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Music and the Occult
French Musical Philosophies
1750-1950

By
Joscelyn Godwin

University of Rochester Press

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Louis-Claude De Saint-Martin

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Chapter One

The Harmony of the Spheres in the Age of Enlightenment

Preamble: Defining Terms

A book of this kind inevitably uses words that are not fully established in academic discourse, and which it is well to define from the outset. The "occult" of the title is the subject of the famous work of Henry Cornelius Agrippa, *De occulta philosophia* (first published 1533), whose three volumes treat of "Natural Magic," "Celestial Magic," and "Ceremonial Magic." The occult philosophy holds that the universe is articulated by a network of correspondences, "occulted" or invisible to the senses. Agrippa's various types of magic exploit these correspondences, using objects in the lower realms of existence (e.g., words, metals, herbs) to draw down the influences of their higher counterparts (e.g., angels, planets).

Springing out of the occult philosophy are the "occult sciences" that include astrology, alchemy, magic, and divination. These all depend on the doctrine of correspondences. When that doctrine was discarded after the Scientific Revolution, they no longer appeared to merit the name of "sciences," and have enjoyed only a twilight existence ever since.

Whereas the occult sciences are as old as civilization, the figure of the "occultist" has only existed since the middle of the nineteenth century. It refers to persons who pursue the occult sciences, especially in an

eclectic way, in conscious defiance of scientific materialism. 1

"Exoteric" and "esoteric," as used in this book, refer to the division within a field between what is generally known and accepted, and what is reserved for only a few. This "reservation" may be simply a matter of choice, as in the case of Christianity, whose esoteric doctrines interest only a minority of believers, or else it may be a formal division, as in the case of the Mysteries of Antiquity, which were only accessible after due qualification and trials. Because of such usage, "esoteric" often carries an implication of something mystical or spiritual that touches the deeper levels of the human being. When I use it in the context of music theory, it is to distinguish the exoteric theory that is content with rational analysis from the esoteric theory that introduces concepts from the occult sciences.

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The term "theosophy," with its related terms "theosopher" and "theosophic," has come to connote the tradition of Jacob Boehme (1575-1624) and his disciples in England, France, and Germany. As its etymology shows, theosophy concerns the wisdom or understanding of the divine, as distinct from the pure experience of it that is the goal of mysticism. In Boehme's case, this meant the analyzing of God's nature and the means by which the cosmos comes into being, on the basis of his own vision. There are also theosophers among the Neoplatonists of late Antiquity, from whom the term originates.

"Theosophy," on the other hand, with a capital T, refers in current convention to the Theosophical Society founded in New York in 1875 by Helena Petrovna Blavatsky and Henry Steel Olcott. Its members are Theosophists. Some Theosophists were also theosophers (Blavatsky among them), but by no means all. In practice, Theosophists differ from the essentially Western and Christian tradition of the theosophers in according an equal or superior value to oriental teachings, especially esoteric Hinduism and Buddhism. 2

"Hermetism" refers to the followers of Hermes Trismegistus, the mythical author of the *Corpus Hermeticum*. This term does not occur in the present book. "Hermeticism" does: it means the practice of the occult sciences, especially alchemy, in either an operative way (i.e., with physical substances in a laboratory) or a spiritual way, with a view to the perfection of the human being. Most, but not all Hermeticists since the Renaissance have practiced Christian Hermeticism. The Hermeticist differs from the mere practitioner of the occult sciences in having a spiritual goal.3

In the earlier part of the book I have used the term "illuminate" as equivalent to the French *illumine*, to mean the French theosophers of the period circa 1750-1850.4

"Speculative music," derived from the medieval category *musica speculativa*, denotes that part of music theory that has nothing to do with practice, but is concerned with identifying the principles of music. It is the esoteric part of music theory, and as such readily absorbs ideas from theosophy, Hermeticism, and the occult sciences. The topics treated in speculative music include the harmonies of the angelic orders, the zodiac and planetary spheres, the elements, the soul, and the human body; the hidden correspondences of nature; the secrets of number; the power of sound; and the moral responsibilities of a music that wields this power.5

The Fortunes of Occult Philosophy

There are certain epochs in the history of the West when such studies have occupied the greatest intellects, and other epochs when almost no one has paid any attention to them. Of the seven epochs that have been most favorable to occult philosophy, the first was Alexandrian Neoplatonism. This

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flourished during the first centuries of the Common Era, and was marked by such figures as Plotinus,

Porphyry, Iamblichus, the Emperor Julian, and Proclus, and by texts such as the *Corpus Hermeticum*, the pseudo-Zoroastrian *Chaldean Oracles*, and the *Orphic Hymns*. Because of the godlike reputation of Pythagoras and the consecration of the study of harmony by Plato (*Republic* 531), speculative music was included in the philosophical curriculum, where it would remain throughout the Middle Ages.

The second period was the Islamic Neoplatonism of the tenth to twelfth Christian centuries, beginning with the gathering of classical wisdom by the Brethren of Purity in Basra, and ending with the series of medieval Persian theosophers who constellated around Suhrawardi the Martyr. In music, this included the rescue and translation of Greek theoretical works, and the incorporation of the "harmony of the spheres" in Islamic cosmology.

The third period was the School of Chartres in the twelfth century, where the *dissecta membra* of the Platonic tradition were eagerly studied: Calcidius' translation of part of the *Timaeus*, Macrobius, Martianus Capella, Boethius, and a few Neoplatonic works believed, at the time, to come from the pen of Aristotle. This was accompanied by the translation of many Arabic texts into Latin, including works on alchemy and other occult sciences. The concept of world harmony was important to the Chartres philosophers, though their musical studies did not go beyond their classical models.

The fourth period came in the second half of the fifteenth century, with the Platonic Academy of Florence, founded by Cosimo de' Medici and led by Marsilio Ficino, who translated the works of Plato and the *Corpus Hermeticum* into Latin. Ficino was responsible for recreating the Orphic incantations and for giving music a high place in his scheme of planetary magic.

The fifth period lasted from the end of the sixteenth to the middle of the seventeenth century, this being the time of Paracelsism, of the Rosicrucian manifestos, and of an intense interest in alchemy and the occult sciences. Speculative music flourished in the work of Johannes Kepler, Robert Fludd, Marin Mersenne, and Athanasius Kircher. On the practical side, this was the time of the invention of opera, an art-form nurtured from its cradle by Neoplatonism.

