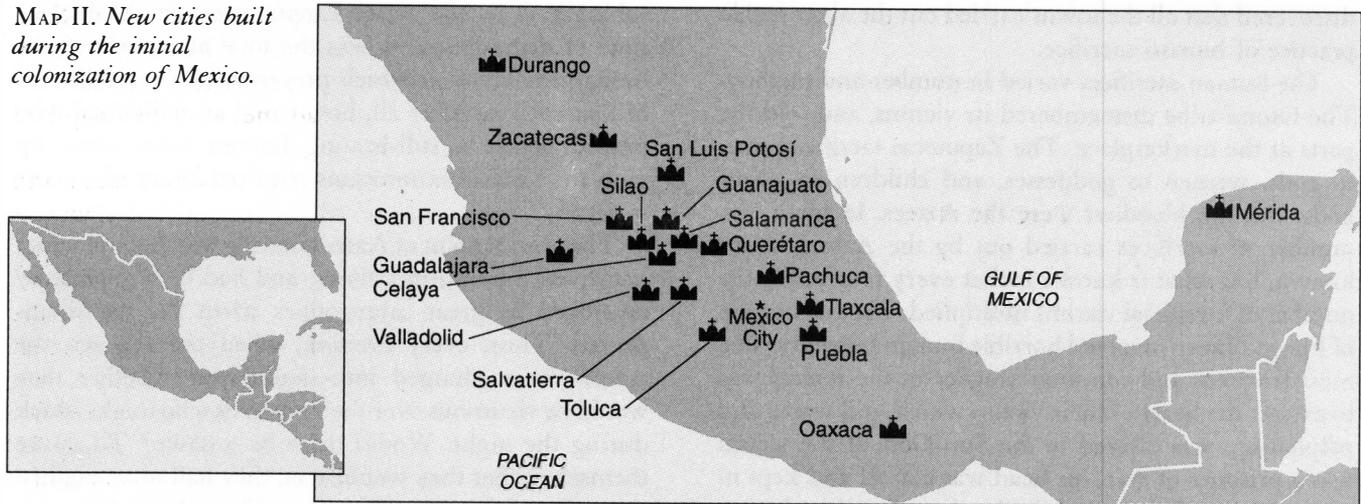
It was necessary to give this New World a new social structure, in which everyone would live under the law; and certainly during this effort excesses were committed, such as the early avaricious mining, which failed completely. Health problems occurred because of the introduction of European diseases, combined with problems such as hunger, and with the diaspora caused by the transition between the freeing of populations under Aztec tyranny and the establishment of the new order. This certainly had an impact, but not such that ninety percent of the population disappeared.

If we assume a population for pre-Hispanic Mexico in accordance with a density sustainable by existing productive methods, we must conclude that there could hardly have been a negative growth rate in the years following the colonization. Rather, quite the contrary occurred, since the Indian population in the pre-colonization period *necessarily found itself in a process of extinction, due to its own incapacity to reproduce itself*. With the colonization, a slow recovery of the Indian population took place, which became sustained after the first half of the seventeenth century.

This fact is provable simply by considering the effect of introducing large-scale sedentary agricultural exploitation, seeds from the Old World, grazing and reproduction of the animals brought by the colonists, what is generically referred to as a *Christian diet* (meat, bread, butter, and milk, minimally), and above all, beginning in 1524, by the building of cities.

As one can see, Cook and Borah only count the Indian population which lived in *Indian* towns, and their method for obtaining their figures is highly questionable.

MAP II. *New cities built during the initial colonization of Mexico.*



City Building vs. Perpetual War

AT ALMOST THE SAME time that the alleged "period of progressive depopulation" occurred, an intense process of building new

cities took place (SEE Map II). In 1524, the new city of Mexico was built, together with the surrounding towns of Iztapalapa, Coyoacán and Tacuba; the building of Tlaxcala and Oaxaca began in 1526; the building of Toluca began in 1530, with Lerma as another important center; in 1531, construction began in Puebla, which became the largest city in Ibero-America. This was followed in 1556 by the building of Querétaro. The building of Pachuca began in 1534, followed by Valladolid in 1540.

New areas opened up in 1542, with the founding of Guadalajara to the west, and Mérida on the Yucatán Peninsula. The first settlements in Zacatecas were established in 1547, and 1554 saw the founding of Guanajuato. Even before this, the cities of Celaya, Salamanca, Silao, San Francisco del Rincón, and Salvatierra were founded. Durango was founded in 1563, and San Luis Potosí in 1576.

Could such a renaissance have occurred in a society in which there were more deaths than births, and with millions of Indians supposedly dying like flies as they fell from the scaffolding of the buildings?

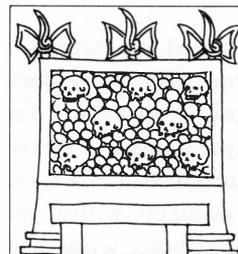
When the Aztecs arrived in the Valley of Mexico in 1216, the population of central Mexico was made up of wandering tribes and fiefdoms which kept the region in a permanent warlike state of all against all.

As a social, political, and religious grouping, the Aztecs were the product of an increasing social involu-

tion which began with the mysterious disappearance of the Olmecs in the sixth century A.D., continuing through the equally mysterious disappearance of the Mayas and Zapotecas in the ninth century. The Aztecs are a product of the destruction of the Toltec culture of the eleventh century, and that of the savage Chichimecas, who were hegemonic before the Aztecs founded Tenochtitlán in 1325.

Prior to 1325, the Aztecs had a history of more than a century of wandering migrations, of bondage to other tribes, and of a life just as miserable as that of others. At the end of the thirteenth century, they bought their freedom from the Texcocos by serving as their mercenary army in the war of the Texcocan nobility against that of Xochimilco.

From here on they dedicated themselves to fulfilling the prophecy which said that the endpoint of their pilgrimage would be when they found an eagle sitting on a prickly pear devouring a serpent. In 1325, the prophesy was fulfilled, when on the site of today's Mexico City, the first temple for human sacrifice, known as the Templo Mayor, was founded, around which Tenochtitlán was built. On the basis of this prophesy, the Aztecs subjugated other populations, and in 1352 established a monarchy which ruled until 1521.



Human Sacrifice And Cannibalism

THE GENERALIZED practice of human sacrifice is one point that cannot be omitted in any attempt to analyze the relationship of pre-Hispanic man with nature.

From a bit north of the twentieth parallel, down to Nicaragua in Central America, evidence has been

discovered that all the towns carried out the abominable practice of human sacrifice.

The human sacrifices varied in number and method. The Otomi tribe dismembered its victims, and sold the parts at the marketplace. The Zapotecas sacrificed men to gods, women to goddesses, and children to infant gods. But the bloodiest were the Aztecs. In truth, the number of sacrifices carried out by the Aztecs is unknown, but what *is* known is that every four years, the number of sacrificial victims multiplied. The celebration of Fuego Nuevo involved horrible human butchery. The most frequent and common practice of the Aztecs was to extract the heart of their victim which, still warm and palpitating, was offered to the Sun God. If the victim was a prisoner of war, his head was cut off and kept in a storehouse of skulls, while the decapitated body was rolled down the stairs of the temple. If the victim was a slave, the owner collected the body in order to eat the thighs and the arms; the rest was fed to savage beasts and birds of prey which adorned the royal palaces and the homes of the nobility.

In the ceremony to the Mother of the Gods, held on the eleventh month of the Aztec calendar, the woman who represented the god died with her throat slit, on the back of another woman. During the twelfth-month celebrations, the victims died by fire. In one of numerous ceremonies dedicated to Tláloc, children were sacrificed in some "sacred" place in the lake. In another ceremony, children were walled up in caves until they perished from starvation.

Gladiatorial sacrifice held the most "honor": Prisoners of war were tied down by one foot and made to fight against four gladiators.

In Cuauhtitlán, two slaves were sacrificed to inaugurate the ceremony in honor of the gods of fire. Their thigh bones were extracted, and used by the priests as walking staffs. The Aztecs often flayed their victims, and the priests would cloak themselves in the bloodied skins.

The priests did frequent penance, through fasts and permanent cloistering. They also bloodied themselves, piercing their ears, their lips, their tongues, their calves, their arms, and their genitals.

Their idolatrous practices were carried out through a network of priests and priestesses from different orders, who were prepared from childhood, by caste and for life. The priests in the Templo Mayor alone numbered in the thousands. At the top of the social structure were great lords, who controlled entire domains within the cities under the control of imperial tribute, with their own temples and family priests who carried out their own sacrifices.

By the sixteenth century, the native populations under

subjugation by the Aztec Empire were in an absolute state of degradation. It was the total aberration of the human imagination which prevented the reproduction of that society. After all, how could an individual who prayed before a still-beating human heart come up with the kind of innovations required by an advancing society?

The central point of Aztec doctrine was that humanity had lived four distinct times, and had been repeatedly destroyed by great catastrophes when the sun disappeared. Thus, every evening, when the sun set, the Aztecs were plunged into doubt over whether they would be victorious over their enemies who might attack during the night. Would there be a dawn? To assure themselves that they would win, they had to strengthen themselves for nocturnal combat. The only food for such warfare was human blood, which proved indispensable for the survival of their people and led to the ruin of neighboring populations, from which the Aztecs chose the great majority of their victims.

This bloody "worship" was what extinguished all sensitivity from the human soul of the natives, and any sort of loving sentiment toward their fellow man. In their world, the individual soul did not exist. It was this, more than anything else, which prevented the successful reproduction of Aztec society.

The ruin of the Aztec Empire was fated to occur, and it took place as does the destruction of all empires. Every province that the Aztecs subjugated became a new enemy to their dominion. Each one of these peoples awaited the first opportunity to rise up and fight for the independence that they had had before becoming subjects of the Aztecs. By the sixteenth century, the Indian world found itself at the height of a war of each against all. War became the sole driving force, whether provoked by economic or religious factors. *Thus, the Aztecs represented the end of the Indian world.*

If we wanted to indulge in conjecture, we could say that had the Spanish conquest occurred much later, the Spaniards would have found a few insane survivors scattered across the former Aztec lands, perhaps trying to eat their own arms and legs. Only in this sense is it valid to assert that what happened five hundred years ago was a "meeting of two cultures." The Conquest was, in fact, a fortunate occurrence that permitted the *reproduction of humankind* to retake its course in these lands.

NOTES

1. Lyndon H. LaRouche, Jr., *So, You Wish To Learn All About Economics?* (New York: The New Benjamin Franklin House Publishing Co., 1984).
2. Lyndon H. LaRouche, Jr., *There Are No Limits to Growth* (New York: The New Benjamin Franklin House Publishing Co., 1983).

The Christian Roots of The 'Ideas of 1776'

by William F. Wertz, Jr.

In 1991, Cambridge University Press published the first English translation of *The Catholic Concordance*, a book written in 1433 by Nicolaus of Cusa (1401-64). The significance of this book, translated by Paul Sigmund, is that in it Nicolaus of Cusa puts forward the idea, based on natural law, that in both religious and political affairs the authority to govern rests upon the "consent" of the governed.

With the publication of this work in English, the political and ecclesiological theory of one of the most profound thinkers in Western civilization will now have a broader influence on our own times, than the largely unacknowledged influence it has already exerted through those few who previously had access to it. In the religious sphere, the wider availability of this work will strengthen the reform of the Roman Catholic Church, which was launched during Vatican Council II, and contribute to the restoration of unity among Christians. In the political arena, Cusa's work, which contributed to many of the concepts reflected in the U.S. Declaration of Independence and Constitution, will revitalize our commitment to human equality and freedom and to the rule of law.

This book is particularly important today, as we search for sound principles upon which to establish peace in a world threatened with economic depression in the advanced sector nations, genocidal conditions among the vast majority of the world's population, and social disintegration in the former Soviet Union. In opposition to those who advocate a New World Order based upon the lawless concept that "might makes right," Cusa provides us with an alternative conception

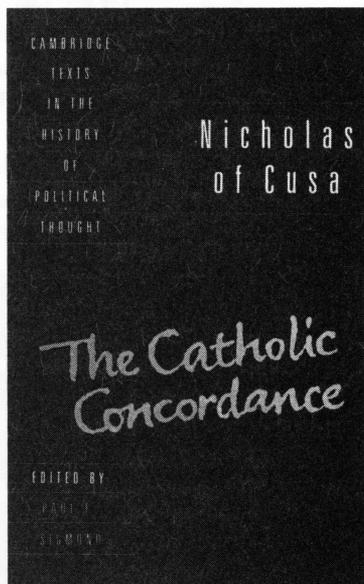
consonant with our own republican Constitution and with the true principles of Christianity.

Who was Nicolaus of Cusa?

In order to understand the context in which Nicolaus of Cusa wrote *The Catholic Concordance*, we begin with a short biographical sketch.

Nicolaus of Cusa was born in 1401 in the city of Cues, in the diocese of Trier, Germany. In his very early years he reportedly received educational training from the Brothers of the Common Life. In 1416, he attended the University of Heidelberg, which he left in 1417 with a bachelor's degree in philosophy, in order to begin the study of canon law in Padua, Italy. He completed this study, and in 1423, received a doctorate degree. In 1425, he returned to Germany and enrolled at the University of Cologne, where he studied philosophy and theology. In 1426, he became the secretary to the Archbishop of Trier and in 1427 dean of the Church of St. Florin in Koblenz.

In 1430, the Archbishop died, and a struggle ensued over his replacement. An election was held, the results of which were contested and appealed to the Pope, who named the Bishop of Speyer as the new Archbishop. In 1432, one of the original contestants, Ulrich von Manderscheid, represented by Nicolaus of Cusa, brought his claim to the Council of Basel, which had begun in July 1431. Although Cusa was eventually to lose this case, shortly after arriving in Basel, he was incorporated into the Council and made a member of the Committee on the Faith. During the



Nicolaus of Cusa:
The Catholic Concordance,
edited and translated by
Paul E. Sigmund,
Cambridge University Press,
New York, 1991,
326 pages, hardbound,
\$69.95

course of 1433, as a member of the Committee on the Faith, he wrote the *Catholic Concordance*, which he submitted to the council at the end of 1433 or the beginning of 1434.

In this book, the central, revolutionary thesis which Cusa develops is that, since by nature all men are created equal in power and freedom, and are endowed by God with reason, all authority over them can only be established by election. Since all legislation is based on natural law, and natural law is based on reason, all legislation, to be valid, must be rooted in the reason of man. Therefore, all legitimate governance and all true religious and political peace can only come from the agreement and consent of the people, and not from any coercive law imposed on someone against his will.

Cusa, however, was not unaware of the dangers of pure democracy. Since in his view, "the number of fools

is infinite," in order to avoid a situation in which ignorance might outweigh the vote of the wise and the majority might become tyrannical, he insisted that true freedom must be subject to reason.

The Crisis

The situation which compelled Nicolaus of Cusa to propose reforms based on this concept of natural law was as disastrous as that facing us today.

In the year 1433, the division in Christendom between the Roman Church and the Eastern Orthodox Church, which had occurred in 1054, was still in effect. The Ottoman Empire, which was to seize Constantinople twenty years later in 1453, was already a military threat.

In the West, the Roman Church was itself divided. The Council of Constance (1414-18) had only recently succeeded in ending the schism created by the simultaneous existence of three rival claimants to the papal throne.

The Council of Basel began to meet in July 1431. However, the new Pope, Eugene IV, urged the relocation of the council to a site in Italy, so that he could attend, and because the Greeks, with whom reunification was to be negotiated, preferred an Italian city. The Council refused to relocate, insisting on conciliar supremacy, a doctrine which the Pope condemned as heretical.

At the same time, in Bohemia (modern Czechoslovakia) the Hussite heresy continued to threaten further internal division.

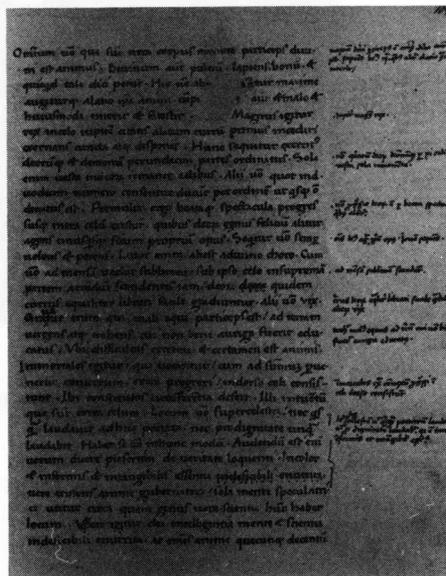
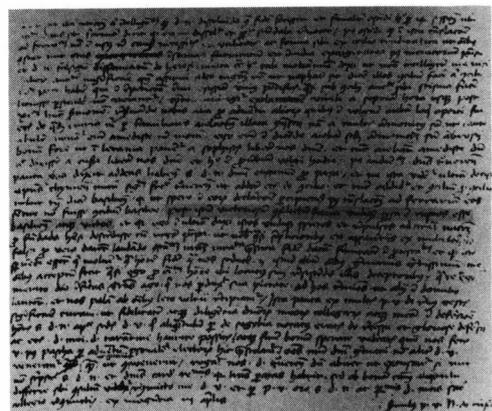
Moreover, the level of corruption within the Roman Church was so pervasive as to cry out for reform. One example of this was the practice of the Roman curia avariciously consuming the income of subordinate churches. In regard to this situation, Cusa writes:

Observe that those who use some pretext to burden their subordinate churches are guilty of sacrilege. This is why this world cries out at the acquisitiveness of the Roman curia. If simony is in a way a kind of heresy, if it is a sacrilege and according to the great

Photographs of historical material which appear in this article are reprinted from Nikolaus von Kues, 1401-1464: Leben und Werk im Bild, by Dr. Helmut Gestrich, Cusanus-Gesellschaft, Bernkastel-Kues, by the kind permission of the author.



Nicolaus of Cusa manuscripts: Left: sketches of Plato, Socrates, Aristotle, and Anaxagoras. Bottom, right: marginal notes to a Platonic dialogue. Bottom, left: letter to Cardinal Cesarini.



Apostle idolatry to burden subordinate churches, a reform is necessary which will take away all these profits—in particular since the whole church is scandalized by the avarice of its rulers, and by that of the Roman curia more than of the other churches.

The state of the Holy Roman Empire was no better. As Cusa writes:

A mortal disease has invaded the German empire and unless an antidote is found at once, death will surely follow. You will seek the empire in Germany and will not find it. As a result others will take our place and we will be divided and subjected to another nation.

Contributing to the threat of invasion and subjugation, was the threat of internal rebellion because of the prevailing degree of injustice. Cusa reports:

And where there is no order, there is confusion. And where there is confusion, no one is safe. And so when the nobles are fighting among themselves, the people will rise up to seek justice through their own arms. Then, as the princes destroy the empire, the people will destroy the princes.

The One and the Many

Although the conditions described above are no different in many respects from those cited by the Protestant Reformation a century later, the reform Nicolaus of Cusa proposed in the *Catholic Concordance* was designed to bring about a solution *within* the Catholic Church. In fact, what this book makes clear is that an alternative route to reform of the church did exist, which would have addressed the legitimate grievances of the Protestant Reformation, while avoiding its destructive excesses.

In Book I, Cusa emphasizes that a “divine harmony” underlies the church. “Concordance is the principle by which the Catholic Church is in harmony as one and many—in one Lord and many subjects.” For Cusa, the paradoxical relationship of the one and the many is solved through the conception of the Catholic Church as the body of Christ and of each member as the adopted son of God through imitation of Jesus Christ. According to Cusa, as members of the one body of which Christ is the head, all spirits of a rational nature are capable of participating in various gradations in that most infinite concordance, which is the Triune God.

Since, as Cusa says, “all created things demonstrate the Trinity,” universal harmony is to be achieved on earth by men to the extent that they act as the adopted sons of God. In the infinite concordance, which is the



Frontispiece, *De Concordantia Catholica* (The Catholic Concordance).

triune God, there is difference but no opposition. Among men, concordance also requires difference or diversity, but it does not endure if men sin by acting in opposition to the rule of reason upon which it is founded. Joined in “rational harmony with the Word” through faith, the many become capable of increasing charity, “so as to produce one temple and one spiritual dwelling-place for all.” Moreover, the more we adhere to Christ, who is “justice itself” and also the “highest truth itself,” the more just and wise we ourselves become. Cusa concludes:

In summary, therefore, we may say that Christ is the way, the truth, and the life, and the head of all creatures, the husband or spouse of the church, which is constituted in a concordance of all rational creatures—with him as the One, and among themselves, the many—in various [hierarchical] gradations.

Stressing the same point later on, Cusa writes:

And this is our fundamental premise—that the Word is the wisdom of the Father, and wisdom is life (Proverbs 8). Thus every rational creature that has been or will be on earth must adhere to the Word, and sin which was the cause of death both among the angels and men was contrary to the wisdom of God.

Natural Law

In Book II, Cusa further develops his concept of natural law:

All legislation is based on natural law and any law which contradicts it cannot be valid. Hence since natural law is naturally based on reason, all law is rooted by nature in the reason of man. The wiser and more outstanding men are chosen as rulers by the others to draw up just laws by the clear reason, wisdom, and prudence given them by nature and to rule the others by these laws and to decide controversies by the maintenance of peace. From this we conclude that those better endowed with reason are the natural lords and masters of the others, but not by any coercive law or judgment imposed on someone against his will. For since all are by nature free, every governance whether it consists in a written law or is living law in the person of a prince—by which subjects are compelled to abstain from evil deeds and their freedom directed towards the good through fear of punishment—can only come from the agreement and consent of the subjects. For if by nature men are equal in power and equally free, the true properly ordered authority of one common ruler who is their equal in power cannot be naturally established except by the election and consent of the others and law is also established by consent.

Cusa, therefore, concludes:

The canons are based on natural law. Even the ruler has no power to violate natural law, and therefore he also has no power over a canon based on, or incidentally following from, natural law.

The State

In Book III of the *Catholic Concordance*, Cusa directs his attention to the state. In a preface to the third book Cusa advances the fundamental principles of his political theory. He writes: “From the beginning men have been endowed with reason which distinguishes them from animals.” As a result of a “divine law infused in all men,” they knew that “associating together would be most beneficial to them and that social life would be maintained by laws adopted with the common consent of

all—or at least with the consent of the wise and illustrious and the agreement of the others.”

Throughout the preface Cusa explicitly refers to Aristotle’s *Politics*. However, as Paul Sigmund points out, he transforms Aristotle by attributing concepts to his *Politics* which do not appear in that work.

First, Cusa argues that Aristotle concluded that “the weightier part ought to act for the remainder of the polity.” Aristotle, in fact, refers to the “stronger part,” a term which does not denote superiority based on reason, but rather simply on power.

Second, while Aristotle argues that some are slaves



Far right:
Nicolaus of Cusa,
1460.

Right: The
Council of Basel,
by Hartmann
Schedels
Weltchronik.

Above, from left:
Cardinal
Bessarion,
Pope Pius II
(Piccolomini),
Anti-Pope
Felix V.



by nature, Cusa says that “nature does not make a slave, but rather ignorance, nor does manumission make one free, but learning.” From this same standpoint Cusa argues that “servitude can be by choice.” Thus, he transforms Aristotle’s advocacy of slaves as physical property into an argument in behalf of the “voluntary subjection” of the governed to the wise.

And third, Cusa attributes to Aristotle the idea that the ignorant consent to being governed by the wise for the common good, a concept not present in the *Politics*. “And when government is so organized, then ‘it is impossible for an aristocracy, that is a city governed according to virtue’ by the wise with the consent of the

others for the common good, 'not to be well ordered,' as Aristotle says. . . ."

Thus, in opposition to Aristotle, Cusa argues that "the common good only comes from the consent of all or of a majority." Therefore, "every monarchical or aristocratic regime, since those regimes must be established over willing subjects, should be established by election. . . ."

Cusa then derives the notion of government based on the consent of the governed from the figure of Christ himself. He writes:

But besides what is said above, the most important requirement is that every ruler who is a faithful

Christian should model himself on the figure of Christ whom he represents and succeeds. And so let him look to Christ who is truth itself. And let him consider first that he is Lord and master, God and man, and thus every government is composed of human and divine elements.

From the fact that Christ is God and man Cusa concludes that on the one hand rulership comes from God and on the other hand from man, "just as Christ was the true son of the Virgin Mary." Cusa then argues that Mary's decision to give birth to

Christ "by her own free consent when she said 'Be it done unto me according to thy word,' is proof of the fact that rulership is derived both from God and from the consent of the governed.

Moreover, since Christ came not to destroy the law, but to fulfill it, the ruler, like Christ, is under the law and should do nothing contrary to the laws.

Cusa summarizes his political theory as follows:

[A]ll legitimate authority arises from elective concordance and free submission. There is in the people a divine seed by virtue of their common equal birth and the equal natural rights of all men so that all authority—which comes from God as does man him-

self—is recognized as divine when it arises from the common consent of the subjects. One who is established in authority as representative of the will of all may be called a public or common person, the father of all, ruling without haughtiness or pride, in a lawful and legitimately established government. While recognizing himself as the creature, as it were, of all his subjects as a collectivity, let him act as their father as individuals. This is that divinely ordained marital state of spiritual union based on a lasting harmony by which a commonwealth is best guided in the fullness of peace toward the goal of eternal bliss.

On the same natural law basis, Cusa argues that since the power of the Holy Roman Emperor derives from the consent of the people, if the Emperor abuses that power, this power can be taken away. "It is the common opinion of all the experts on the subject that the Roman people can take the power to make laws away from the Emperor because he derives his power from the people." He writes further: "When they order something contrary to a divine commandment it is evident that the command does not share in the divine rulership, and so one should not obey it. . . ." Finally, "no one is obliged to observe an unjust law, and no living person is exempt from a just one."

Separation of Powers

In the *Catholic Concordance*, Cusa argues that the powers of the church and state are "independent and distinct." He condemns both the involvement of the church in temporal affairs and the efforts on the part of the Empire to subordinate the church to its authority. However, as should be clear from the above, Cusa does not advocate the conception which is prevalent today, that the state, in order to be separate, should in effect be atheistic.

For Cusa, the very purpose of rulership cannot be divorced from the precepts of religion:

For every king and emperor holds public office for the public good. The public good consists in peace, the goal towards which justice and just wars are directed. But the foundation of peace is to direct subjects to their eternal end and the means to reach that end are the holy precepts of religion.

Cusa derives the responsibility of the ruler "to act as universal guardian of the faith" neither from his dependency on the Roman pontiff nor from the succession of believing Emperors, but rather from "the basic transfer of power from the Christian Roman people." He elaborates: "Once the Roman people became Chris-





EIRNS/Philip Ulanowsky

Institute founder Helga Zepp-LaRouche displays the Declaration of the Inalienable Rights of Man, modeled on the U.S. Declaration of Independence, in January 1985. The Declaration echoes Cusa's assertion that "since all are by nature free, every governance . . . can only come from the agreement and consent of the subjects."

tion, they chose as their rulers Emperors of the same faith as the people. Therefore I believe that it is true . . . that it is the intention of the people only to transfer power to a ruler if he has the faith. . . ."

In addition to advocating this concept of the separation of church and state, Cusa also proposed a wide-ranging reform of the state designed to increase its capacity to re-establish the rule of law based on the consent of the governed. Pointing to the fact that Constantine had established a judicial system and had provided for annual imperial councils in Gaul, he argues that "it was after the imperial courts and meetings ceased, that nearly all the abuses were introduced." Therefore, to restore the Empire to its original healthy state, he proposes the appointment of a judiciary in each of the provinces and the convoking of an annual council.

As to the former, Cusa proposes the creation of twelve or more courts throughout the provinces subject to the Empire. Each court should be composed of three judges corresponding to each of the three social classes—nobles, clerics and people.

As to the latter, Cusa proposes that this month-long meeting be attended by the Emperor, who should preside, all the judges and electors of the Empire, represen-

tatives from each city and metropolis, and from the imperial fortified towns. That Cusa conceives of such a council as a means of establishing checks and balances through the separation of powers is evident from the following: "No one doubts that a universal council that acts by agreement of the head and members, functions as a limit on the power of the executive for the good of the commonwealth."

In addition, Cusa proposes that, with the agreement of his universal council, the ruler should have a daily council of the

best qualified of his subjects from all parts of the realm. These counsellors ought to represent all the inhabitants of the realm. . . . These counsellors ought constantly to defend the good of the pub-

lic which they represent, giving advice and serving as the appropriate means through which the king can govern and influence his subjects and the subjects on proper occasions can influence him in return. . . . The counsellors should be appointed to this task by agreement in a general meeting of the kingdom, and they should be publicly bound legally by oath to speak out openly for the public good.

The reforms that Cusa proposed in the *Catholic Concordance* were not implemented at the Council of Basel. Nor were they fully realized in the aftermath of the Council of Florence, in the context of the decade-long division of the Western church, the military defeat at Varna in 1444, and the seizure of Constantinople by the Turks in 1453.

Nonetheless, the underlying philosophical principles which his reforms reflect did have a significant impact upon the Golden Renaissance which followed the Council of Florence. Moreover, his conception of government as regards both the church and the state is one that we are still striving to realize today. Thus, although conditions are now different, Cusa's conception of natural and divine law remains the equally valid basis for universal concordance today.

OUTLINE OF A MEMORANDUM

On the Establishment of a Society In Germany for the Promotion of The Arts and Sciences

(1671)

Gottfried Wilhelm Leibniz

GOTTFRIED WILHELM LEIBNIZ was born in Leipzig, Germany on July 1, 1646, two years before the end of the Thirty Years War which had devastated most of Europe. The son of a professor of moral philosophy, he studied at the Universities of Leipzig and Jena. In 1667 he rejected an offer of a professorship and instead entered the service of the Baron of Boineburg, who had been a minister of the Elector of Mainz. While in his service, Leibniz was sent on a mission to Paris, the intellectual capital of Europe at the time, where he stayed from 1672 to 1676. During this stay he discovered the differential calculus and constructed a calculating machine.

Upon his return to Germany in 1676, he accepted a post under the Duke of Hanover. His nominal duties were various: he was librarian, jurist, and official historian. From this position, however, he developed and maintained an international network of political and scientific collaborators.

In his philosophical and theological writings, such as the Discourse on Metaphysics, the Theodicy, and the Monadology, Leibniz distinguished himself as a Christian humanist opponent of both the British empiricist philosophy of Thomas Hobbes (1588-1679), John Locke (1632-1704), and Isaac Newton (1642-1727), and of the French rationalist philosophy of Rene Descartes (1596-1650).

The essay translated in this issue of Fidelio is one of two written by Leibniz in 1671, which laid the basis for the development of the science of economics. The other essay, entitled "Society and Economy," deals with the subject of the necessary costs and wages of productive labor.

In contrast to today's free market monetarists, who could care less about the development of physical economy, Leibniz, who intensively studied the principles of heat-powered machinery, was the first to define technological progress as necessary to the development of human society. According to Leibniz, the function of a heat-powered machine is to enable one man to accomplish the work of "a hundred others." Thus, technological progress, although not an end in itself, is a necessary means to the liberation of man; it is thus an expression of true love.

The significance of the essay which appears below is that, in contrast to those who in the tradition of Adam Smith deliberately divorce morality and economic science, Leibniz explicitly locates the science of economics as derived from Christian morality. True economic science is an expression of the Christian virtues of faith, hope, and love.

[[1]]

The topics of this memorandum are (1) whether and (2) how to set it up. Although, what we have to say about how to set it up, will serve to show that it is to be set up. To the extent that we think about its nature and characteristics, to that extent we must give an account of examples of its operation and usefulness.

[[2]]

If it is asked, whether it is to be set up, the answer is, *yes*, and, indeed, as much for the sake of the founders themselves as for the common good. Those who found it I take to be so constituted that, because of their distinguished position, power, and reputation, they have no need of anything other than a good conscience and immortal glory with those judges who cannot be deceived: God and posterity. Both will, of course, only render their judgment in the future; yet even in this life, for persons of high standing and especially for generous men—who are not pressed by necessity and who pay no heed, out of regard of their conscience and their health, to the pleasures of the body beyond necessity—there is nothing sweeter and nothing which promotes health more than that contentment, that joy, that peace of mind and, in a word, that heaven on earth, which gives a truthful foretaste of the future blessedness now, which is otherwise to be believed and hoped for from God and posterity, and which portrays to the mind in a glimpse, as it were, concentrated in a moment, the fruits of eternity. Thus it may be concluded that such a society is to be founded for the sake of (1) the good conscience and (2) the immortal glory of the founders, and also (3) for the common good. Although the common benefit of such a praiseworthy work, agreeable to both God and men, establishes the merit of the founders, their good conscience as well as their immortal name, is the true and infallible reason. Which is now to be shown, point by point.