The attitude to the occult sciences, and consequently to speculative music and to its doctrine of universal harmony, changed greatly in the course of the seventeenth century. Fludd and Kepler were the last to propose seriously a correlation of the planetary orbits and motions with specific musical tones, after the fashion of the ancient Greeks. 6 In France, the influence of René Descartes and his friends Marin Mersenne and Pierre Gassendi served to discourage the Hermetic approach to natural philosophy, tending more and more to fix a gulf between faith and religious dogma, on the one side, and the mechanistic view of nature on the other. Towards the end of the century, philosophers who thought in terms of universal harmony, such as the Third

Earl of Shaftesbury 7 and Gottfried Wilhelm von Leibniz, 8 were doing so in a purely metaphorical sense. They believed that the universe was harmonious, but did not use music theory as a key to understanding the mechanism of this harmony.

The sixth and seventh periods, which are the ones covered in this book, came at the beginning and end of the Romantic period, namely in the decades around 1800, and in the *fin-de-siècle* epoch up to the start of World War I. As always, an interest in occult philosophy went hand in hand with the cultivation of speculative music. But whereas the musical aspects of the first five periods are familiar to historians of ideas, those of the period 1750-1950 are virtually uncharted territory.

This territory is worth exploring for several reasons. First, it is strewn with reminders that there is something more to music than is commonly believed. Our authorities show that music, besides being entertainment, self-expression, and communication, can become an instrument of knowledge. They find in it a key, or a lever, that gives access to regions of knowledge denied to (and hence denied by) the reductionist mentality. After all, the very fact that music exists is astonishing enough. No outsider to the

human condition would suspect that proportional vibrations would affect us as we know they do. There is every reason to question this extraordinary phenomenon, and to learn something of the world-views that purport to shed some light on it.

It is possible to hold an open mind on these matters without tumbling headlong into occultism; possible to admit that music may be a stranger thing than we can ever grasp, and that in some way it may actually be larger than ourselves, just as physics and biology are larger than our bodily organisms. If this is so, the efforts of speculative music theory are not in vain, but are part of the history of science in the broadest sense. They are efforts to seek out the principles and meaning behind one of the most enigmatic and marvelous of human activities.

Special Conditions in France

It so happens that, during these two hundred years, it was in France that speculative music had its most fruitful encounter with occult philosophy. There seem to be two reasons for this. First, an interest in Hermeticism and the occult became viable in French intellectual circles from the mid-nineteenth century onwards, to a degree unparalleled in other countries. The main responsibility for this lies with literary figures, of whom the best known outside France are probably Charles Nodier, Gérard de Nerval, George Sand, Honoré de Balzac, Victor Hugo, Charles Baudelaire, Arthur Rimbaud, and Stéphane Mallarmé. Their works are full of alchemy, occultism, spiritualism, secret societies, mystical experiences, metaphysical speculation, and the doctrine of correspondences, presented under the cloak of

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fiction or poetry. To read them is to gain an esoteric education, whether one is aware of it or not. It is no disrespect to the English-language writers of the same period indeed, some may think it to their credit to say that, with the signal exception of Edward Bulwer-Lytton, they did nothing to encourage an interest in these subjects.

A second reason lies in the interest that music had held for the French public ever since the eighteenth-century controversies over opera: the debate between the defenders of Lully and the new proponents of Rameau during the 1730s; the "Querelle des Bouffons" of 1752, in which Jean-Jacques Rousseau took up arms on behalf of Italian music, as against French; and the staged rivalry between the supporters of Gluck and those of Piccini in 1776. All Paris was involved in these debates; everyone had something to say on one side or the other. They served to focus the attention of the entire literate population on music. If one adds to them the debates on a higher level, such as the controversy about the articles which Rousseau wrote for Diderot's *Encyclopédie*, one has to conclude that the French of the eighteenth century were the best informed people on musical questions, and the most emotionally involved in them.

The very idea of an Encyclopedia that would contain all knowledge without ecclesiastical dogmas and prejudices is reflected in miniature in the universal systems of several of our authors: in the socio-planetary scales of Fourier, in Wronski's "Law of Creation," in Saint-Yves d'Alveydre's "Archéomètre." Nothing of the kind exists outside France. In the Germanic countries, the erection of universal systems was much more a philosophic and idealistic exercise than a practical one. One looks in vain through Kant, Schopenhauer, or Hegel for the essentially Hermetic idea of matter as mirror to the spirit. Neither does one find in these philosophers an illuministic or messianic impulse. The German Romantic writers lacked the systematizing mind that delights in drawing up classifications, tables of correspondences, and diagrams. And one has to add that Germanic music, from J. S. Bach to Richard Wagner, enjoyed an efflorescence that would put to shame any attempt to reduce it from an audible to a speculative condition! It is not in Germany and Austria that one hears complaints about the parlous state of modern music and the superiority of that of the Greeks, such as were voiced by so many French theorists.

The period under scrutiny saw the revival of esotericism in France among the *illuminés* (Louis-Claude de Saint-Martin and members of mystical Freemasonic orders), and its repercussions in Romanticism, Symbolism, and Surrealism. It witnessed the burgeoning of a popular interest in occultism, at the same

time as more serious efforts to find a place for the occult within modern science. Mesmerism is the best-known example of these. It was the time of the discovery of Oriental religions, which the Theosophists, especially, sought to reconcile with Western traditions. The epoch started out full of idealism and optimism. Yet by its end, it had seen modern rationalism denied

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by the collective insanity of two world wars, and nineteenth-century materialism called into question by the discoveries of the new physics. Where could one turn for certainty? For the sages of India, Egypt, China, Babylon, the answer was always the same. Certitude, they said, is nowhere to be found on earth; but perhaps in the heavens, and surely in number and geometry, one can discern the traces of a divine intelligence and of unshakable principles that no political or philosophic tyrant can ever alter. In music these principles become audible, and speculative music demonstrates how this is so. No wonder that it became a magnet for minds of a certain stamp.

The world view based on universal harmony, while compatible with Enlightenment thought, incurred formidable heresies from the point of view of Rome and Geneva alike. In a universe where all is harmonious, where is there room for the Devil, the Fall of Man, for eternal damnation? The ills that we suffer are reduced to temporary discords, taking their place in the complex and sublime harmony of the All. A God who plays the cosmic symphonies cannot have any antagonists, cannot be angry or offended, while the human being, enveloped in harmony that resounds within the body and soul as it does in the celestial vaults, could never have fallen from grace, and has no need for vicarious redemption. Nature does not groan in her travail, but is a partner in this joyous music, while the arts, as imitations of nature, follow the same order and obey like proportions.

To raise the question of whether it is possible to specify the details of this world harmony, and to describe its operations, is to enter the realm of esotericism. In the present instance, the esoteric presumption is that the individual can search out and know something of the mind of God, and of the way in which the universe has been thought out by its creator or emanator. For those esotericists of a Pythagorean cast, the answer is typically sought in the mathematical realm, and particularly in numbers considered as musical ratios.