[[3]]

A good conscience is, as I, so to speak, define it, a joy of the mind because of hope for eternal blessedness. So much, that is, and this is self-evident, as the assurance of that is within human power, if a man does all that is possible, and leaves the rest to the infallible, promised grace of God, who is fundamentally good and at the same time just.

[[4]]

Hope is faith concerning the future, exactly as faith is, so to speak, a hope concerning the past. For faith amounts to the hope that the past is truly as we say. But true faith, and true hope are not merely a matter of talk, nor even

of mere thought, but of thinking in action, that is, action as if it were true. To believe in God, to place hope in God, is to believe that God loves us and that his love offers to awaken in us a reciprocal love through our Savior and Mediator; and to hope that if we love Him in return with our whole heart, that therefore there will arise an indissoluble friendship, and a true and eternal friendship, that there will follow an inexpressible infinite joy in the life to come.

[[5]]

Thus hope and faith are founded on love, and all three on knowledge. Love is a joy of the mind arising out of contemplation of the beauty or excellence of another. All beauty consists in a harmony and proportion; the beauty of minds, or of creatures who possess reason, is a proportion between reason and power, which in this life is also the foundation of the justice, the order, and the merits and even the form of the Republic, that each may understand of what he is capable, and be capable of as much as he understands. If power is greater than reason, then the one who has that is either a simple sheep (in the case where he does not know how to use his power), or a wolf and a tyrant (in the case where he does not know how to use it well). If reason is greater than power, then he who has that is to be regarded as oppressed. Both are useless, indeed even harmful. If, then, the beauty of the mind lies in the proportionality between reason and power, then the beauty of the complete and infinite mind consists in an infinity of power as well as wisdom, and consequently the love of God, the highest good, consists in the incredible joy which one (even now present, without the beatific vision) draws out of the contemplation of that beauty or proportion which is the infinity of omnipotence and omniscience.

[[6]]

Again: Faith, hope, and love are wonderfully strengthened through the knowledge and certainty of the omnipotence and omniscience of God. For because He is the highest wisdom, then it is certain that He is so just and good, and has truly loved us his creatures, that He has done everything possible (that is, as much as the universal harmony of things allows, and which can be done without harm to our free will) in order to assure that we love Him, on which faith rests; but if He is also at the same time the highest power, so it is certain that He is powerful enough to allow those who love Him in return to enjoy His love, that is, to make them eternally happy. Which consideration is the foundation of hope, and if it is taken truly to heart, it alone is enough to make men blissful and to make even misfortune, poverty, persecution, con-

tempt, sickness, torment, and death for them as nothing—indeed, even sweet.

[[7]]

But just as faith and hope are not a mere formality, but rather practical thought, which is to act as if it were true (above, Section 4) that God loves us, so is the love of God also not merely formal, but is the will in action: which is, to do everything within our power to make it true and real that we also love Him to the utmost. The reality of love consists in our doing what pleases the beloved. What pleases God is again given by knowledge, in so far as it is within our power. For just as the knowledge that He is omnipotent and omniscient is the reason (above, Section 6) why we are to love Him, so is the knowledge that He knows all and is omnipotent, as much as we can attain to that, the guiding principle according to which we are to really love Him.

[[8]]

The knowledge of the Divine Nature is naturally to be derived out of nothing other than the true demonstration of His existence. Such must principally be taken from the fact that it is not possible without Him to furnish a reason (and yet nothing is without a reason) why things which might not exist really do exist; and further, why things which could be confused and chaotic are in such a beautiful, inexpressible harmony. The former establishes that He must be the ultimate reason of things and therefore the highest power; the latter, that He must be the ultimate harmony of things, and thus the greatest wisdom.

[[9]]

From this it follows inexorably that charity, the love of God above all, and true contrition, on which the assurance of blessedness depends, is nothing other than that love of the public good and of universal harmony; or rather, on that account, the glory of God and to understand are the same, and how great it is in itself to make greater, for there is no more distinction between universal harmony and the glory of God, than between body and shadow, person and picture, between a direct and reflected ray of light, since the one is what is in fact, the other what is in the soul of him who knows it. For God creates rational creatures for no other reason but that they should serve as a mirror, in which His infinite harmony would be infinitely multiplied in some respects.

From which must arise in due course the completed knowledge and love of God, in the beatific vision or the incomprehensible joy which the mirroring, and to a certain degree the concentrating of the infinite beauty in a small point in our souls, must bring with it. And thus, a burning mirror or burning glass is the natural image here.

[[10]]

If then the love of God above all, contrition, and eternal beatitude arise from the fact that each comprehends the beauty of God and the universal harmony according to his own rational ability, and reflects it back onto others; and additionally, according to the proportion of his ability, promotes and increases that shining forth in men and other creatures; then it follows from that, that all of those to whom the somewhat sparing nature, in order to shade the world with variety, gave a lesser degree of reason and power, so that they must serve others as instruments and means, do enough if they let themselves be used as instruments for the glory of God and, what is the same thing, for the common good, and for the nourishment, ease of labor, comfort, instruction, and enlightenment of their fellow man, for discovery, research, and improvement of creatures, according to the limitations of ability and knowledge. Thus they satisfy their conscience.

[[11]]

Those who are provided by God with reason without power are appropriately advisers, just as those to whom power is given, should appropriately pay kind attention, and not throw out good proposals, but should rather consider that someday the good, but scorned adviser, will stand before the omniscient Judge, to their dismay, with reproaches, even if silent, of idleness or sinfulness. On the other hand, the disdained, but intelligent advisers are not to attempt to go beyond advising, but are to consider that God reserves a good plan for a better time, and out of His hidden deliberations has not given them a power equal to their reason, and therefore they should in no way attempt to achieve such, in order to carry out their good advice through prohibited words and deeds and machinations which disturb the state.

[[12]]

Those to whom God has given reason and power together in the highest degree, are the heroes whom God has created for the execution of his will, as the principal



Gottfried Wilhelm Leibniz

instruments; but whose invaluable talent, if hidden away, will be extremely difficult for them. The corruption and the putrefaction of the best from excessive idleness is worst of all. It is a crucial point, on which blessedness and mortal justice depends, to properly use one's reason and power for God's glory. Thus, I believe a conscientious man should not accept the Philosopher's Stone—to which is attached that difficult condition, which invariably attaches to all great power—without fear and trembling, so that he may never hear the harsh words, "Be damned with all your wealth!"

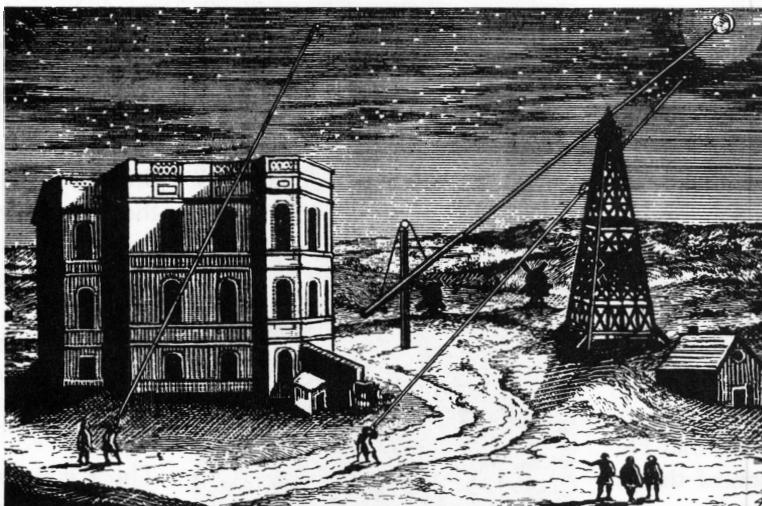
[[13]]

Now reason and power can be used for the glory of God principally in three sorts of ways, exactly as I can meet a man in three sorts of ways; that is, with good words, good thoughts, and good works, or, as the latter are called among men, kindnesses. With God, it is, firstly, praise and sacrifice, next, hope with faith, and finally, good works or obedience, or effective charity. Charity is better than mere faith, obedience is better than sacrifice, faith is better than the feigned sacrifices and praises of those who honor God only with their lips.

Hence, we serve God either as orators and priests, or as natural philosophers, or as moralists and politicians.

[[14]]

Consequently, those who worship God with praise and sacrifice are orators and priests (setting aside those who care for souls and sacraments, so that they may thus be of benefit to the souls and who belong to the third class, and also not to mention that among the ancients, those who were priests were philosophers at the same time, and those who guide public affairs and for many reasons should still rightfully be so regarded). Now, orators are those who serve with words, priests with ceremonies. But this involves a great and glorious work, to proclaim the glory of God, and at the same time to enkindle everyone with love of Him. Thus, that which is so established, one is wont to say is



The Paris Observatory, 1705.

established absolutely for the glory of God, for although all good is directed to the glory of God, this goes to glorify God both visibly and audibly for the common man, because it refers directly to the glory of God with the words in which it consists. Also, that which is so established, will be called generally most excellent and absolutely a good work. And what is dedicated as a means to pleasing sacrifice to God, to preaching and music, the composing of gloriously moving songs of praise (in which the ancient Hebrews and even the pagans so exceeded what we enjoy and do), to decorous ceremonies and church ornaments, to glorious temples and churches (which serve to awaken even greater veneration), if these are well used, then they are without doubt to be considered well constructed. And thus it occurs to me that—with the establishment

among the French of an academy or society, created by Cardinal Richelieu for the improvement and elaboration of the French language—that one pious man desired to see instituted among other things in the rules, that each member should be responsible for composing something every year to the praise of God; which, however, I know not why, was not done.

[[15]]

And among philosophers, those honor God who discover a new harmony in nature and art, and thus make His omnipotence and wisdom visible. Thus Moses, Job, David and others were accustomed for the most part to take the material for their songs of praise from the natural wonders which God implanted in creation, as much as from that which He had done for the salvation of His people: how He set limits to the sea, arched over the heavens, traveled far above the clouds, sounding His thunder, giving rise to rivers, growing plants, and having the animals find, at the proper time, their nourishment and food.

[[16]]

Therefore, it is certain that to the extent that one knows

a wonder of nature, just to that extent he possesses in his heart images of the majesty of God, if only he refers them thus back to their original: and for that reason the glorious thoughts of an excellent man of the *Patris Spee Soc. Ies.* are to be praised, who proposed that one should refer to almost nothing without reflecting as much as possible on the glory of God; far less the glorious wonders with which the creatures silently manifest and praise Him.

[[17]]

And therefore, I am of the opinion, that even the great moralists and politicians, who are not, however, naturalists, and who are neither conversant with nor pay attention to the wonders of nature, are missing a great part of the proper awe, the true knowledge and the devout love of God, and thus the perfection of their souls, to the point that their art of knowing and ruling men is not made good through excellent science and good practices. Therefore, no one can praise God with more zeal and greater energy than he who, with his eloquence and poetry, and also in true philosophy, goes beyond the boundaries of common knowledge.

[[18]]

Especially are those among men to be esteemed, however, who doubtless stand in the grace of God, who with the good intention of praising the Creator and of being of service to their neighbor, discover a glorious wonder of nature or art—it may only be an experiment, or a well-established harmony, and, as it were, just through that, honor God with perorating and poeticizing; just as empirical scientists are to be esteemed higher than orators or historians, and theorists higher than real poets, because the former conceive certain experiments which agree with nature—the latter only fictions—and conceive of rhyming hypotheses on the basis of experiments, and with that harmony praise the wisdom of God.

[[19]]

As often as a new structure is discovered by means of experiment by the now industrious anatomists, or a

hitherto unknown function of a long known structure is conceived by means of hypotheses, just so often will the omnipotence and wisdom of God, as it were, be illuminated with living colors, and a rational man will be moved to an awe of the wisdom, a fear of the power, and to a love of the harmony of both, which is the beauty and goodness of his Creator, far more than he is through a thousand speeches, songs, and, indeed, even sometimes lectures and homilies. Correspondingly, one such discovery can be the material and source of more than a thousand beautiful songs of praise.

[[20]]

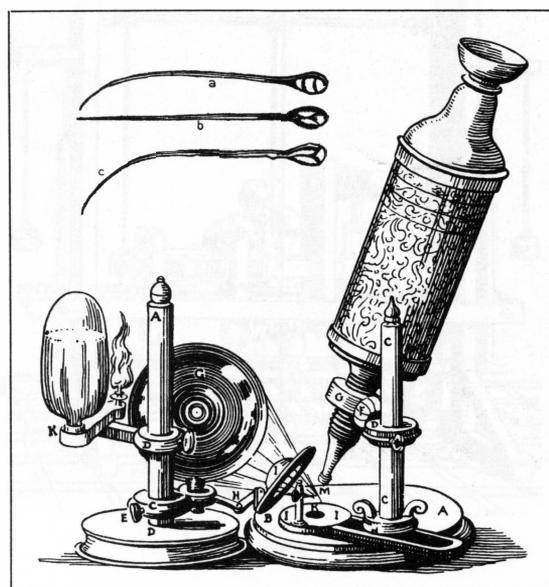
Therefore, any truth, any experiment or theorem, which is admirable and worthy of consideration, even if no problem could be made of it (which is seldom), even if it were not lucrative but only luciferous, is, as such, to be considered as a new-found mirror of the beauty of God, and to be esteemed as invaluable and more noble than the costliest diamond, and therefore also, what is used among honorable, God-fearing and rational people to the perfection of nature and the real arts, must be considered for the most holy cause and to the benefaction of the inexhaustible true glory of God.

[[20A]]

Which is not even to mention, that most would have a benefit for human life, if our evil institutions, carelessnesses, and distractions did not make all our real and useful discoveries, of which there have been not a few in our century, worthless to us. As thus medicine is hardly improved at all by the newly discovered lacteal and lymphatic vessels, of circulation, and so many other ducts, nor by the light which was kindled by chemistry and thrown onto nature, and the methods of medicine remain in the same bad condition with practioners, who are only greedy for money, as it has always been in the past.

[[21]]

For that reason, the third way to seek the glory of God, namely those who serve Him as moralists, as politicians, as those who guide public affairs, is the most perfect,



Hookè's microscope, 1665; drawings of spermatozoa by Leeuwenhoek, 1697.

since those not only endeavor to find the radiance of God's glory in nature, but also seek to emulate Him through imitation; and thus seek to honor Him not only through praise and devotion, or with words and thoughts, but also with good works, not only to consider the good He has done, but to sacrifice themselves to Him and offer themselves as an instrument and through that to do more good for society and in particular for the human race, as the best of all visible creatures, in those things which we have the power to effect, and for which we are ordered and created.

[[22]]

These are the ones who apply the discovered wonders of nature and art to medicine, to mechanics, to the comfort of life, to materials for work and sustenance of the poor, to keeping people from idleness and vice, to the operation of justice, and to reward and punishment, to preservation of the common peace, to the increase and welfare of the fatherland, to the elimination of times of shortage, disease, and war (insofar as it is in our power and is our responsibility), to the propagation of true religion and fear of God, indeed, to the happiness of the human race; and who endeavor to imitate in their domain what God has done in the world.

[[23]]

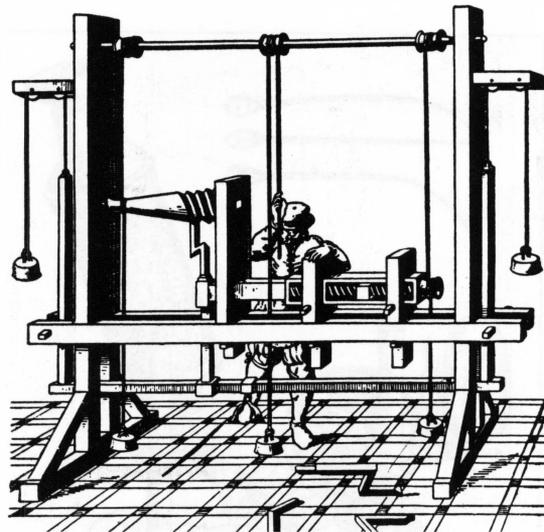
Such happiness of the human race were possible if a general agreement and understanding were not to be counted as chimeras, and placed along with More's *Utopia*, Campanella's *Civitate Solis*, and Bacon's *Atlantis*, and in general were not commonly too distant from the most powerful Lord Councillors of the common welfare. Nevertheless, it follows from reason, justice, and conscience that each does in his sphere of activity that by which he may be justified before God and the tribunal of his own conscience. If we are not able to do what we want, then we want what we can do. Perhaps through finding means, which though apparently of no great importance and involving no great costs, yet are for the common good, for the stimulus of the nation, for the

support and maintenance of many men, for the glory of God and the discovery of His wonders, great results could be accomplished.

[[24]]

Among such means, one of the easiest and most important will be the establishment of a society or academy, well grounded although small at the start. Through that, the natural genius of the Germans will be inspired, according to the examples of all their neighbors, which it is hoped they will excel:

- an increased agreement and closer correspondence of skilled people will be aroused, creating opportunity and arrangements for many excellent and useful thoughts, inventions, and experiments, which are often lost, because now those having them will have the confidence to communicate and then to receive them back again;
- to supply and make useful resources and funds, and other things lacking, on a large scale;
- joining theory and experiment in a happy marriage, the one supplying the deficiencies of the other;
- establish a school of inventors and, as it were, an official laboratory, in which each could readily work out his tests and concepts; discover the kinds and advantages of experiences which increase of themselves not in the least by chance (even if in the beginning there is only a small number);
- indeed, means will be supplied to maintain the nourishment of the people, to establish manufacturing and consequently draw in commerce, and in time to establish workhouses and houses of discipline for the idle and criminal in which to work;
- erect warehouses filled with necessities for emergencies, and even in the future form a safe bank for rentiers who wish to invest their money;
- to enter into companies, enter into negotiations with those formed;
- to encourage the Germans to commerce on the sea,



Screw-cutting lathe.

joining up with the Hanseatic cities;

- to improve the schools, furnishing the youth with exercises, languages, and the reality of the sciences before they unfortunately travel, and establish Gentlemen's Schools as well;
- to facilitate the crafts through improvements and tools, through always inexpensive fire and motion;
- to test and be able to work out everything in chemistry and mechanics, to work with glass, to create telescopes, machines, water devices, clocks, lathes, painting studios, presses, paint companies, weaving factories, steel and iron works, and even some quite useful things which, when done in a small way without organization are unfruitful;
- to support private laws in land before all else except for new inventions;
- to get support from high places, to support foundations and organizations for curiosities, to form a theater of nature and the arts or chamber of arts, rarities and anatomy for easy learning of all things not in the now established herbal and other gardens and libraries;
- to summarize books and manuscripts and posthumous works, to bring together scattered reports, experiments, and letters of correspondence, to have everything in order and indexed;
- to support poor students and at the same time create institutions for their work which will be useful both to them and to society;
- to support impoverished eccentrics who have ruined themselves through extravagance, and merchants, ruined through misfortune as well, helping both for their own benefit and that of society;
- to support useful people on the land (who only wish to have provisions and materials for their nourishment, who for the most part, when they sense something is wrong in the world, leave the land and go over to foreign rule, much to the harm of themselves and the ruined fatherland, some falling into a life of dissipation, running off to war and destroying themselves or being cut off or removed in their first bloom, when they and others like them could people

bloom, when they and others like them could people the land with families and thus be useful); to put them to work; to preserve them from beggary, to nourish them with their wife and family; to guard them and theirs from sin, disgrace, and ruination of the soul.

On that basis, but without determining a definite time and place, rather everything being undertaken in a leisurely manner, this strategem must be brought into motion with a small fund and some small advantages.

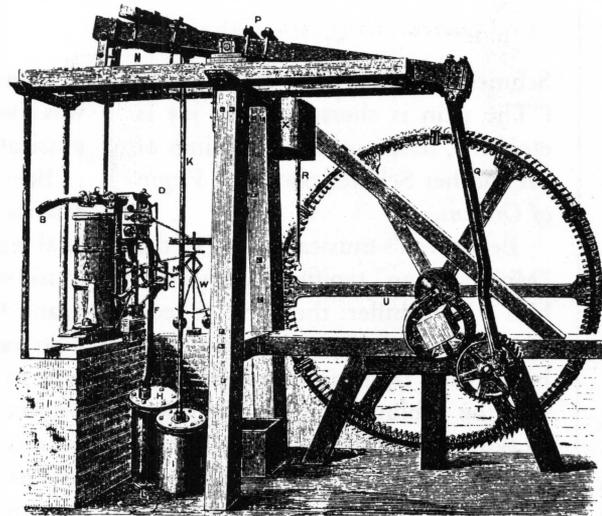
[[25]]

This is the constant, indeed continuous charity, which will grow endlessly and increase of itself and be of benefit

to many thousands of men, which is circumscribed by no limit in advance; which will not be like other foundations, with which the continuance, support, and even the goal are not always closely connected with the interests of the members and directors, and thus are subject to abuses; and which will not be easily ruined through war or death or other plagues of the country once it gets started; which is directed to the absolutely real things, to the highest glory of God and to universal approval and eternal

benediction and gratitude of posterity, which will come after and will perhaps be able to enjoy it over a long period of time; for that purpose God has given many beautiful circumstances, on which to allow delay would be irresponsible; which God hopefully will bless, indeed, in order to carry out what begins so piously, will reward us with health and long life and, finally, which all rational men most highly wish for, with eternal blessedness for our immortal souls and the prayers and blessings and witnesses of so many souls, who have been taken thereby from misery and ruination and at last can receive a decent wage. And in conclusion, this point: that whoever has the power to do something on this work, should not, for the glory of God and the sake of his own conscience, fail to reflect upon it.

—translated by John Chambless



Watt's rotative engine.

How Beethoven Set Schiller's Poetry

According to Ludwig van Beethoven's biographer Alexander Wheelock Thayer, the composer penned the following reflections during early 1817:

"He who wishes to reap tears should sow love.

"The Compassionate Brothers in *Tell*, form a semi-circle around the dead man, and sing in deep tones:

[Beethoven here inscribes the lines of Schiller's "Monks' Song," and continues:]

"This one thing I feel and clearly comprehend: Possessions are not the highest things in life, but guilt is the greatest evil. . . .

"Sensual enjoyment without a union of souls is bestial and will always remain bestial; after it, one experiences not a trace of noble sentiment but rather regret."

These lines reveal the powerful spiritual bond which united Beethoven with the German poet Friedrich Schiller, and indicate that during these months, Beethoven was intensively studying Schiller's three last plays. With *William Tell*, Beethoven refers to the final scene of Act IV, in which the monks gather around the corpse of the tyrant slain by Tell's arrow. Beethoven's comment on guilt is an almost exact quotation of the final three lines of Schiller's play *The Bride of Messina*. And only a few months before this, Beethoven had composed the canon "Kurz ist der

The study of classical settings of poetry is perhaps the most efficient way to learn the principles of poetic composition. Selections offered here are either previously unpublished, or no longer available in print.

Gesang der Mönche

Rasch tritt der Tod den menschen an,
Es ist ihm keine Frist gegeben.
Es stürzt ihn mitten in der Bahn,
Es reißt ihn fort vom vollen Leben.
Bereitet oder nicht zu gehen!
Er muß vor seinem Richter stehen!

Monks' Song

Quickly comes Man's death,
He is given no reprieve.
It strikes him mid-course,
It rips him from the prime of life.
Whether ready to go or not!
He must stand before his judge!

Schmerz, und ewig ist die Freude" ("The pain is short, but the joy is eternal"), based on the final lines of yet another Schiller play, *The Virgin of Orleans*.

Beethoven's musical setting of the "Monks' Song" typifies what united him with Schiller: the drive to seek universal truth in any material at hand, thus transforming the lowly into the sublime and the beautiful. In *William Tell*, Tell's justified slaying of the tyrant is followed not by jubilation—which would have degraded the audience by celebrating death—but rather by the monks' admonition to the members of the audience to reflect on whether they would be able to bear the awful responsibility to save the nation, borne by the patriot Tell.

Shortly after he wrote the above lines, Beethoven chose to compose a setting of the "Monks' Song" in dedication to his dear friend, the violinist Wenzel Krumpholz, who died suddenly on May 3, 1817. Krumpholz had played an important role in Beethoven's development beginning in 1795, when Beethoven began to take violin lessons with him. Krumpholz soon became one of Beethoven's staunchest defenders, and, as a

frequent visitor to his apartment, was a willing sounding-board for his musical compositions.

Beethoven's student Carl Czerny reports that Krumpholz "was a musical enthusiast whose passion for music was carried to the most extravagant lengths. . . . [a]nd Beethoven, who ordinarily was most reticent with everyone regarding his musical projects, told Krumpholz about all his ideas, played every new composition for him time and again, and improvised for him every day."

After the "Monks' Song," Beethoven's next setting of a Schiller text was his greatest, the "Ode to Joy" in the last movement of the Ninth Symphony. This was the culmination of his thirty-year effort to develop an entirely fitting setting of a Schiller poem—one which would not just fit the words like a well-tailored jacket (as Goethe had mistakenly demanded), but which would reflect Schiller's requirement, expressed in a letter to Gottfried Körner, that "Music must never paint in words and surrender itself to petty game-playing, but rather, it must follow the spirit of the poetry in its entirety!"

—John Sigerson

Gesang der Mönche

aus Schiller's Wilhelm Tell

in Musik gesetzt von

Ludwig van Beethoven

Ziemlich langsam

Tenor I

Tenor II

Bass

Rasch tritt der Tod den Men - schen an; es ist ihm kei - ne Frist ge -

Rasch tritt der Tod den Men - schen an; es ist ihm kei - ne Frist ge -

Rasch tritt der Tod den Men - schen an; es ist ihm kei - ne Frist ge -

Detailed description: This system contains the first three staves of the musical score. The top staff is for Tenor I, the middle for Tenor II, and the bottom for Bass. Each staff begins with a treble clef, a key signature of two flats (B-flat and E-flat), and a common time signature (C). The music is marked with dynamic accents: *sf* (sforzando) and *p* (piano). The lyrics are: "Rasch tritt der Tod den Men - schen an; es ist ihm kei - ne Frist ge -".

ge - ben. Es stürzt ihn mit - ten in der Bahn, es reißt ihn fort vom vol - len Le - ben. Be -

ge - ben. Es stürzt ihn mit - ten in der Bahn, es reißt ihn fort vom vol - len Le - ben. Be -

ge - ben. Es stürzt ihn mit - ten in der Bahn, es reißt ihn fort vom vol - len Le - ben. Be -

Detailed description: This system contains the next three staves of the musical score. The dynamics continue with *sf* and *p*. The lyrics are: "ge - ben. Es stürzt ihn mit - ten in der Bahn, es reißt ihn fort vom vol - len Le - ben. Be -".

rei - tet o - der nicht, zu ge - hen, er, er muß vor sei - nem Rich - ter ste - hen!

rei - tet o - der nicht, zu ge - hen, er, er muß vor sei - nem Rich - ter ste - hen!

rei - tet o - der nicht, zu ge - hen, er, er muß vor sei - nem Rich - ter ste - hen!

Detailed description: This system contains the final three staves of the musical score. The dynamics include *cresc.* (crescendo), *p*, *sf*, and *fp* (fortissimo). The lyrics are: "rei - tet o - der nicht, zu ge - hen, er, er muß vor sei - nem Rich - ter ste - hen!".

U.N. Investigates Human Rights Violations; LaRouche Files Motion for New Trial

On Feb. 7, Angelo Vidal D'Almeida Ribeiro, the United Nations Special Rapporteur mandated to investigate compliance with the "Declaration Based on the Elimination of All Forms of Intolerance and of Discrimination," officially requested that the U.S. government respond to charges that it has violated the human rights of Lyndon LaRouche.

Mr. D'Almeida informed the 48th plenary session of the U.N. Human Rights Commission: "According to information received, U.S. citizen Mr. Lyndon LaRouche is reported to have been subjected to harassment, investigation and prosecution solely because of his beliefs."

The Special Rapporteur reported that his 180-page report catalogued major human rights violations from twenty-five nations, which had been compiled from "credible and reliable information coming before him, and his work has been carried out with discretion and independence."

On Feb. 10, when, despite the serious nature of the charges, the U.S. government, which had been asked to respond to the allegations, failed to do so, Warren Hamerman, representing the International Progress Organization, told the same plenary session: "Given the special role it has sought as a kind of chairman of its vision of a *Pax Universalis*, it is incumbent upon the U.S. government to be held to the highest standards. . . . Lest the appearance of double standards operate when the U.S. is the accused rather than the accuser, we urge the Commission to insist upon a full and impartial investigation or Enquête into these allegations."

Newly Discovered Evidence

While an international spotlight was thus focused on the LaRouche case, on



Ibero-American Congressman Investigate LaRouche Case

On Feb. 25, 1992, a delegation of Ibero-American Congressmen met with O.A.S. Secretary General Joao Baena Soares in Washington, D.C., where they had come specifically to investigate the question of human rights violations in the case of Lyndon LaRouche. Shown here (left to right): Congressmen Lino Cerna Mamrique, Carlos Rivas Davila, and Eduardo Salhuana Cavidez (all from Peru); O.A.S. Secretary Baena Soares; and Congressmen Oswaldo Bockos (Peru), Jorge Leon Diaz (Venezuela), Miguel Bush Rios (Panama), and Francisco Palomino (Peru).

Jan. 22 a motion was filed in federal court on behalf of LaRouche by former U.S. Attorney General Ramsey Clark and attorney Odin P. Anderson, to vacate his fifteen-year prison sentence. The principal ground for LaRouche's immediate release from prison is that massive amounts of newly obtained evidence prove that "the prosecution conducted and participated in a conspiracy and concerted action with others to illegally and wrongfully convict him and his associates by engaging in outrageous misconduct, including financial warfare."

The motion of more than one-hundred pages, is supported by several volumes of newly discovered evidence which were suppressed by the prosecution. This evidence has been obtained as recently as Dec. 31, 1991 by LaRouche's defense team through a multitude of legal battles from coast to

coast over the last three years. The prosecution is still concealing mountains of evidence even as the LaRouche motion is filed, part of which they claim cannot be declassified because it is part of a "national security repository." Therefore, along with the motion seeking LaRouche's freedom, his attorneys have filed another motion to compel the government to turn over all exculpatory evidence detailed in the papers, as well as to conduct a series of evidentiary hearings to determine how and why key evidence was concealed and suppressed.

According to attorneys Ramsey Clark and Odin Anderson, the substantial newly discovered evidence demonstrates that the 1988 federal convictions against LaRouche and his co-defendants were obtained "as a direct result of prosecutorial misconduct including illegal acts and overreaching

which deprived defendants of their liberty without due process of law [and] by means including outrageous government misconduct during its investigation that denied defendants fundamental fairness that is shocking to the universal sense of justice and violates due process of law.”

What the Evidence Shows

The newly discovered evidence shows that the prosecution conducted and participated in a conspiracy with others to wrongfully convict LaRouche and his co-defendants. The centerpiece of the conspiracy was the bad-faith filing in April 1987 by the U.S. government of an illegal involuntary bankruptcy petition that prevented the repayment of the very loans that provided the basis for LaRouche's later indictment.

LaRouche is joined on the legal papers by co-defendants William Wertz and Edward Spannaus. Their new legal effort seeks to “vacate, set aside or correct” their sentences, or, “in the alternative to at least grant them a new trial” based upon the fact that the prosecution:

- Suppressed evidence of illegal concerted activity by the Federal Elections Commission, the Internal Revenue Service, the Anti-Defamation League of B'nai B'rith (ADL), and others to destroy the ability to borrow money and repay loans;
- Suppressed evidence of covert actions undertaken pursuant to Executive Order 12333, or otherwise;
- Suppressed evidence that the Loudoun County, Va. Sheriff's Department and the ADL engaged in direct operations damaging defendants' finances from the fall of 1985 forward;
- Suppressed evidence that Virginia State Police agent Charles Bryant and others engaged in activities to prejudice lenders, biasing witness testimony at trial;
- Filed a motion *in limine* to exclude inquiry into and evidence about its concerted activity to destroy the ability to repay loans which it suppressed at trial;
- Concealed a document prepared

by FBI Case Agent Timothy Klund which stated that numerous sums received were most likely political contributions, directly contradicting the indictment itself and government witnesses;

- Concealed exculpatory information pertaining to the bias and false and misleading testimony of former LaRouche associates who were turned into government witnesses;
- Concealed that the testimony of two of these key witnesses was influenced by promises, rewards, and inducements by the prosecution.