Newton and the Doctrine of Correspondences

Before concentrating on France, it is important to understand the seminal role played by certain experiments of Sir Isaac Newton (1642-1725). Newton, as is now well known, followed the quest for the universal key not only through astronomy and mathematics, but also through alchemy and the study of biblical prophecy and chronology. We will look at only two instances, but ones which show Newton's power to make brilliant connections between the domains of astronomy, cosmology, mathematics, optics, color and music. The first is his solution of a mathematical fallacy concealed in the biography of Pythagoras; the second, his invention (and we have to call it that) of the seven colors of the spectrum. The first remained unknown until recent years, while the second gave birth to a whole school of color-theorists.

Pythagoras, so goes the story, 9 was one day passing the door of a smithy,

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and heard the hammers striking on the anvil and making consonant notes, like the descending series C', G, F, C. After ascertaining that the differences in pitch were due to the different weights of the four hammers, he weighed them and returned home. Here he fixed a nail in the angle of two walls, and hung on it four identical strings, to which he attached four weights in the same proportion as the hammers: 6:8:9:12. The strings gave forth the same series of intervals as the hammers had done, and on this discovery Pythagoras

based his musical system.

The fallacy is that, in order to obtain the requisite notes from four equal strings, the weights would have to be related not as 6:8:9:12, but as the squares of these numbers, i.e. as 36:64:81:144. Admittedly, the four notes would be given by strings whose *lengths* were proportioned as 6:8:9:12; but the law governing weights or tension is different from the one governing resonant length (or vibration ratio).

Several critics before Newton had spotted this error, but it remained for him to suggest a hidden reason for it. Here is the argument he prepared during the 1690s, while working on the *Scholia* or commentaries for a projected second edition of his *Principia Mathematica*. Newton suggests that Pythagoras, after discovering the true ratios of weights necessary to produce the four tones, extended this inverse-square law to the planets. The Pythagoreans were well aware of the true arrangement of the solar system (so Newton, like Galileo and Copernicus, believed); but they hid this knowledge from the profane in the allegory of Apollo, the sun god, with his seven-stringed lyre. The law of gravity was likewise concealed in this fictitious story of Pythagoras, whose error would only be noticed by those who took the trouble to reproduce the experiment, and who had the intelligence to draw the necessary conclusions. To summarize, we have on the one hand the supposed discovery of Pythagoras: that the weights needed to change the pitch of a string are in inverse proportion to the lengths of string that would give the same notes; while on the other, there is Newton's law whereby the gravitational attraction of planets towards the sun is in inverse proportion to the squares of their distances.

Far from imagining himself to be the first person to have discovered this cosmological secret, Newton saw his own system of celestial mechanics as restoring the true cosmology of the Ancients, which was known to the Egyptians and to their pupil Pythagoras before the corrupt doctrine of geocentricity and the idolatry of late Antiquity. 10 This is an attitude we will meet repeatedly among our philosophers and theosophers; here it is, in the father of modern science.

The second Newtonian example, and a more important one for its repercussions across the centuries, comes from his *Opticks* of 1704. Among his first scientific experiments, made at Cambridge between 1666 and 1672, were those with lenses and prisms, by means of which he arrived at his theories of light and color. Dr. Penelope Gouk has shown¹¹ that Newton began

his experiments with the idea that there were only five colors: red, yellow, green, blue and violet. (He groups these five several times in the *Opticks*, too.) But he subsequently added two more, "to divide the image [of the spectrum] into parts more elegantly proportioned to one another." 12 Hence there occurred to him the analogy with the seven notes of the diatonic scale. In the *Opticks* Newton speaks of the difficulty he had in distinguishing the colors of the spectrum. It appears that it was his assistant, endowed with better eyesight, who divided up the spectrum of sunlight refracted by a prism; and that Newton subsequently discovered, as if by chance, that the proportions of colors were equal to those of the intervals of a eight-note scale on D. But it was certainly Newton who had instructed his assistant to make seven divisions, prompted as one must suppose by the desire for a musical analogy. As a result of this decision, most people today believe unthinkingly that the rainbow has seven colors, called red, orange, yellow, green, blue, indigo and violet.

In searching for the rationale behind the spectrum, Newton discovered another musical dimension. It was while experimenting with the colored rings that appear when two pieces of glass are pressed together ("Newton's rings"). He calculated the spaces between the two plates that gave rise to different color spaces of the order of a ten-thousandth of an inch and found that they were proportioned as the cube roots of the squares of the string lengths that would have given the corresponding intervals. It was through such calculations that he later discovered the wave lengths of light. But he was surely well aware of the striking coincidence with Kepler's third law: that the squares of the periods of planetary rotation are related as the cubes of their distances from the sun. Here is Newton's law, expressed analogically: The cubes of the intervals between the plates are related as the squares of the musical intervals corresponding to them.¹³

To Newton's way of thinking, the harmony of the universe had attained experimental proof. Music and color had united with mechanics, gravitation, weight, and the periods of the planets. It must have seemed as though the Hermetic doctrine of correspondences was to be part of the new science.

Père Castel and the Color-Tone Parallel

The idea that colors correspond to tones was part of Newton's scientific imagination, but not one that he ever tried to realize in practice, for example by constructing an instrument that would produce colors and tones simultaneously. To take this seriously required an entirely different type of personality. Such a one was Louis-Bertrand Castel, S.J. (1688-1757), one of those Jesuits with scientific ambitions and an insatiable curiosity, who would have been more at home in the century of Athanasius Kircher and Caspar Schott than in that of Voltaire and Rousseau.

Castel was born in Montpellier and educated by the Jesuit Fathers at

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Toulouse. After teaching at Clermont, Aubenas, Pamiers, and Cahors, he came to the Jesuit school in Paris, situated on the rue Saint-Jacques in the premises of the present-day Lycée Louis-le-Grand. Castel was Professor of Mathematics and Physics there from 1720 onwards, a position that made him the authority on all matters of technology. He taught courses in mechanics, which included "pyrotechnics, or the art of fireworks, clock-making, and especially the various fields of architecture, both civil [. . .] and military and naval." 14 He had a universal mind, and like others of his type he set out to create a new system of the world that would be based on correcting the errors in all previous ones. Among the latter was the system of Newton. Similar to Kircher, who made himself ridiculous to posterity by apparently rejecting the heliocentric system, Castel earned a place in the museum of forgotten eccentrics through his defense of outmoded systems such as those of Descartes and even Aristotle.

Castel explained the functioning of the entire universe as due to the two forces of lightness and heaviness. He explained this natural philosophy in a two-volume work, *Traité de physique sur la pesanteur universelle des corps* (1724), and in a further fifty articles in the *Mercur de France* and the Jesuits' organ, the *Journal de Trevoux*. Here is his description of its essentials:

[. . .] The entire system of nature, meaning that of mechanical nature, and all of mechanics, is reducible to relative weight, which positions and causes to move the various bodies and their substances in concentric layers and circular orbits, altered by a few light and insensible undulations.¹⁵

The earth is one such concentric system. Space, too, is full of vortices which determine other centers, perhaps inhabited like our own. One might ask how such a system, once created, differs from a machine. Castel says that God's intervention makes the difference. From time to time, God performs miracles, "which make visible the workings of a power that is incontestably superior to nature."¹⁶ Castel thus borrows the Hermetic dualism of the twin forces, expansion and contraction, and assimilates them to the Aristotelian categories of lightness and heaviness. He also borrows the perfect equilibrium of the material world from the doctrine of pre-established harmony, and adds to it a god who violates this equilibrium in order to accomplish the acts recorded in Scripture.

It is an ingenious marriage of science with dogma, but, like every science that has been forced to evolve under the watchful eye of religious orthodoxy, Castel's natural philosophy remains a curiosity, in the period which ended with the overwhelming triumph of Newtonianism.

Until this triumph was certain, Castel's ideas were welcomed to the debate, resulting in honors and attentions out of all proportion to the quality of his thought. He was elected to the Royal Society of London, as well as to the

Academies of Bordeaux and Rouen. With his "clavecin oculaire" (ocular harpsichord), he still enjoys a faint immortality among the color-music theorists of the twentieth century, as the Giotto or Guido d'Arezzo of the subject.¹⁷

One is not surprised to learn that it was after reading Athanasius Kircher's *Musurgia universalis* that Castel, in 1724, conceived of the correspondence of colors and tones.

I read somewhere there that if, during a beautiful concert, we could see the air agitated by all the tremblings caused in it by the voices and instruments, we would be astonished to see it suffused with the brightest and most various of colors. This is one of the ideas that I call the "seeds of discovery."¹⁸

According to another version,¹⁹ the idea came to him at the precise moment that he was entering Rameau's apartment, and Castel confided to the composer his plan to build an instrument that would render tone visible. After a long conversation, Rameau encouraged him to publish his idea. At this period, Castel was still friendly with Rameau, whom he had perhaps known at Clermont while Rameau was organist there. When the still obscure theorist arrived in Paris from the provinces, Castel received him and encouraged him to work out his theory about the fundamental bass. Later the two men differed over the merits of Rameau's system, which Castel maintained had also come from a suggestion of Kircher's.²⁰

At the time of writing his letter about the "harpsichord for the eyes," Castel was still mentioning Newton with approval:

I refer you [to Newton's *Opticks*] to see all the colors nicely set out in a scale with their octaves, fifths, thirds, and sevenths. I would even say that if you would take the trouble or rather the pleasure to perform the delightful experiments contained in this excellent book, you would discover for yourself the octave-doublings [*répliques*], chromatics, and a whole keyboard of colors.²¹

When he examined Newton's system more closely, however, Castel found it to be the opposite of his own. The Jesuit's universe consisted of tiny globules, which receive the impulses from luminous bodies and transmit them to our optic nerves, in perfect analogy to the principle of the propagation of sound by means of the denser globules of the air.²² This analogy is absent from Newton's system. As for the "delightful experiments," it is highly improbable that Castel ever tried them, to judge from his impatience with the difficulties of the experimental method:

You need prisms: that's the easiest part. You need a darkened room. You need a long apartment, and what professional scholar has that? You

need this and that, a thousand bits and pieces. And then you need time, and a series of a thousand extremely delicate operations, not to mention the mentality of an observer.²³

Naturally you do, the experimenter would reply. But Castel even mistrusted the prism as a research instrument, and declared, with a certain justice: "To say that the seven colors are primary, that the prism gives them because there are seven of them, and that there are seven because the prism gives them, is to give the thesis for the conclusion, to take the effect for the cause, and to confuse the work with the workman."²⁴

Castel's own experiment was far simpler: he stuck the poker into the fire. The colors of the iron changed

from black to blue, then to purple, red, yellow, and finally white. This showed him that all visible colors are situated between black and white, just as all audible tones lie between the inaudible limits of the too-high and the too-low.²⁵

The definitive version of Castel's theory is in his *Optique des couleurs* of 1740. Just as his principal hypothesis of color is the series between black and white, in music it is the phenomenon of harmonics and of the consonances caused by them. As the first color to emerge from black is blue, he associates this with the tone C. The other tones follow:

Deep blue, as I have said, always carries within itself the birth of red. Is it not the C-string that makes the dominant G sound? Red is certainly the dominant color of nature.

Now, the deepest shade of red is always a degree less deep than blue, which gives it birth by increasing in brightness [. . .] And yellow, whose nature makes it a degree brighter than red, seems to be the exact correspondence to the tone E, all the more so since, when one raises blue two degrees of brightness by mixing in white, and raises red a degree above its natural pitch to bring them both to the level of E, then the latter finds itself naturally positioned between blue and red, just as E is between C and G in the diatonic order of the scale.²⁶

Whether or not one is convinced by such an argument, it is important to note that all "esoteric" color-systems are based either on the sevenfold division of Newton, or on the triple one (black, colors, white) of Castel. It is also noteworthy that Newton makes colors correspond to intervals, whereas Castel makes them correspond to tones.²⁷

As every painter or dyer knows, colors are based on three primary colors: blue, red, and yellow. Castel added to these "primitive" colors two more, green and "aurore," so as to make five "tonic colors." He completed the diatonic scale with two "semitonic colors": violet, and *violant* (an old dyers' term for a hue tending towards violet).²⁸ Here is his scheme:

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C	D	E	F	G	A	B	(C')
BLUE	green	YELLOW	aurore	RED	violet	violant	(BLUE)

In order to expand the diatonic scale to a chromatic one of twelve tones, he had to find names for the intermediary "half-shades." This is his complete scale:

C	C [♯]	D	D [♯]	E	F	F [♯]	G
BLUE	celadon	GREEN	olive	YELLOW	AUORE	orange	RED
G [♯]	A	A [♯]	B			(C')	
crimson	VIOLET	agate	VIOLANT			(BLUE)	

Just as music is not restricted to a single octave, the color-scale is not exhausted by these twelve shades. Whereas Newton had decided to divide the spectrum revealed by the prism into seven degrees, so Castel draws his limit necessarily an arbitrary one at these twelve. he then allows each color twelve degrees of difference from the darkest to the lightest. The twelve "octaves" each of twelve colors give as total the significant number of 144, or 145 if one includes the final high C.