Additionally, new evidence reveals that the convictions were obtained as a result of an unconstitutionally selected and biased jury. The defense has learned that the jury foreman, one Buster Horton, is a member of an elite, interagency national security apparatus composed of approximately 100 specialists, including Oliver North, from various federal departments and agencies, including the Department of Justice, the FBI, and the CIA. This apparatus, popularly known as “the secret government,” has as its primary function to ensure the “continuity of government” during any federal emergency. This interagency apparatus is coordinated under the aegis of the Federal Emergency Management Agency (FEMA), which is responsible to the National Security Council.

How It All Began

The legal motion argues that the targeting of the LaRouche political movement began no later than 1982. At that time former U.S. Secretary of State Henry Kissinger wrote two letters to then-FBI Director William Webster raising questions of funding and control by a foreign intelligence service. Kissinger's efforts were supplemented by his attorney, William D. Rogers. Kissinger's complaints were raised shortly thereafter at a Jan. 12, 1983 meeting of the President's Foreign Intelligence Advisory Board (PFIAB).

The disputes between LaRouche, Kissinger, and others in and out of government allied with Kissinger were over policy questions, including Third World development and inter-

national monetary reform. Many of the disputes and conflicts dated from the 1970's. As an example, recently declassified government documents, most explicitly a “National Security Study Memorandum 200” (NSSM 200, Dec. 10, 1974), reveal the targeting of thirteen Third World nations for radical depopulation programs, while disparaging the efforts of the movement for a New World Economic Order for encouraging economic optimism and resistance to depopulation plans. Kissinger was National Security Adviser at that time, and LaRouche was a leading opponent of these plans. The scope of the federal investigations, including Executive Order 12333, and the activities undertaken therein are not known. Until recently discovered evidence revealed a LaRouche file under Executive Order 12333, the government had denied its existence. The file has still not been revealed, despite demands on President Bush for its release.

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'Peace, Development' Coalition Formed in Berlin

More than three hundred people from 31 nations came together in Berlin at the invitation of the Schiller Institute on Nov. 22-23, 1991, to discuss reconstructing the world economy in the wake of the collapse of communism and the crisis of the Anglo-American financial system.

Speakers at the conference included: **Dr. Kofi N. Awoonor**, chairman, Group of 77; **Hike Babookhanyan**, Union of Constitutional Rights of Armenia; **Dr. Eva-Maria Barki**, board member, Austrian-Croatian Society, Austria; **Prof. Dr. V. Beletsky**, director, Sovint-ercontact, Russia; **Carlos Calderon Carvajal**, Member of Congress, Peru; **Sandor Cseh**, Member of Parliament, Hungary; **Prof. Dr. A Filipenko**, University of Kiev, Ukraine; **Ni Yuxian**, Chinese Liberal Democratic Party, U.S.A.; **Dr. Marian Gruchelski**, Farmer Solidarity, Poland; **Theo W. Mitchell**, State Senator, South Carolina, U.S.A.; **Guntis Vilcans**, Citizens' Congress of Latvia; and **Dr. T. Nikolov**, Institute of World Economy, Bulgaria. What follows are excerpts of an address by U.S. presidential candidate Lyndon LaRouche, delivered by audiotape to the conference.

Future generations will look back upon our 1970's and 1980's, upon the cult fads of Thatcherism, free trade, deregulation, and lunatic forms of ecologism, with the same abhorrence which history has already shown toward the tulip mania of the Netherlands' past or the pathetic mobs of flagellants of fourteenth-century Europe.

Fortunately, as in those earlier cases, there is a limit beyond which history will no longer tolerate such mass lunacies as these. We appear to have come near to such a breaking point inside the United States. The recent senatorial election in the state of Pennsylvania is one among a number of important recent positive signals which should encourage us. That Anglo-American global financial and monetary system which was established by the Versailles treaties, and which was reaffirmed by the forms of the close of World War II, is now bankrupt, and is in the process of disintegrating.

This collapse of that system not only demands radical reforms in economic institutions; the self-discredit-

ing of the system defines the historic moment of political opportunity to establish long-needed reforms.

How the Crisis Was Created

To define this bankruptcy of the United States, of the Anglo-Americans, as briefly as possible, trace the principal turning points of the process since the 1957-58 Eisenhower recession inside the United States. That 1957 recession was the inevitable and relatively disastrous result of the policies which were introduced in 1954 under the influence of economic adviser and later ambassador to Germany, Arthur Burns.

Had there not been the recovery measures of the Kennedy administration, the monetary crises of 1968 and 1971 would have struck as early as the mid-1960's. It is important to note that 1963, the year of the November assassination of President John F. Kennedy, was also a period of some very critical tectonic and correlated changes inside Europe.

The coordinated emergence and kindred policies of Britain's Prime



Participants at the 1991 Berlin conference vote for a new "World Peace Through Development" coalition.

EIRNS/Chris Lewis

Minister Harold Wilson and of the United States' Johnson administration marked the beginnings of that Anglo-American bankruptcy erupting so conspicuously today. Wilson and Johnson introduced a turn away from the earlier emphasis upon capital-intensive investment in global scientific and technological progress, into the corrosive decay of what is fairly described as post-industrial utopianism.

By 1970, the inertia of growth left over from the Kennedy recovery measures was spent. In terms of net depreciation of capital improvements of basic economic infrastructure, there has been an accelerating net erosion and collapse of the U.S. physical economy since 1970-71.

Until the successive financial and related crises of 1987, 1989, and 1991, the full impact of this cumulative U.S. economic contraction was masked, not merely by increasingly fraudulent official economic statistics, but also by a credulous, widespread misevaluation of the growth of incomes and relative employment in non-productive categories of administration, services, and parasitical financial speculation.

Also, the fuller impact of the contraction upon the U.S. economy internally was masked by the ability of the United States as a superpower to loot offsetting concessions as tribute from not only developing nations, but even its industrialized allies in Japan and Western Europe.

The 1967-72 stepwise termination of the Bretton Woods gold reserve agreements, and the substitution of a floating exchange rate system, brought to an end the possibility of the international long-term borrowing costs below the rates of achievable yields in long-term productive investments.

This was greatly aggravated by the so-called Kissinger petroleum price hoax of 1972-74. The continuation of the 1971-72 and 1973-74 events doomed the economies of the developing sector as a whole, for as long as these cruelly absurd monetary policies remain in effect.

This collapsing of the developing sector's potential for technologically progressive capital-intensive investments and increased productive pow-

ers of labor, defined a savage contraction of the world's economy, in *per capita* and in per square-kilometer terms.

The U.S. deregulation of banking and transportation during the 1978-79 period, and Federal Reserve chairman Volcker's October 1979 introduction of what he had identified as controlled disintegration of the economy, sent the United States economy into the steep recession of 1980-82. Despite the foolishly much-admired 1983-86 expansion of non-productive employment in incomes, the physical economy of the United States

has continued a downward slide, without interruption, from the period 1971-82 up to the present day.

What Must Be Done

To organize a recovery from the bottomless global economic depression which is now in progress, we must move promptly to the following effect:

1) The center of the economic recovery will be the scrapping of the lunacy of Thatcherite shock therapy and related delusions of the so-called free trade cult of fools such as Harvard University's notorious Prof. Jeffrey Sachs.

2) We must adopt as our initial general policy of economic recovery, the policy of the creation of state credit as a monopoly by sovereign national republics, credit used chiefly for the productive union of idled productive capacity with idled sections of the labor force.

3) This use of a monopoly of state credit among cooperating sovereign republics shall be chiefly for a massive development of national and international basic economic infrastructure and for promotion of capital-intensive modes of technological-progress investment in production and physical distribution of agricultural, mining, and manufacturing products.

The objective is to increase the productive powers and output of labor



Berlin, Nov. 10, 1988: Three years earlier, Lyndon LaRouche had called for the immediate unification of Germany and development of Eastern Europe.

per capita and per square kilometer throughout the regions of northern Eurasia and the world as a whole.

4) It must be stressed, that the sovereign state's monopoly of power to emit legal tender is a central feature of Article I of the 1787-89 federal Constitution of the United States, as this monopoly is clarified by the relevant writings of United States Treasury Secretary Alexander Hamilton, one of the co-drafters of the U.S. Constitution.

5) We must extend these initial measures of economic recovery to establish a new, just, global economic order, an economic community of common principle among members of a global community of what are each perfectly sovereign nation-state republics. This new order, this new, just, world economic order, shall replace the Versailles System, and shall replace such amended features of the Versailles System, as the Bretton Woods monetary and financial institutions.

6) The implementation of such a just, global economic order must, as a practical matter, orbit around the center of the rapid development of a northern Eurasian railway axis, this axis to be the generator of that supply of high-technology capital goods required so urgently for the equitable transformation of the southerly portions of this planet.

U.N. Ambassador Dr. Kofi Nyidevu Awoonor

Dr. Kofi Nyidevu Awoonor is the Ambassador and Permanent Representative of Ghana to the United Nations. He was until recently chairman of the Group of 77, which represents the more than one hundred developing sector nations. The interview was conducted in New York on Oct. 22, 1991 by Warren A.J. Hamerman and Dana Scanlon.

Fidelio: George Bush came to the U.N. General Assembly and gave a very imposing speech of his version of a *Pax Universalis*, which would take the form of the hegemony of America and its allies over the entire world economy. How do you see that overall strategic situation?

Dr. Awoonor: I want to return to the concept of the *Pax Universalis*, first. I think there is something rather simple-minded about it. And the simple-mindedness derives from the self-perception of big-powerism, the arsenals of power, and of course this is a post-Gulf war syndrome. It is also helped along by the fact that the Soviet Union and its empire had collapsed.

A uniform, or unilateral world, which is based on a single perception of reality and which has got ingredients such as the free market—well, to many of us, the free market is largely predatory in many instances. That free market concept was constructed over a long history of exploitation of other people. The British Empire was not set up because the coconut groves of the west coast of Africa were greener than any other trees anywhere else! It was predicated on exploitation. But if that is the principle with which we are entering into the so-called New World Order, then we are going to have problems.

Fidelio: In the last few years, a series of documents written by Dr. Henry Kissinger at the U.S. National Security Council—when George Bush was



Ambassador Dr. Kofi Nyidevu Awoonor (left) presents his credentials to U.N. Secretary-General Javier Perez de Cuellar.

head of the CIA—has been declassified. And in these documents, the U.S. National Security Council said that it was in the strategic interest of the United States to drastically reduce the population of the developing sector, and to prevent any organizing for a new, just world economic order. These documents target thirteen key nations in the developing sector, for what has been called genocide or Malthusian depopulation. Have you seen these documents?

Dr. Awoonor: I have seen these documents, and I think they are authentic documents. And I'm not surprised that this was the thinking which was coming out of a certain kind of political mentality. Having said that, of course, one has to resist this over-simplification of the problems of the world.

We talk in the United Nations—at least we *talk*—about an interdependent world, where each nation is linked with the others. And of course, we are all part of the same species, *Homo sapiens*. Now we say, on the question of population alone, for example, there is no reason why popula-

tion control by itself will answer the question of poverty and underdevelopment. It is the other way around. If you are able to provide the developing countries the tools for development, afford them the opportunity to be able to earn their way in an equitable marketplace of the world—and I'm stressing the word equitable—they will, given education, given environmental work, they will reduce their populations. They will *not* reduce their populations as a result of any pressure from any sector that says, "We are afraid of being swamped, and so therefore let us impose a Malthusian solution."

Having said that, we are aware of the distribution of resources in the world. The developed countries of the world still have control over the vast remnants of resources that the world has. Yet, we are calling for a balance in the consumption of these resources. And therefore, a Malthusian effort to control population will be seen by us, as an attempt to reduce the populations of our countries in order to have greater access to the resources on which we sit.

Fidelio: In his speech to the U.N. General Assembly, the foreign minister of Ghana quoted Pope John Paul II's encyclical *Centesimus Annus*, which was issued earlier this year. Your foreign minister said that the encyclical raised the obvious necessary solution, that development is the new name for peace, quoting Pope Paul VI. I would like to ask you to comment on this.

Dr. Awoonor: Yes, indeed. Our foreign minister underscored that point. And I think it's a point that we are also insisting upon within the framework of the United Nations. We are saying: If you talk about population, we must deal with development; if you talk about environment, we must deal with development; if you talk about any element you must talk about development.

Fidelio: January began the United Nations' Fourth Development Decade. The Schiller Institute has circulated at the U.N. a proposal for a True Fourth Development Decade, which was prepared under the direction of the American economist Lyndon LaRouche. This proposal calls for going outside the collapsed Bretton Woods system, to create a true fourth development decade. I would like your comments on this proposal.

Dr. Awoonor: I think it is a brilliant document of immense originality. It takes a lot of courage for anybody from the developed part of the world, the advanced part of the world, to see the problem in that global perspective. The document spells out the technical possibilities of providing the infrastructure with which many, many parts of the world, which are now racked with hunger and poverty, can lift themselves up. When they say you must lift yourself up by your bootstraps, it's like providing the boots first. This system of doing that technical work, the development of water, and such elements that are part of the program, sounds to me as one of the most innovative and original ideas that I've seen.

I have talked in that direction when we were dealing with the question of humanitarian relief. When we talked about humanitarian relief, I have said,

we must think about development also. And I gave as an example, which coincides with what the Schiller document and the LaRouche document ["The Oasis Plan for the Middle East"] also gives, the example of the cyclical drought in the Sahel, or in the Horn of Africa. The problem is of water. We wait every year, and when the drought comes, we rush, airplanes come, dropping food around, and quickly they go back. Next year, the same drought will occur. Why don't we sit down and say: "Let us develop a water system for this area, which once and for all gives the people the capacity to grow their own food."

Fidelio: Mr. LaRouche was found to be an irritant, and, as I think you know, he has been in jail now for almost three years. Have you had a chance to look at how his trial was conducted? Do you find it shocking that in the land of liberty, the United States, this kind of procedure would have been carried out?

Dr. Awoonor: I have not yet gone into the details of that trial. But I could see how a man who is promoting the kind of program that he is promoting, would be seen as a thorn in the flesh. He would be a very uncomfortable person to the powers that be, and this is not the first time in the history of the world that those who really are coming with new messages, new prophets, are regularly crucified!

I tell you, someone once said, if Christ walked into any of these great advanced democracies of the world, they would lock him up! Because he would be a troublemaker.

Fidelio: Overall, worldwide, we're looking at foreign debt in the trillions of dollars. Much of this debt is illegitimate, it is the result of usury, of high interest rates, of repeated devaluation of currencies, and so forth, making it impossible to repay. What would the Group of 77 like to see happen in this respect, both in terms of the debt stock and the debt service?

Dr. Awoonor: We had made a statement in Geneva on behalf of the Group of 77, where we were considering the question of the collapse of East-

ern Europe, of the Soviet empire, and its impact upon the global system. And I made a point, on behalf of the Group, that the kind of concessionary arrangement that was made by the United States, and a number of other countries, with Poland, must be a model with which we can begin: which is a generous forgiveness of debt. Almost seventy percent of Poland's debt had been written off. And when we raised this point, we are told: Poland is a special case.

We don't know why Poland is a special case. Why is Haiti not a special case? Why is Argentina not a special case? Why is Brazil not a special case? Why is Nigeria not a special case? Why is Ghana not a special case? Finally, what one wants to say is that the debt is *unpayable*. We cannot pay that debt, because it is a cycle of dependence, a cycle of poverty that has been constructed, within which we are whirling and whirling. The center cannot hold.

In 1988, the IMF took one billion dollars more out of Africa than it put in. Tell me, what is that? You use the term usury. What else is that? It is usury of the most horrendous type. But we are saying that the world, beginning with those who claim that they control it, must sit down and analyze the collective burden of debt on each country, and by a stroke of the pen, cancel all debts.

Fidelio: A worldwide debt moratorium could be part and parcel of creating a new post-Bretton Woods economic system. This is an aspect of the True Fourth Development Decade proposal.

Dr. Awoonor: Absolutely. I agree with you entirely, that we have got to begin with debt, because that is already on the table. A year ago, we in Ghana used sixty percent of all our foreign exchange earnings, just to service our debt. Sixty percent. So we have forty percent left, with which we have got to build schools, which the British never built when they were there for over a hundred years. We have to build clinics, which they didn't build. We have to make provisions of water for our villages and towns. How do we do

that, if all we work for goes back to the same people who had exploited us over the centuries?

Fidelio: Do you have any thoughts that you would like conveyed to the readership of *Fidelio* that we've not covered up until this point?

Dr. Awoonor: I would like to address what I consider the post-Gulf War and the post-Cold War period: We are seeing some ingredients of that so-called New World Order, as being no different from the old world order. In fact, we are seeing other things coming up—when we had the Soviet empire, at least there was what one commentator called a balance of terror, and so therefore, arrogance of power was slightly more muted. We are seeing, as one person used the word, a unipolar world, in which there is only one power and its way of doing things, its way of perceiving reality, its ideology. They talk as if communism is the only ideology that we have. Capitalism is also an ideology; and that capitalist ideology is based on concepts of democracy, liberal democracy which is individualism, and its attendant greed-machine, based on the so-called free market, which is another word for “get the best of your friend, sharp dealing, cut all the corners,” which also reveals a lack of compassion for our common humankind.

And we are saying: if that is the world that we are constructing, then we are in for trouble. And I want to say that we in the developing countries, who form the majority of the human population of this planet; we who are the ones who are poor, malnourished, without education, without adequate shelter; who are the ones who are ill with diseases both old and new, who lack clinics and hospitals: we are supposed to earn our way in this marketplace, which, even though it is called free, we know is not free.

We are going to be insisting—we are going to be here, we are going to be making as much noise as we can make, and nobody can lecture us—we will put our needs on the agenda, and we will insist that the world look at these needs.



Čavro Šifrar

Maestro Pavle Dešpalj

Croatian Conductor Pavle Dešpalj

Pavle Dešpalj was born in the 1930's into a musical family. After completing his formal education in Zagreb at the Musical Academy under professor Šulak, he conducted several chamber and symphony orchestras in Zagreb and Belgrade. In 1967 he came to the United States, where he became the permanent conductor and artistic director of the Florida Symphony Orchestra and of the opera in Orlando, Florida. Later he became permanent guest conductor of the Chicago Festival in Grand Park, and in 1975, at the invitation of Leontyne Price, he conducted the Pittsburgh Symphony Orchestra. Returning to Zagreb in 1980, Dešpalj became chief conductor of the Zagreb Philharmonic Orchestra, whose principal conductor emeritus he is today.

This interview was conducted for Fidelio by Hartmut Cramer on January 7, 1992.

Fidelio: Finally, some important political forces have recognized Croatia. What do you think is the most important thing to be done right now?

Dešpalj: The main thing is recognition. We were trying to get it for quite some while. Our greatest allies are Chancellor Kohl of Germany and his Foreign Minister Genscher, and the Pope in Rome, of course. These three friends of ours have always lifted up our spirits.

Fidelio: You know that classical art, especially music, has played a very crucial role in the various revolutions of the last years; beginning in China, where the students played Beethoven's and Schiller's "Ode to Joy," then all over Eastern Europe. Did you do similar things in Croatia?

Dešpalj: Yes, we did. To think of Beethoven's Ninth is a very proper thing to do in such a situation, and Zagreb's Philharmonic Orchestra performed this great symphony right at the beginning of last season. But we also played Beethoven's Eroica under my direction in the city of Osijek.

Fidelio: What other music did you

FILMS

JFK: An Indictment of America's 'Secret Government'

perform in your concerts?

Dešpalj: My sister, my brother, and I, the three of us, played the double concerto by Brahms for violin, cello and orchestra, and then I conducted Dvorak's Ninth Symphony ("From the New World"). In Ljubljana, the capital of Slovenia we performed Mozart's great C-minor Mass, and with that we gave a benefit concert in Ljubljana for Zagreb. That was the first time I performed this work, and I immediately and completely fell in love with it. It is such great music: consider just the beginning—it's fantastic—and when I think about the *Et incarnatus est*, I have a hard time suppressing my tears, it is such a divine music.

On Christmas day I conducted parts of this Mass as part of the pontifical mass in our cathedral in Zagreb, which our Cardinal Kuharic held. You know, before that, we very seldom played in church, and it was unheard of to participate in the religious ceremony; since we have had democracy in Croatia, we started to perform music in church even for the ceremonial services.

Fidelio: Please explain this more. The communists didn't let you perform music in churches?

Dešpalj: You see, during the communist regime we did occasionally give concerts in churches, but without the religious connotations. We were not allowed to perform music during the mass; that was forbidden.

Now, this has changed. Now, religion is again a free choice; everybody who wants to can go to church. Before, it was not completely forbidden to go to church, but those people who dared to do that were considered to be very strange, abnormal, and suspicious by the political authorities.

Fidelio: What cultural message does your orchestra want to give to the people of other countries?

Dešpalj: We would like to show that we deeply care about culture, that we are part of the world's culture and that we belong to western civilization and strongly believe in its moral values.

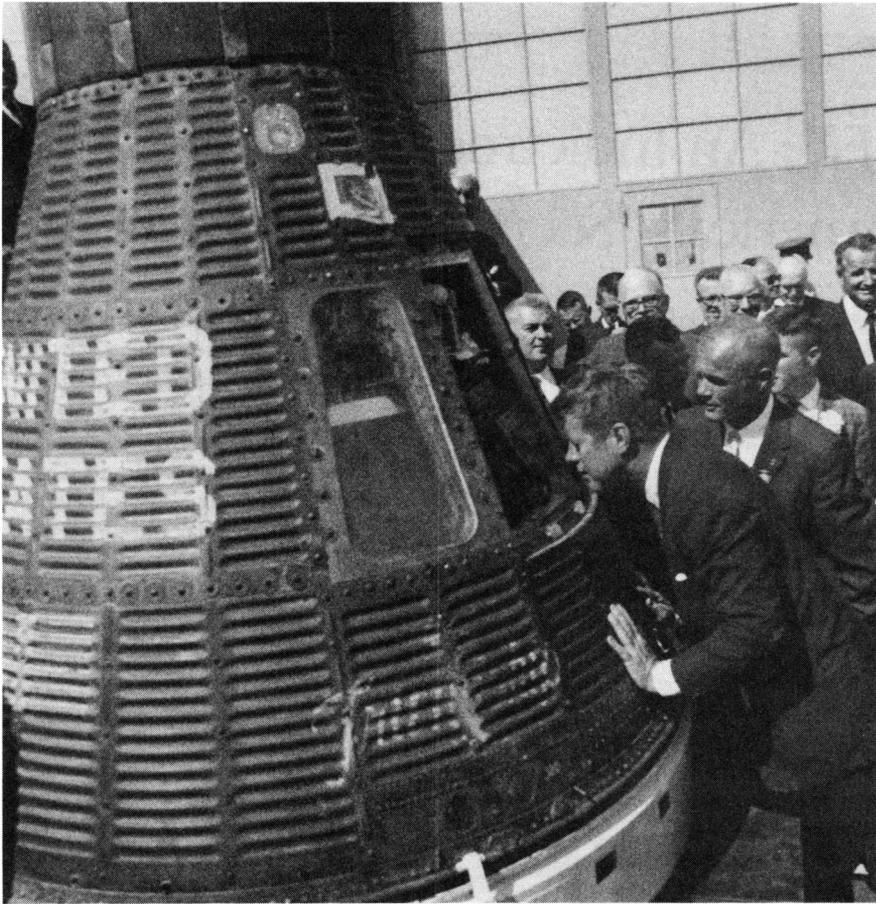
President Kennedy has been shot!" That terrifying report, broadcast around the world on Nov. 22, 1963, still rings in the ears of many today. Young and old of all countries sat in front of their radios and television sets in a state of shock. What had happened? Why had it happened? It had only been in June of that fateful year, that John F. Kennedy had visited Berlin, to deliver his now-famous declaration, two years after the building of the Berlin Wall, in order to guarantee the security of the divided city: "*Ich bin ein Berliner!*"

The movie *JFK*, began to unleash a huge controversy even before it started showing in movie theaters. The basic thesis of its director, Oliver Stone, is that Kennedy's assassination was a coup d'état by the CIA/FBI and parts of the military-industrial complex, and that the cover-up perpetrated by the Warren Commission was merely one more step in the formation of a "parallel government" in Washington and a turning of the United States toward fascism. This thesis has struck a raw nerve in the U.S. population and within the Establishment.



June 6, 1963: President Kennedy speaks at the Berlin Wall. "*Ich bin ein Berliner!*"

John F. Kennedy Library



John F. Kennedy Library

Inspecting the space program: J.F.K. with astronaut John Glenn, Cape Canaveral, Feb. 2, 1962.

As a German who viewed the film in a theater in a small midwestern American town, I was struck by the exciting impact on the viewers. After a long exposition by New Orleans District Attorney Jim Garrison (played by Kevin Costner), many sequences were played of the original footage of the shooting filmed by the amateur photographer Abraham Zapruder. One lives through those anguished moments, as a series of four shots, lasting five to six seconds, ends with the final shot which hurls the President's head backward with tremendous force. The audience in the movie theater groans aloud. At the same time, the question is raised again in everyone's mind: how could Lee Harvey Oswald possibly have been the sole gunman, since the final shot must have come from an entirely different direction?

The significance of this film is that it highlights the contradictions which have emerged in the various investiga-

tions of the Kennedy assassination. What is of interest, however, is not the film's specific conclusions, but rather the fact that it raises once again the fundamental questions about what actually led to the killing of Kennedy, the attempts to sabotage the investigation, and the subsequent killings of Robert Kennedy, Martin Luther King, and Malcolm X.

The filmscript is largely based on a book by Garrison, which he published in 1988 under the title *On the Trail of the Assassin*. Supporting material also came from the 1989 study by Jim Marrs, *Crossfire: The Plot That Killed Kennedy*, in which the author presents all of the most significant theories about the assassination. The chapter titled "The Garrison Investigation," is in fact substantially based on a book-length study issued in 1978 at the behest of Lyndon LaRouche, entitled *Dope, Inc.*, which is acknowledged in Marrs' footnotes.

What were the great issues for whose sake Kennedy had to be gotten out of the picture, to be followed later by the assassination of Martin Luther King, and still later, by the jailing of Lyndon LaRouche?

Why Kennedy Was Killed

In John F. Kennedy's inaugural address on Jan. 20, 1961, the newly elected—Catholic—President of the United States gave a foretaste of the political transformation which in 1963, when Kennedy wanted to put these words more energetically into action, made him into the deadly enemy of the oligarchical Establishment. Kennedy spoke of his desire for peaceful cooperation with the Soviet Union, of the yearning for scientific progress and the development of the underdeveloped world:

"Let both sides explore what problems unite us instead of belaboring those problems which divide us.

"Let both sides, for the first time, formulate serious and precise proposals for the inspection and control of arms, and bring the absolute power to destroy other nations under the absolute control of all nations.

"Let both sides seek to invoke the wonders of science instead of its terrors. Together let us explore the stars, conquer the deserts, eradicate disease, tap the ocean depths, and encourage the arts and commerce.

"Let both sides unite to heed in all corners of the earth the command of Isaiah to 'undo the heavy burdens . . . [and] let the oppressed go free.'"

This is the spirit of the "New Frontier," a spirit which, once again today, amid the brutality of the depression, is being reawakened through recollecting the Kennedy assassination.

These were also the years of the great reconciliation between France and Germany, when de Gaulle spoke of his great vision of a "Europe of the Fatherlands" (and a turning away from Anglo-American domination), thus making himself a target of the same assassination circles who felled Kennedy—as the Garrison investigation demonstrated.

De Gaulle exhibited this same way of thinking when he gave words of



John F. Kennedy Library

Meeting Peace Corps volunteers, Aug. 9, 1962.

encouragement to young Germans during his 1962 visit: "I wish you well, young Germans, you children of a great people. Yes, of a great people, which now and then, in the course of history, has made great mistakes. But a people which has also sent throughout the world fruitful intellectual, scientific, artistic, and philosophical waves, and has enriched the world with countless products of its imagination, its technology, and its labor."

It was the year in which Paul VI was chosen as the new Pope during the Vatican Council—a Pope who later in 1967 dedicated the encyclical *Populorum Progressio* to humanity's great task of the development of all peoples and the eradication of hunger and poverty.

Nineteen sixty-three was also the year when Martin Luther King gave his famous "I have a dream" speech before over 200,000 civil rights demonstrators, and demanded justice for America's oppressed African-Americans.

Kennedy's Enemies Are LaRouche's

During 1982-83, Lyndon LaRouche—with the full knowledge of the Reagan

White House—launched an initiative for peace and joint economic development with the Soviet Union. At the same time, concrete agreements were being arrived at with the President of Mexico on "defusing the debt bomb." In 1984, LaRouche published a draft for an agreement between the Soviet Union and the United States which, although much more comprehensive than what Kennedy had formulated in his inaugural speech, similarly aimed at world economic development.

In this draft agreement, LaRouche wrote: "The most crucial feature of present implementation of such a policy of durable peace is a profound change in the monetary, economic, and political relations between the dominant powers and those relatively subordinated nations often classed as 'developing nations.' Unless the inequities lingering in the aftermath of modern colonialism are progressively remedied, there can be no durable peace on this planet."

That was the core concept of the policy against which LaRouche's enemies, including Henry Kissinger and company, launched a witchhunt which led to LaRouche's incarceration in 1989.

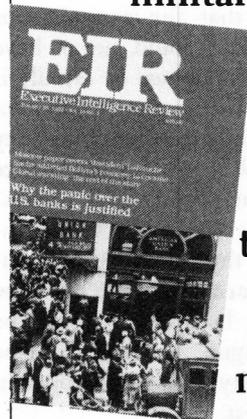
Oliver Stone's film, with its frontal attack against the "secret, shadow government" which was responsible for the murder of Kennedy, thus serves as a searchlight for revealing today's "secret government."

Even though the film does not report on the great issues confronting the world at that time—with the exception of the Vietnam War, the role of the "military-industrial complex," and the evil machinations of the CIA/FBI apparatus—something profound has been awakened by *JFK*. This is particularly the case for younger people, especially those allied with the democratic movements in Europe, Asia, and the Americas, who are up in arms against this "apparatus."

The demand for justice, for clearing up the traumatic question of why the majority of Americans were deliberately deceived following Kennedy's assassination, makes *JFK* a potential catalyst for dramatic cultural shifts in the United States.

—Anno Hellenbroich

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Mexico's Great Era of City Building

Mexico: Splendors of Thirty Centuries," was on view in 1991 at New York's Metropolitan Museum, the San Antonio Museum of Art in Texas, and the Los Angeles County Museum of Art in California. This gargantuan show (and the beautiful catalogue that accompanied it), was in three parts: the indigenous art of Mexico before the arrival of the Europeans; the works of the new civilization that arose after Columbus and the Conquest; and the art of Mexico after Independence in the last century.

What made this exhibit worthwhile was its middle section. It brought together works of art totally unfamiliar to most citizens of the United States, from the viceregal period of the early sixteenth century to the early nineteenth century, and demonstrated the true character of the evangelization of Mexico.

The Fall of the Evil Aztec Empire

All informed writers on the Conquest of Mexico, even the most violently pro-Aztec, admit that the conquistador Hernando Cortés could never have completed the Conquest so rapidly if the non-Aztec Indian peoples had not joined the Spanish armies when they arrived in 1519, happy for the chance to throw off the brutal Aztec oppression. After the Conquest was completed in 1521, the struggle to inaugurate a humanitarian policy in the New World against both the evils of the indigenous pagan society, and the greed and cruelty of many Europeans, began in earnest.

The Spanish Crown promulgated laws against slavery and usury, and tried to curb the abuses of Spanish civilians, the so-called *encomenderos*, against the native population. Encouraged by Cortés, Charles V sent mendicant orders, the Franciscans in the beginning, followed by Dominicans and

Augustinians, to evangelize.

The task would have been daunting, even without the opposition of those Spaniards who sought exploitation of the New World's riches above all. While the Aztecs were the most bestial of the Mesoamerican societies, all of those societies practiced human sacrifice, and all were structured around religious ideologies which viewed history as cyclical. They utterly lacked the notions of the necessity of progress, and of the sovereignty of the individual.