Castel becomes quite comical when he describes the research he made to find out whether the acoustic system has the same range. To find out how many different tones there are in music, he turned to the largest of instruments, the organ, which he had studied in his youth (he added that it was very difficult).

Neither Mersenne nor Kircher were much help to him in establishing its range. An organist told him that it had between twenty and twenty-five octaves. For confirmation, Castel visited the organ builders. Twenty to twenty-five octaves are too much, they told him: six are sufficient. Castel adds in parentheses that organ-builders are very difficult to converse with, and no wonder: they did not give him the answer he wanted. Under pressure they admitted that an organ might have ten octaves. Or, if he absolutely insisted, twelve. To confirm this, the Jesuit measured the pipes, and found them ranging from 32 feet to 1/64th of a foot. Assuming that the 32-foot pipe was stopped, it would be equivalent to a 64-foot open pipe. So there were his twelve octaves, as the scales of 64, 32, 16, 8, 4, 2, 1, 1/2, 1/4, 1/8, 1/16, and 1/32 foot, with the tiniest pipe as the 145th tone, the final C. 29

The system was complete: twelve colors, corresponding to the twelve chromatic tones; twelve shades of every color, corresponding to the twelve octaves.

Castel had proposed as early as 1725 to construct an instrument on which "by moving the fingers as on an ordinary harpsichord, the movement of the keys makes the colors appear with their combinations and their chords."³⁰ In 1730 he made his first attempt: an ordinary harpsichord with an appara-

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tus that made little colored pieces of paper appear as one played the keys. He found it unsatisfactory, and showed it to very few people. In 1735 he sketched the essentials of his color-tone theory in a series of letters addressed to Montesquieu. ³¹ No less a person than Georg Philipp Telemann translated extracts from them into German and had them printed in Hamburg.³² Castel used Telemann's version when he expanded the letters into a book, *Optique des couleurs*, which appeared in 1740. Once again he proposed the practical realization of his theories, and was met with a chorus of skeptics, led by Voltaire and Rousseau.³³ There were others, however, both in France and abroad, who seemed sufficiently excited by his theories to encourage him to build a new instrument, in which the colors appeared not painted but illuminated.

We have no precise description of the instrument that Castel exhibited to the public on January 1st, 1755. The author of the description of another "ocular harpsichord," built after Castel's model and shown in London in 1759, gives us an idea of it. Mounted on a harpsichord was a box five feet high, enclosing five hundred [sic] lamps. Sixty little oval windows of transparent enamel let the light appear when the corresponding five octaves of keys were played.

Eckartshausen; Goethe; Rameau

Although Castel's reputation outlasted him to a certain extent, his theories and obsessions went rapidly out of fashion. The doctrine of correspondences, for all Newton's efforts, had nothing to offer the experimental science of the later eighteenth century. It was people like Eckartshausen and Goethe who continued to read Castel, just as they read the alchemists and the Rosicrucians of the seventeenth century. Karl von Eckartshausen (1752-1803) described in 1788 an apparatus that improved on Castel's. It used cylindrical glasses filled with colored waters and concealed by tin shutters. When one played the keys, the shutters opened and allowed candlelight to be seen through the glasses. The inventor writes that "the beauty of the colors is indescribable, far exceeding that of even the most beautiful gemstones. And one cannot describe the sensation awakened in the eye by the different chords of colors."³⁴

Johann Wolfgang von Goethe (1749-1832) mentioned Castel in his *Farbenlehre* of 1810, hailing him as the opponent of Newton's theories, which it was Goethe's intention to abolish. But for the ocular harpsichord he had no admiration.³⁵ Goethe explained that color and tone do not correspond, but that both are derived from a higher formula. "They are like two rivers whose sources arise on the same mountain, but which follow their path under conditions and through regions that are entirely different, so that through all their courses there are no two comparable points."³⁶

Another critic of Newton's theories was Jean-Philippe Rameau (1683-

1764). In his *Nouvelles Réflexions sur sa démonstration du principe de l'harmonie* (1752), Rameau writes of the general laws that control all the arts:

[. . .] is one not persuaded that they all have but one and the same principle? and is not this principle now revealed and demonstrated in the harmony which derives directly from it, as clear to our perceptions as we could ever wish, to convince our reason and leave it no room for doubt?

If Monsieur Newton, for example, had known this principle, would he have chosen a diatonic systema system of simple products, and moreover full of errorsto compare to colors? Would he not have examined beforehand whether these colors should be considered as each forming a basis, a generator, and (forming groups with each other) an agreeable assembly? Would he not have chosen first those which could be compared to octaves and to fifths? And after recognizing the superiority of these fifths in harmony and in succession, doubtless he would have followed the consequences.

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To choose first the fifths, as Rameau suggests, was exactly what Castel did in assigning blue to C, red to G. But Rameau was hardly going to acknowledge the man who had accused him of stealing his fundamental bass from Kircher.³⁸ In any case, Rameau touches here on the essentials of the debate on the principles of music. Should one look for them in harmony, i.e., in the hierarchy of the intervals which appear in the harmonic series? If so, the octave, fifth, fourth, and thirds will be first, and one will judge tunings according to how well they approximate to these pure intervals. If on the other hand one takes the diatonic scale as primary, then melody will have pride of place over harmony. What is the origin of the scale? Surely not the harmonic series, which gives no usable pitches for F or A. (In the eighteenth century one was well aware of the difficulties of natural horns and trumpets in pitching these tones.)

In the next chapter we will meet the defenders of the scale that is based entirely on fifths. These are the Pythagorean purists, who exclude out of principle any number exceeding the "sacred Tetraktys," i.e., any number greater than four. The tuning of harmonically perfect thirds the 4:5 major and the 5:6 minor compels one to use the number five. Consequently the Pythagoreans did not trouble themselves with the intonation of thirds, so long as the octaves (1:2), fifths (2:3), and fourths (3:4) were in tune. This is all very well for purely melodic music, such as plainchant, but for modern harmony, founded as it is on triads, Pythagorean tuning is unbearable.

Rameau, like all practical musicians of the harmonic era, took the harmonic series as his principle, and did not fail to see something sublime in it that, like the source of Goethe's two rivers, united the arts at a higher level. In the same late work, he wrote:

What fruitfulness there is in this phenomenon! What consequences arise from it of their own accord! Could one refuse to regard so unique a phenomenon, so abundant, so reasoned (if I may use the term), as a common principle of all the arts in general, at least all the arts of taste!