Three Heros of Christian Humanism

During the 1530's, three men came to power whose impact on Mexico is of world-historical significance: **Bishop Fray Juan de Zumárraga, Viceroy Antonio de Mendoza, and Judge Vasco de Quiroga.** These men shared a vision of implementing the ideals of Renais-

sance philosophy in the New World. They were prepared to put to the test the premise that every human individual is created in the living image of God.

Several objects in the exhibit were directly linked to these three men. These included an embroidered velvet lapcloth of about 1539, made for Bishop Zumárraga (cat. 118); and a magnificent Crucified Christ from Tlaxala, made of cornstalk paste (cat. 121), a material taken over from pre-Hispanic idol-making and used for Christian sculpture at the impetus of Vasco de Quiroga, the first bishop of Michoacán.

As to Mendoza, it was under his vice-regency that Pedro de Gante's convent school of San José de los Naturales in Mexico City produced one of the truly amazing objects on display, a feather-mosaic of "The Mass of St. Gregory" (cat. 119) created in Mexico



Guajuanato, one of Mexico's beautiful colonial cities, constructed according to the ideals of the Italian Renaissance by Antonio de Mendoza, first Viceroy of Mexico.

City in 1539 and sent as a gift to Pope Paul III (Farnese).

The painting was done in a technique that did not exist in Europe, although the style reflects the compositional and figural skills of European art taught by Gante to indigenous craftsmen. Feather pictures (*amantecayotl*) were the most prized art form of the pre-Hispanic world, where aviaries were kept for purpose of producing the colored feathers.

The Indians under the care of the Franciscans were particularly grateful to the Pope, because it was Paul III who had issued a bull in 1537 proclaiming the rationality of the Indians and the right of the mendicant orders to administer the sacraments to them. As the catalogue entry reports, "In the early years of evangelism in New Spain, some clergy thought the Indians were unfit to receive the sacraments—they were considered incapable of reason—and believed it was unlawful to administer such rites to them." The Pope's historic decision, vindicating the efforts of Zumárraga, Mendoza, and Vasco de Quiroga, was announced in New Spain in 1538-39.

Everything that was accomplished for the good in Mexico pivoted around this idea that the Indian was equal to the European as a child of God, capable of reason, and capable of being educated to realize even projects that were unrealizable on the old continent.

Building Alberti's Ideal Cities

According to the Mexican scholar Guillermo Tovar de Teresa (who is cited in the catalogue by the American researcher Donna Pierce), Mendoza, the first viceroy of Mexico (1535-50), realized the ideal city plan of the Renaissance in Mexico. He brought to Mexico the *Ten Books on Architecture* of the Florentine architect Leon Battista Alberti; Mendoza's heavily annotated copy of the treatise survives.

What might have been considered utopian in Europe became a reality, if only briefly, on the new continent. Viceroy Mendoza overlaid the grid plan which Alberti had developed, on the pre-existing, unfortified Indian cities, starting with Mexico City itself.

The streets were widened and regulated and oriented to optimum ventilation and sunlight, and the plaza was enlarged to a rectangle twice as long as wide, following Alberti's formula. As Pierce relates, "The unfortified town with its monumental plaza and wide straight streets became a source of amazement to European visitors, and was reproduced all over Latin America. Mendoza worked closely with the Franciscan and Augustinian friars to develop a so-called moderate plan for the religious establishments of Mexico, probably also based on the Renaissance formulas of Alberti."

The "fortress-convent" structures usually included a single-nave church, a convent, and an atrium, which dominated the entire surrounding landscape. In these great monastic establishments, built as outposts of Christianity all over Mexico, where the Indians were educated and Christianized, what impresses as much as the beauty is the volume of construction and the degree to which the indigenous population participated in the work. At most, there were a few hundred friars, yet by 1540, Pierce writes, there were approximately fifty establishments, and twenty years later, almost one hundred. In fact, almost all of Mexico's cities today, were built in the first eighty years after the conquest.

How did it actually work? The few capable journeymen who crossed the Atlantic in the early sixteenth century "taught small groups of Indians, who then covered the territory in traveling teams," writes Jorge Alberto Manrique of the National Autonomous University of Mexico in the introduction to the catalogue section on Vicere-



Museo Nacional del Virreinato, Tepozotlán

Photo: Salvador Lutteroth; Juan José Medina; Jesús Sánchez Uribe for the Metropolitan Museum of Art

Archbishop Juan de Zumárraga's embroidered lapcloth, 1539. Zumárraga was an admirer of Erasmus who brought a master embroiderer to teach the craft to Indian converts.

gal Art. "On each project they instructed the local populace and supervised the work. This explains the recurrence of similar solutions in widely separated places, as well as the application of methods that required little specialization, such as the cylindrical columns of the cloisters, all with the same bases and capitals. It was a kind of assembly-line construction that answered the need for speed."

Clearly this effort did not represent the violent grafting of a foreign culture upon a native one, as charged by those who say there is nothing to celebrate on the Quincentenary of 1492. Rather it reflected a *higher cultural matrix*, more coherent with the laws of the universe than the genocidal Aztec society to which the native populations had been so brutally subjected. And thus, no matter how many flaws there may have been in the effort to export the Renaissance to the New World, and despite the undeniable cruelties committed by some very un-Christian Europeans who actually opposed the effort, the example and lesson stand for us today.

—Nora Hamerman

Naming the Names of the Citizens Above Suspicion

When the first edition of *Dope, Inc.* appeared in 1978, the book—commissioned by Lyndon LaRouche—spawned an international movement that “broke the political rules” and named the names of the “citizens above suspicion” behind the international narcotics traffic.

The book was an indictment of the “secret government” that has run the United States since the assassination of President John F. Kennedy. *Dope, Inc.* prophetically unearthed the buried story of “Permindex,” the corporate entity involved in the Kennedy murder: the same Permindex whose director, Clay Shaw, is the subject of today’s controversial film *JFK*.

It is also the story of the persecution of LaRouche and his associates, who threatened the *Dope, Inc.* directorate by exposing it at the top. Readers will see that the same forces behind the Kennedy murder are those which put LaRouche in prison.

Why? The answer begins to be found in the preface to the second edition of “*Dope, Inc.*,” which LaRouche wrote on April 10, 1986:

“Unless the hundreds of billions of dollars of the drug-traffickers are confiscated, and the guilty bankers and financial brokers are sent to prison, the United States and Western Europe are helpless. . . . As long as such creators of the money-laundering system . . . are allowed to exert influence over the policies over our own and allied governments, there is no serious ‘War on Drugs.’”

Legalized Drugs

This book forces the citizen to confront disturbing truths. It shows how “*Dope, Incorporated*” runs key institutions in the U.S., including 1600 Pennsylvania Avenue and the adjacent offices of the “Old Executive Office

Building,” former home of Lt. Col. Oliver North, and the “*Enterprise*” of gun- and drug-trafficking which he directed under the chain of command of then Vice-President George Bush.

The reader will see that under George Bush there has been a *de facto* legalization of drugs in America: the dollar value of the drug trade is doubling every five years (by 1996 it may reach \$1 trillion); marijuana has become the largest single U.S. cash crop; through the International Monetary Fund, the cocaine cartels have been given a *carte blanche* to open new “virgin markets” in the newly freed republics of Eastern Europe; and the U.S. military and intelligence agencies have become instruments for protecting the drug trade.

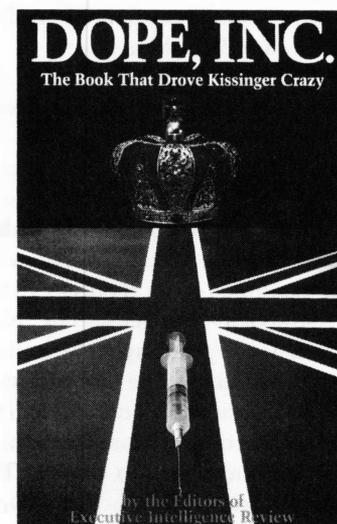
Events have proven that the “respectable” individuals named in *Dope, Inc.*, are the drug pushers they were made out to be in 1986:

* **George Schultz**, the Reagan Secretary of State for seven years, admitted (after he left office) that he “always” believed in drug legalization.

* **Henry Kissinger**, whose company, Kissinger Associates, Inc., was identified as a *de facto* “board of directors of the entity we call *Dope, Incorporated*,” has been exposed as an official and key mover of banks like BCCI and BNL, both under Congressional and criminal investigation for massive laundering of drug money and financing of international terrorism.

* **Lawrence Eagleburger**, Bush’s State Department thug, served on the board of the national drug-linked bank of communist Yugoslavia. Eagleburger (also on the board of Kissinger Associates) represented an interface between the “capitalist West” and “communist East in joint drug operations.”

* Latin American “notables,” such



Dope, Inc., The Book that Drove Henry Kissinger Crazy (Third Edition)

by the editors of EIR
Executive Intelligence Review,
Washington, D.C., 1992
750 pages, paperback, \$16.00.

as former Colombian President **Lopez Michelson** and Venezuelan banker **Gustavo Cisneros**, have been even more specifically tied to international dope.

* **Israeli government operatives** were uncovered as the trainers and suppliers of the narco-terrorists who murdered some of the finest, most dedicated leaders of Colombia.

Hope

One of the most powerful points of *Dope, Inc.* is that the authors make clear they have not—and will never—give up the war against drugs. But to stop the drug traffic, one must understand history and economics.

Two critical chapters, “The East India Company’s War Against China,” and “Britain’s Noble Experi-

ment," should be sufficient to bury the arguments of the "free trade" doctrine. The history of the dope trade is the history of the British East India Company and its spy/theoretician, Adam Smith. These chapters document that Smith, the father of "free trade," was the declared enemy of the founders of the American republic and the American System of economics.

One can see clearly the parallels between the British Empire's crushing of China in the nineteenth century to guarantee the British imperial right to push opium, and the neo-colonial wars against the Third World that are today executed by London and Washington.

At the end of 1987, Pope John Paul II, in his encyclical *On Social Concern*, related both free trade and communist collectivism to the "structures of sin" that degrade the dignity of human beings. Today, the communist empire of the Soviet Union has been toppled, replaced by independent republics. But the IMF, George Bush, and other voices of "world government," insist that these new republics submit to the "free trade" of Wall Street and the City of London, although there is not a leading bank or investment house in the U.S. or Great Britain not corrupted by drugs.

Dope, Inc. is addressed to those who want to stop drugs. It includes LaRouche's brilliantly simple 15-point program for international cooperation against drugs, using the most advanced satellite technology to identify the illicit narcotics crops, and relying upon the moral courage of citizens and government leaders.

Most profound is the dedication to "our friend Rodrigo Lara Bonilla, Colombian Justice Minister and selfless soldier in the war against drugs, murdered on April 30, 1984, on orders of the board of directors of Dope, Inc. . . . Did Rodrigo Lara Bonilla die in vain? . . . The answer will be determined in large part by whether you, the reader, join with us in crushing the leaders of Dope, Inc.—the citizens above suspicion."

—Michele Steinberg

Useful Exposé, Terrible Assumptions

Dinesh D'Souza does a very useful job in detailing how the United States has been completely polarized on issues of racism and sexism and how New Age ideologues have created a fascist environment on the nation's campuses, by dictating what attitudes are "politically correct."

However, although D'Souza's description of the problem is important, a warning must be given to the reader. The book itself has a specific point of view which is itself the very cause of the problem it depicts. Furthermore, demagogues will use these very real problems to whip up racist hysteria.

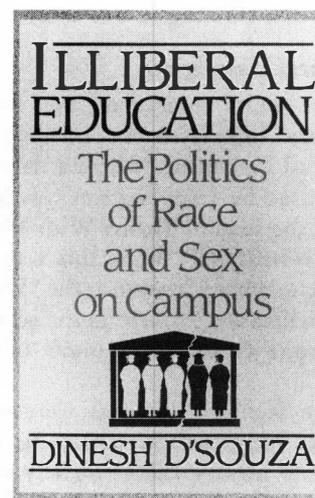
Preferential Admissions

D'Souza's first chapter details the problems associated with preferential admissions programs.

One example he gives particularly demonstrates the absurdity of such programs: "When Stephen Carter, a graduate of Stanford, applied to the Harvard Law School, he received a letter of rejection. Then a few days later, two Harvard officials telephoned him to apologize for their error. One explained 'We assumed from your record you were white.' The other noted that the school recently obtained information that 'should have been counted in your favor,' namely the fact that Carter was black. Carter recalled 'Naturally I was insulted by this. Stephen Carter, the white male, was not good enough for the Harvard Law School. Stephen Carter, the black male, not only was good enough, but rated agonized telephone calls urging him to attend. . . .'"

What is Education?

D'Souza is correct in criticizing the inherently unequal nature of any quota system based upon biology or culture. Yet, are today's competitive testing methods the true answer to this problem? D'Souza has no alternative, because his own concept of education is inadequate.



**Illiberal Education:
The Politics of Race and
Sex on Campus**
by Dinesh D'Souza
Free Press, New York, 1991
257 pages, hardback, \$19.95

Alan Bloom, who is D'Souza's mentor, wrote a very famous book in 1986 entitled *The Closing of the American Mind*, in which he argued for a radical reform of American higher education along what he claimed to be "classical" lines; but embedded in Bloom's contention that serious education begins only at the university level, is a devastating, hereditary flaw which is carried over in D'Souza's work.

An effective education policy does not start at the university level, but rather in the primary grades, with the intent to develop—by teaching—the innate genius in every student. The expectation that every student has a quality of genius which he can contribute to the progress of mankind, is the absolutely essential basis for framing a curriculum.

By treating education as if it began at the university level, these authors are implicitly jettisoning all the students now being destroyed in the primary schools. Since both Bloom and D'Souza reject the idea that genius is

an intelligible process which can be taught, they are left with the Aristotelian view that only a small group of "gifted" students have anything really worth contributing to our society.

Cultural Relativism

In the next section of the book, D'Souza highlights an incident at Stanford University, where a demonstration led by Jesse Jackson was held under the slogan "Down With Western Civilization." While this was referring to what is known as the "Western Civilization" course in the school, the slogan captured the intent of the rally.

The Stanford students were ultimately successful in changing the course to include more "socially relevant" authors. What this means in "politically correct" parlance, is that any author who is a "dead white European male," or D.W.E.M., cannot possibly understand modern times. Thus Shakespeare and Dante were replaced as required reading at Stanford by, among other things, a biography entitled *I, Rigoberta Menchu*, whose protagonist is an illiterate South American woman. Her story—dictated to a

French anthropologist who met her at a Marxist conference in Paris—details, first, her oppression as an Indian by whites; next, her oppression as a female in a macho society; and last, her liberation by rejecting male society.

While this book hardly qualifies to be part of a course in Western Civilization, D'Souza's problem is that he offers no cogent criticism of the previously existing curriculum, which gave equal weight to Nietzsche, Marx, and Freud—i.e., the progenitors of today's cultural relativism—and to, for example, Plato, St. Augustine, Kepler, or Shakespeare—upon whom any future, fundamental progress of our civilization depends. In a certain sense, the rejection by liberal academia of universal truth, *as a matter of principle*, has created the very cultural relativism about which D'Souza and others now complain. The students have held up a mirror to liberal academia, and they have seen the face of Dorian Gray.

'Politically Correct' Fascism

In the final section of the book, the horrifying consequences of this situation are exposed. The campuses are now tinderboxes of racial tension. Var-

ious professors who were dealing with controversial issues involving either race or sex, have been accused of "insensitivity." The charges against them were not that the material being presented was either racist or sexist, but that they were insensitive for presenting it.

In each of the cases detailed, not only did the university administration fail to defend the professor's rights, but, since the question of "insensitivity" was a matter of interpretation, the student's feeling of having been offended was taken as *prima facie* evidence of the teacher's guilt. The professors were admonished by the administration and ostracized by their fellow teachers; in some cases, they lost their tenure.

However, since the author and the academic liberals who have trained him lack a true concept of culture, they are unable to effectively combat such "politically correct" fascism. They fail to see that the only solution to these problems lies in reasserting the primacy of the classical humanist tradition embedded in Western, Christian civilization.

—Gerald M. Rose

The American Caligula

If the film *JFK* moved you to reflect about the evil that has taken over our country, then *George Bush: The Unauthorized Biography* will answer the questions raised, but left unanswered or only partly answered, by Oliver Stone's movie. For the first time, biographers of President Bush have told the truth about the man who should be known as the American Caligula, the man who embodies in his presidency the "secret government" that seized power in the United States after the assassination of John F. Kennedy.