In fact, is it not reasonable to think that Nature, simple as it is in its general laws, might have but a single principle for so many things that seem to be so connected, exciting in us virtually the same sensations, as the arts destined to give us the sentiment of beauty?

If one considers that all our senses are in truth only modifications of touch, the same order should subsist in all these modifications. In exercising the sense of sight, as in architecture and other objects apt to give us pleasure through that sense alone, should we not be affected with the

sentiment of beauty by the same general order of organization as causes us to experience the same sentiment by means of harmony when we exercise the sense of hearing! 39

Briseux, Architect and Platonist

Rameau has proposed, in brief, that harmony is the principle of all the arts. In his *Réflexions* he underlines the parallel between musical intervals and the use of the same proportions in architecture. His source of information on the latter was the architect Charles-Etienne Briseux (1680-1754), author of *Traité du beau essentiel dans les arts* which appeared the same year as Rameau's work. In this elegant two-volume folio, printed entirely from engravings, Briseux begins by explaining "the arithmetical, geometrical, harmonic, and contra-harmonic proportions and progressions,"⁴⁰ and their application to architecture. He says that it is the same proportions that give pleasure in the arts, in the human body, and everywhere in nature:

The beauty of the works of Nature generally satisfies everyone. What is the reason for this? It is that Nature's products always embody proportions that are precise and fitting, and that lead to the perfection of the subject they display to our view. Man, being her most perfect product, naturally has a secret inclination for the perfection of the objects he considers, and especially for those whose beauty stems from the imitation of the beautiful proportions of his own body, of which he is the model.⁴¹

We are back with the idea of the harmony of the world, expressed concretely in nature's favorite proportions. Briseux explains the means by which we perceive this beauty. It is because all the fibers of the human body are tuned, and all the bodily fluids present in a certain proportion.⁴² He elaborates on the theme as follows:

All sensations are objects which agitate the nerves, the instruments of

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our sense-organs. These nerves are enlivened by the spirits that flow rapidly through them, all of the same type and all filtered and subtilized in the same fashion within the brain. Thus the spirits that travel from the ear to the brain are identical in kind to those which come from the eye. They are made from the same spiritous fluid, and the nerves that serve to transmit the sense-impressions to the soul are all of the same substance. Thus the objects appropriate to them cannot move them now in one way, now in another. If men have different feelings, and if differing judgements arise from these, this is only because of their having more knowledge or less, from their organs being in better or worse condition, often from their ignorance, and almost always from the greater or lesser reflection that they can make about sensations which originally and essentially are the same in everyone. ⁴³

Briseux is a Platonist, and has a Platonist's confidence in the arts. If someone does not appreciate the beauty of a work created according to the rules of harmony, it is not the result of a difference in taste: it is because of his ignorance (says Briseux), or because of an inharmonious state of his body or soul that one might hope to cure. To most aestheticians of the late twentieth century, such a view, with its implications of censorship, borders on artistic Fascism. It assumes not only the mechanistic theory of perception, but also the hypothesis that all men are constituted alike. Yet when one looks at the drawings, even those by Dürer, which seek to show ideal physical beauty through the calculation of proportions, the results are often frankly ugly. One thinks, too, of the defenders of racial purity who used to measure the proportions of skulls in order to determine which persons or races were "degenerate." This is the danger of Platonism and Pythagoreanism as soon as they descend from the ideal world to pass judgement on earthly things: they are rigid, pedantic, and unsubtle.

I do not mean, in the least, to censure the man whose theories gave rise to this digression. How many architects would dare to express themselves as follows?

Plato has included harmony in the very essence of the soul, being unable to believe that the sensation of visible beauty, as found in it, can have a different source from that of harmonious tones. Like effects suppose the same principle, and must absolutely have a similar cause. God, according to this great philosopher, being eternally and necessarily a geometrician, must have established the harmony of this universe in the essence of the soul.⁴⁴

The unashamed Platonism of Briseux has opened a great aesthetic debate, which is not yet concluded, for all the different forms it has taken in the succeeding centuries. He raises the question of whether the pleasure of music

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comes from these inner experiences of the harmony that is at the core of the universe, or, as most of his contemporaries believed, from the representation of the emotions. In an important work of 1746, *Les Beaux-Arts réduits à un même principe*, the Abbé Batteux (1713-1780) had given the definitive statement for his epoch of the latter view, namely that the object of all the arts was solely the imitation of nature. In the case of music, its principal task was to imitate "animated sounds," i.e., the sounds of the voice as it expresses emotions.

It is easy to talk about imitating nature, but what exactly is this "nature"? It may be the nature of Briseux and Plato, whose essence is number, harmony, and proportion, beyond all passions. Or it may be the nature of Batteux and Rousseau, in whose embrace man lives his life dedicated to sensibility and emotions. There are musics that reflect both of these definitions. For Batteux, a music that imitates nothing is like a prism: "It would be a sort of chromatic harpsichord, which would offer colors and passage-work that might entertain the eyes but would surely bore the mind."⁴⁵ He was engaging in the same kind of debate as that between Rameau and Rousseau: between harmony, recognized as the fundamental phenomenon of the world, and melody, understood as the fundamental expression of human passions. Our esotericists will range themselves on both sides of this debate, while some of them will bypass it altogether.

It is important to establish the difference between the esotericists who are the main subjects of this study and the typical *philosophes* of the eighteenth century. Part of the difference resides in their conceptions of knowledge. The philosophers regard man as endowed with the senses and with a brain, with which he can penetrate to an extent the mysteries of the universe. The knowledge to which the esotericists aspire does not stop short at a comprehension of the universe and its laws: it penetrates the Deity itself. Their deity is not the clockmaker god who has abandoned this world after having installed its harmonious program, but a god who confides his secrets in the depths of the human heart. The belief, and ultimately the certainty, that man is capable of knowing God is the mark of the esotericist, and the reason that he often bears the name of "theosopher." To this extent he resembles the mystic. But unlike the religious mystic, the esotericist is still interested in the created world, and sometimes even obsessed with the systems, order, and proportions through which he supposes the universe to be created and maintained. His mind extends from the highest end of the scale of beings and things to the lowest. He does not deny the sublime possibilities open to contemplative mystics, but neither does he despise more worldly methods of reaching their goal of gnosis. Science, the arts, psychology, sexuality: all these contain secrets to assist him on his path. Moreover, besides the five senses and the brain, the esotericist allows for super-sensible organs and powers, which he may characterize in scientific terms (e.g., animal magnetism), or which he may treat from the point of view of magic.

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Louis-Claude de Saint-Martin: Music as Allegory and Symbol

The only theosopher of the eighteenth century who involved himself in musical questions was Louis-

Claude de Saint-Martin (1742-1803), whose nom-de-plume was "The Unknown Philosopher." He introduces us to a type of thought very different even from that of Leibniz, for Saint-Martin did not exclude from his arguments the possibility of super-sensible knowledge. In musical matters, he was a true child of Plato. In the work of his theosophical apprenticeship, *Des erreurs et de la vérité* (1775), written under the influence of his master Martinès de Pasqually, he divides music into "artificial" and "natural" categories. The first of these is practical music, with which Saint-Martin was familiar as a competent amateur violinist. The second is rather misleadingly named, for Saint-Martin's naturalism is a far cry from that of Rousseau or Briseux. By the natural and primitive state of man, he means nothing less than the ideal world in the Platonic sense, not anterior to ours in time but outside time altogether. Artificial music will never reach the level of the true, natural music, but its sole purpose is to imitate the latter to the best of its ability. Consequently, the composer's task is not to imitate anything whatever in the sense-world, but to devote himself exclusively to the ultra-sensible principle of music. Only by working thus will he be able to achieve "the wonders of which music is capable and which have been attributed to it in all periods." 46 There is another echo of Rousseau a little further on: "No more is needed to understand the infinite difference that there must be between artificial music and the living expression of that true language which we declare to men as the most powerful of means destined to restore them to their rights." 47 But the "rights of man" in question are nothing less than those of the being who is integrated in his genuinely "natural" state. The young Saint-Martin, although using the clichés of his time, endows them with meanings quite different from those of the *philosophes*. His "imitation of nature" differs significantly both from the cold application of approved proportions, and from the reflexion on the unstable affections of the human heart. Several decades before the Romantic era, it already implies that the model which music imitates resides in the ideal world.

In *Des erreurs et de la vérité*, Saint-Martin chooses as his first topic the common chord. He gives an analysis of it which shows both his originality and his distance from traditional harmonic theory. He takes a chord such as C, E, G, C', and describes it as follows:

These two thirds [C-E, E-G] symbolize for us by their difference the state of perishable things in corporeal Nature, which subsists only through the unity of diverse actions; and the last note [C'], formed by a single quaternary interval, is a new image of the first Principle; for it recalls to us its simplicity, its grandeur and immutability, as much by its rank as by its number. 48

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All traditional arithmology assigns the number four to the lower world (the place of the four elements, etc.), and the ternary to the higher world. Saint-Martin here follows the exceptional doctrine of Martinès de Pasqually, who reversed the assignation of the two numbers. There is another arithmological curiosity here. By virtue of adding the two thirds (C-E, E-G) to the fourth (G-C'), Saint-Martin makes the octave total not seven or eight, but ten, enabling him to call it "the first agent, or the first organ, through which Ten has been able to enter our consciousness." 49 In an undated letter, which contains many of the same ideas, Saint-Martin adds: "You know as well as I who bears this number" (referring to Jesus Christ), and adds that "The present observation confirms what is taught us: that it is he who has made everything appear, and it is he who will sustain it as long as it lasts." 50 Later we shall find another Christian Hermeticist, Saint-Yves d'Alveydre, drawing similar conclusions from his discovery of the number ten inscribed in the heavens (see Chapter Eight).

In the same letter, Saint-Martin develops a theory of "good" and "evil" numbers on the basis of the musical scale. The scale has four notes consonant with the tonic: the third, fourth, fifth, and sixth. "Are these not, in another form, our four universal correspondences 51 and a new effect of the immutability of the principle? See then the difference between good and evil: the eternity, the impassibility of the one; the ephemerality [*jeunesse*] and instability of the other." 52

The second and the seventh, on the contrary, are dissonant with the tonic, and manifest the evil number two with regard to it. They hem in the four consonant tones from either end of the scale. Into this situation Saint-Martin reads an allegory of quaternary man, separated from his principle, and "the horrible division

that matter has put into the whole spiritual nature."⁵³

When he comes to discuss the minor scale, Saint-Martin's analysis is actually closer to modern theory than that of his master Rameau, for he sees the minor as a purely human invention, created by lowering the third degree of the major scale. From the notes of the (harmonic) minor scale comes the chord of the diminished seventh chord, from which, as he says, the minor mode derives its greatest beauty. But this chord, which contains none of the four original tones (the ones he believed to constitute the harmonic series), is deformed: its three thirds, all being minor, add up only to a diminished seventh. "Everything here proclaims the feebleness and infirmity attached to the works of man's hands."⁵⁴

In *Des erreurs et de la vérité*, the seventh degree suggests to him a musical solution to the problem of evil:

How was it possible for evil to have taken birth and appeared? Was it not because the superior and dominant note of the common chord, namely the octave, was suppressed, and another note introduced in its place? And what is this note which was introduced in place of the oc-

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tave? It is the one which immediately precedes it, and we know that the new chord which results from this change is called the chord of the seventh. We know, too, that this chord of the seventh tires the ear, holds it in suspense, and demands (in aesthetic terms) to be saved. ⁵⁵

As he develops this idea, the alternation in music of dissonant seventh-chords with perfect triads appears to him as an image of corporeal nature, "whose course is nothing but a sequence of derangements and rehabilitations."⁵⁶ He adds, alluding to the typical cadence of his time:

It is thus that we see that at the moment of termination of a piece of music there is ordinarily a confused beating, a trill, between one of the notes of the common chord and the second or seventh of the dissonant chord, which latter is indicated by the bass which usually holds its fundamental note in order then to restore the whole to the common chord or to unity.

One can see, moreover, that just as after this musical cadence one necessarily returns to the common chord which restores all to peace and order, it is certain that after the crisis of the elements, the Principles which have fought over them will also regain their tranquility. And applying the same to man, one just see how the true knowledge of music might preserve him from fear of death: for this death is only the trill which ends his state of confusion, and restores him to his four consonances.⁵⁷

This opposition is as necessary for cosmic creation as it is for music, for it is this very difference between the seventh and the octave, the interval of a tone and the evil number two, that gives birth to all the scales. Nothing can come to birth except through dissonances. In music, Saint-Martin concludes, "far from causing the least fault in it, [dissonances] are its nourishment and its life."⁵⁸

Returning to the subject of the "primal and universal language, which indicates and represents things in their natural state," Saint-Martin says that music is "the true measure of things, while writing and words express their significance."⁵⁹ Every sensible thing is subject to the law of measure, which appears in its greatest clarity in music. It manifests there in two ways: duple and triple meter. While listening to a piece of music, Saint-Martin explains, one cannot tell until the second measure whether its meter is duple or triple. Until that point, the beats of the first measure are ambiguous. "Does this not show us in Nature herself that hackneyed truth, that the properties of sensible things are not fixed but only relative, and that each is sustained by another?"⁶⁰

This rather naive conclusion confirms that the sense in which Saint-Martin is using music is allegorical, not symbolic. As understood by esotericists, the

symbolic approach has to be based on unchanging principles, not on usages that change over time. Allegory, on the other hand, is determined by common consent. In symbolic terms, the number of the octave is not seven or eight, but two, because at all times and places it is the doubling and halving of a string-length or vibration ratio that produces upper and lower octaves. To fill the space created by this duple proportion with seven diatonic tones or twelve chromatic ones is a peculiarity of European music. At other places and other times, it may contain more or fewer tones, while according to other arithmetics, of which Saint-Martin has given us an example above, its tones may be counted in a variety of ways. Thus the octave can be used as an allegory of practically any number one pleases.