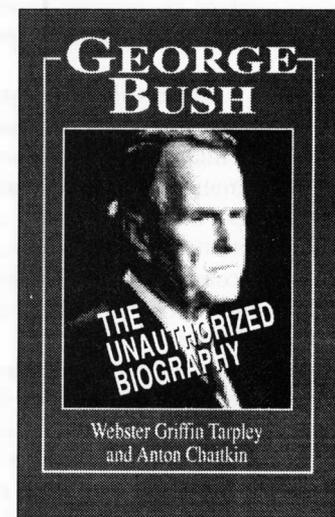
Who was Caligula? The introduction to this masterful piece of historical writing says the following:

"Because of lacunae in the manuscripts of Tacitus' work that have

come down to us, much of what we know of the rule of Caligula (Gaius Caesar, in power from 37 to 41 A.D.) derives from *The Lives of the Twelve Caesars*, a book by Gaius Suetonius Tranquillus. The character and administration of Caligula present some striking parallels with the subject of the present book.

"As a stoic, Caligula was a great admirer of his own 'immovable rigor.' His motto was 'Remember that I have the right to do anything to anybody.' He made no secret of his bloodthirsty vindictiveness. . . .

"Above all, Caligula was vindictive. After his death, two notebooks were found among his personal papers, one labeled 'The Sword' and the other labeled 'The Dagger.' These were lists



**George Bush:
The Unauthorized Biography**
by Webster Griffin Tarpley
and Anton Chaitkin
Executive Intelligence Review,
Washington, D.C., 1992
800+ pages, paperback, \$20.00

of the persons he had proscribed and liquidated, and were the forerunners of the enemies lists and discrediting committees of today. Suetonius frankly calls Caligula 'a monster,' and speculates on the psychological roots of his criminal disposition: 'I think I may attribute to mental weakness the existence of two exactly opposite faults in the same person, extreme assurance and, on the other hand, excessive timorousness.'

The authors of *George Bush: The Unauthorized Biography* declare that the study of Caligula and other depraved Roman emperors is "directly germane to our present task of following the career of a member of the senatorial class of the Anglo-American elite through the various stages of his formation and ultimate ascent to imperial power. The Roman Imperial model is germane because the American ruling elite of today is far closer to the world of Tiberius and Caligula than it is to the world of the American Revolution or the Constitutional Convention of 1789. The leitmotif of modern American presidential politics is unquestionably an imperial theme, most blatantly expressed by Bush in his slogan for 1990, 'The New World Order,' and for 1991, the *Pax Universalis*. The central project of the Bush presidency is the creation and consolidation of a single, universal Anglo-American (or Anglo-Saxon) empire very directly modeled on the various phases of the Roman Empire."

To prove this thesis, the authors trace the life and political career of George Bush, but not, as they say, according to the "red Studebaker school of history"—the myth of Bush's rags-to-riches rise to power. Proving all other available biographies to have been written as paeans to Bush's power, the *Unauthorized Biography* tells the proverbial "whole truth":

- How the Bush family made its money promoting Adolf Hitler and the Nazi war machine;
- Jupiter Island, Skull and Bones, and other bases of power;
- The real "war hero" story;
- Bush's long career as a backer of

eugenics and population reduction;

- Kissinger, China, and genocide in the Third World;
- Bush's Leveraged Buyout Mob, or the theft of a nation.

But the *Unauthorized Biography* does more than just expose George Bush. As the authors say, it is more than the "epiphany of a scoundrel." It is, indeed, the history of the *coup d'état* that took over the United States after the assassination of Kennedy. Bush, they show, is the inheritor of a position that was gained for him by the murder of millions. The U.S. presidency, which George Bush considers his birthright, is the crown jewel which the Anglo-American financial oligarchy has striven to control for decades. Bush himself is their perfect puppet.

You Must Act

The authors are associates of imprisoned dissident leader Lyndon LaRouche, the man whom Bush and Kissinger condemned to prison for life, in order to stop this story from coming out. Both are accomplished historians: Tarpley is the author of numerous studies on historical and strategic subjects, including a book on the 1978 Aldo Moro assassination; Chaitkin has authored scores of investigative articles, as well as the epic 1985 political history, *Treason in America: From Aaron Burr to Averell Harriman*.

Tarpley and Chaitkin have broken the code of silence which the Anglo-American financial oligarchs impose around their conduct of U.S. affairs. Using psychological insight and humor, as well as plain, old-fashioned research, they paint a picture of one of America's most power-hungry, vicious, and mentally unstable Presidents.

To do this, the authors dug the facts about Bush out of dingy, dusty records; spent countless hours in microfilm libraries; and crisscrossed the country to interview original sources. The resulting book is designed to goad you, the reader, into acting in turn. Knowing the truth about the President of the United States—that he sits wit-

tingly in the seat of power gained, for him and his masters, by an assassin's bullet—compels a moral person to act.

In this election year, your action can, indeed, change history. It was Lyndon LaRouche who first exposed the "Olympian" plot to turn the United States into an oligarchical looting ground for Kissinger's banking pals. Today's depression cries to the heavens that LaRouche was right!

Worldwide publication is in process during spring, 1992.

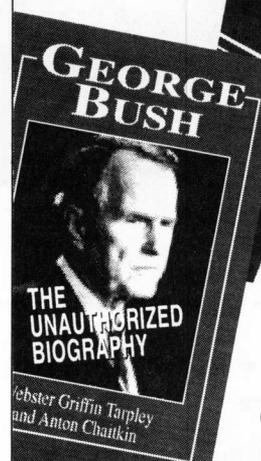
—Marianna Wertz

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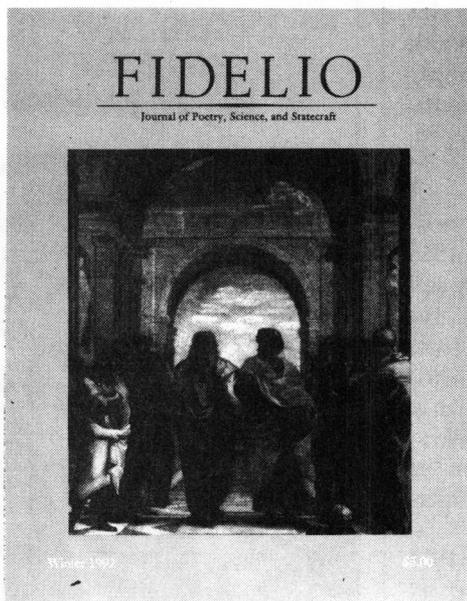
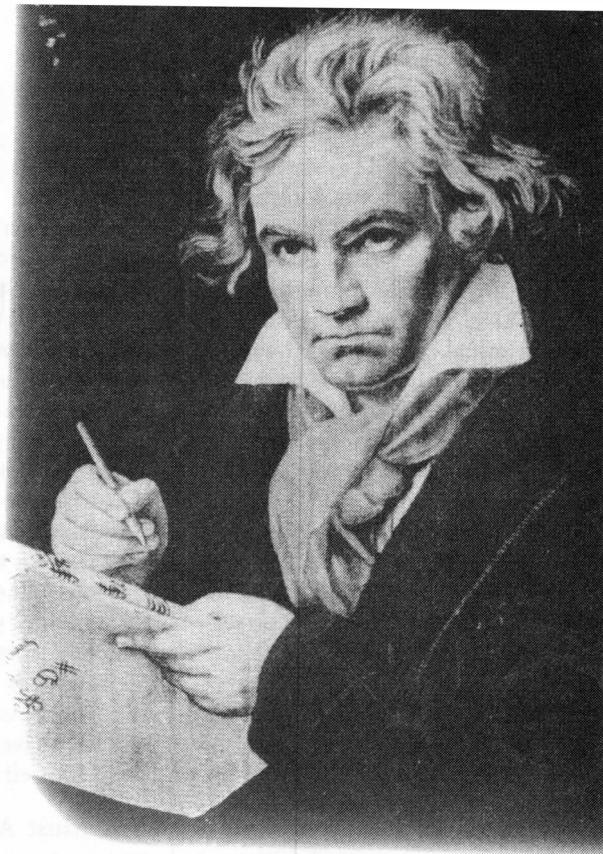
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'And They Shall Proclaim My Glory Among the Nations'

The Panel of the Infante" is one of six panels in the altarpiece of the Veneration of St. Vincent, which was painted between 1471 and 1481 by Nuno Gonçalves. This extraordinary collective portrait of the Portuguese ruling house in the century of exploration, highlights the only known contemporary portrait of Prince Henry the Navigator (figure in brown robes and hat, kneeling with hands clasped to the right of St. Vincent, who holds the Bible).

The entire altarpiece, which was rediscovered in 1882 at the monastery of St. Vicente de Fora in Lisbon, uniquely conveys the central theme of this issue of *Fidelio*, that the Age of Discovery was motivated by the Christian concept of man, reflected in the affirmation at the Council of Florence in 1439 that the Holy Spirit proceeds both from the Father and from the Son (*Filioque*).

St. Vincent, who is one of only three deacons ever canonized, is closely related to the drive for the national independence of Portugal. After the victory of the first king of Portugal against the Moors in Lisbon in 1147, the king erected a chapel dedicated to the Virgin Mary and to St. Vincent, who became the patron saint of the royal house of the city of Lisbon and of the navigators who, in 1471, contributed to the Portuguese conquest of Arzila and Tangiers. In fact, one of the other panels in the altarpiece is devoted to the brotherhood of Sailors and Fishermen.

This particular panel celebrates Portugal's commitment to the navigational project which was led by Prince Henry the Navigator. In addition to Henry himself, Dona Isabel, the daughter of Dom João I, appears at the left in a widow's garb. Together, they symbolize the historic role of the House of Avis in the pursuit of navigation.

The most revealing feature of this altarpiece is the theological context in which it locates the Age of Discovery. St. Vincent's Bible is opened to the Gospel of St. John

14:30-31, where Christ says: "I will no longer speak much with you, for the ruler of the world is coming. He has no power over me, but the world must know that I love the Father and that I do just as the Father has commanded me. Get up, let us go." This passage occurs as part of the Last Supper discourses of Christ with the Apostles, in which he tells them that the Father will send them the Holy Spirit of truth to be with them always. This text is

read in the mass for Pentecost, to refer to the propagation of the faith by the Apostles after the Holy Spirit has descended upon them.

To further underscore the evangelizing spirit which was the driving force behind the Age of Discovery, in another one of the six panels, the Panel of the Relic, the painter portrays Isaac Abravanel (1436-1508), of the illustrious Jewish family, who became the financial adviser to Dom Alfonso V in 1472 and who was an important Biblical scholar. He holds his Hebrew Bible open to Isaiah 66:18-19: "I come to gather nations of every language; they shall come and see my glory. I will set a sign among them; from them I will send fugitives to the nations: to Tarshish, Put and Lud, Mosoch, Tubal and Javan, to the distant coastlands that have never heard of my fame, or seen my glory; and they shall proclaim my glory among the nations."

In his portrayal of Abravanel, the painter thus uses the prophecy of Isaiah to prefigure Christ's instruction at

Pentecost to the Apostles: "Go, therefore, and make disciples of all nations, baptizing them in the name of the Father, and of the Son, and the Holy Spirit, teaching them to observe all that I have commanded you." By extension, both passages from the Bible attest to the mission of the new apostles being assembled by Henry the Navigator and later by Columbus, to proclaim God's glory among the nations.

—William F. Wertz, Jr.

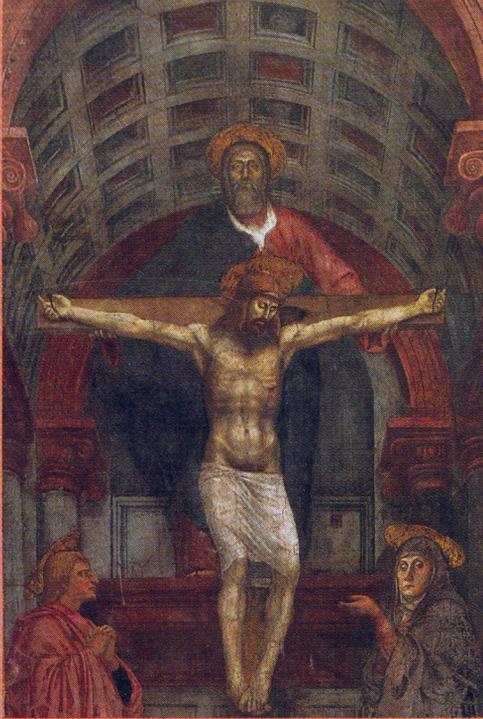


Museu Nacional de Arte Antiga, Lisbon

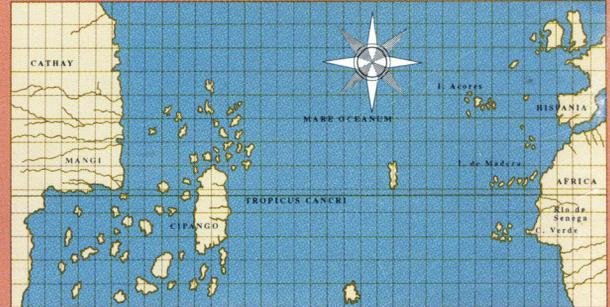
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Columbus and the Christian Concept of Man

Christopher Columbus' discovery and the subsequent evangelization of the New World, were a giant step forward for all mankind, based on the liberating, Christian concept of **man** as *in the living image of God*. This concept, as expressed in the *Filioque* clause of the Nicene Creed—which was reaffirmed at the historic Council of Florence in 1439—was the driving force behind the Golden Renaissance of art and science in the fifteenth century and gave rise to the project, realized by Columbus in 1492, to sail *westward* across the ocean-sea.

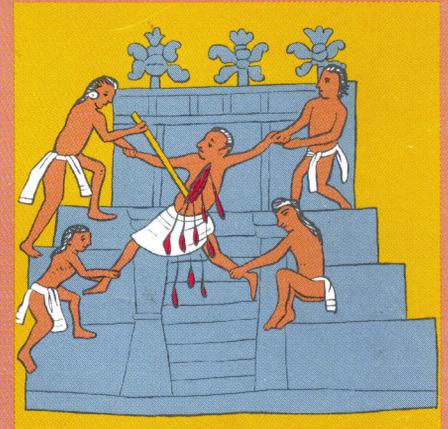


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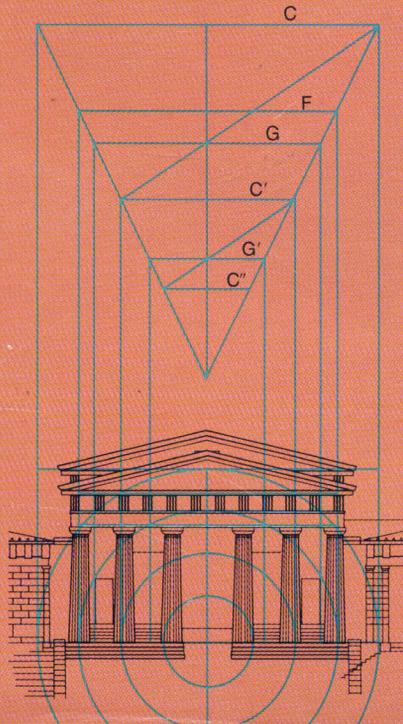
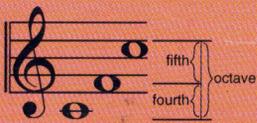


Who Really Killed Off the Aztecs?

In an attempt to portray Columbus' exploit as a prelude to mass murder, some pseudo-scientists have claimed that there were thirty million people in Mexico before the arrival of Europeans. Carlos Cota Meza demonstrates not only that the level of economic activity of the Aztec Empire could not have sustained a population of more than three to five million, but that such a society—based on **human sacrifice**, cannibalism, and slave labor—was doomed to its own self-destruction.



Diatessaron (fourth) $4:3 = C:F$
 Diapente (fifth) $3:2 = F:C'$
 Diapason (octave) $2:1 = C:C''$



The Classical Idea of Beauty

To achieve a renaissance of the human spirit today, we **must** revive the Classical Idea of Beauty established during the Golden Renaissance. Lyndon LaRouche demonstrates that Romanticism and Modernism are **not** necessary "periods" in the development of art; instead, they are politically motivated expressions of erotic irrationalism, in opposition to the view that the purpose of art is "to bring forth the force of *agapē* to rule our minds and guide our actions."