Saint-Martin returned to the subject of music in two chapters of *De l'esprit des choses* (1800), the major work of his maturity. His Platonic position has not altered, but it is concentrated here on the problem of time. "Whereas natural or temporal music will all cease in the course of time, the principal music, whose unity can only be depicted by temporal music in successive form, and which is, in fine, the natural and divine music, will never cease."⁶¹ He adds a subjective description of the use of this medium in order to bring the two worlds closer together:

A man is alone, and in the midst of deepest calm. Not only is music nothing to him, but even the air does not exist as far as sound is concerned, since it carries none. Such a man takes his lyre, or sings; and without stirring from his place, he goes on to develop all around him the hidden riches of the air, the liveliness of tones laden with emotion, the active treasures of harmony and the magic power of chords, the still more penetrating powers of melody, whereby his inner self paints its deepest emotions. In fine, he links his inner self with the musical powers of the air, and the power of the air with his inner self, so as to make it communicate with that pure and superior region with which music is contiguous. Thus by this performance he not only lifts his own being to the divine region, but also makes this divine region descend into his whole being.⁶²

As I have mentioned, Saint-Martin's idea of the universal language included both music as measure, and word as signification. This caused him to differ from the German Romantics such as Tieck and Wackenroder, for whom the apogee of the art was pure instrumental music that had no reference to any model outside of the ideal world. Saint-Martin felt the need for words in order to make music complete. His feeling was connected with his concept of subtle air perhaps a kind of ether "purified by the pure word," as he puts it, which must be set in motion as the channel of communication between man's inner self and the air of the higher and divine region. This was exactly the idea of Marsilio Ficino, who sang his Orphic poems in order to

set his spirits (*spiritus*) in motion and thereby open himself up to the influences of the benefic planets, descending by way of the subtle air. In Ficino's belief, such operations of musical magic only worked because man himself is in a natural state of resonance with the higher powers. Saint-Martin also recalls an earlier concept still: the symbol of man as the lyre of God, which must renounce its self-will in order to become an instrument of the divine will.⁶³

For his final musical allegory, Saint-Martin again turns to contemporary practice, in this case that of the theater, where the rising of the curtain on the illuminated stage is always preceded by music. In the theater, he says, we are the passive witnesses of the faery spectacle of its fabulous divinities,⁶⁴ accompanied by music as are all the most important festivals and ceremonies of our lives. These arts and this music, far from being unnecessary luxuries, are rooted in the "need for wonder that essentially constitutes our being."⁶⁵ But this human music can also open us up to the region of the universal spirit, an astral realm of which we must beware so long as it is not purified by the pure word. Once purified, it can open to us the region of God. In such cryptic statements, Saint-Martin alludes to the morally indifferent realms of the

planetary and astral spirits, which in occultism can serve to energize both white and black magic. The white magician, in the Western tradition, always qualifies his incantations with prayers and expressions of piety: the "pure word" that ensures communication with divine and not demonic entities. Saint-Martin thus describes this communication:

[Music] opens within us the region of our inner faculties, where God himself has inscribed or drawn his own image. When God sees this sign of our alliance coming from us, he cannot ignore it: he regards it with complaisance, and this merest glance from him produces a holy harmony. It makes of the man a being who can no longer show himself without all the signs of election, light, and power, and who can no longer utter a single tone without giving birth to a miracle.⁶⁶

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Notes

1. On the history and meaning of the terms *ésotérisme* and *occultisme*, see Laurant 1992, 19-21. For a definition of the esoteric tradition in the West, see Faivre 1992.
2. On the history of the idea of theosophy, see Faivre 1993. On the distinction theosophy/Theosophy, see the same, and also Santucci 1985. On theosophy in antiquity, see Siémons 1988.
3. On Hermetism and Hermeticism, see Faivre 1986, 49.
4. On the relations between illuminism and the Enlightenment, see Faivre 1973, 59-62.
5. On the nature of speculative music, see Godwin 1992.
6. Fludd 1617; Kepler 1619. Athanasius Kircher's suggestion (Kircher 1650, II, 383), that the planets produce a short phrase in four-part counterpoint, is more a picturesque idea than a serious theory.
7. See "The Moralists: a Rhapsody" in Shaftesbury 1711. Shaftesbury's works were published in French translation in Geneva, 1712.
8. See Leibniz 1956, I, 227 (letter to Wedderkopf); II, 699 (essay "On Wisdom"); II, 797 (essay "On the Radical Origination of Things"); II, 1030 (letter to Coste, reacting to Shaftesbury).
9. Macrobius, *In somnium Scipionis*, II, 1; Nicomachus of Gerasa, *Encheiridion harmonices*, VI; see Nicomachus 1881, 19-21.
10. See McGuire and Rattansi 1966. I am also indebted to Dr. Penelope M. Gouk's unpublished research on the role of music in Newton's cosmology.
11. Gouk, unpublished article on "The Role of Music in Newton's Cosmology."
12. Citation from Gouk, quoting Newton 1984, 544f.
13. The comparison is from Wellek 1935, 351.
14. Dupont-Ferrier 1921, 188-189; cited in Schier 1941, 4.
15. Castel 1724, I, 381.
16. Castel 1724, I, 384.
17. The expression is taken from Klein 1930, 188.

18. Castel 1725. The passage cited is in Kircher 1650, II, 240. See also Schier 1941, 136.

19. *Explanation of the Ocular Harpsichord*, 2.

20. See also Schier 1941, 36f.

21. Castel 1725, 2560.

22. Schier 1941, 39f.

23. Castel 1743, 488, cited in Schier 1941, 104.

24. Castel 1743, 499, cited in Schier 1941, 106.

25. Castel 1740, 10f.

26. Castel 1740, 73f.

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27. Castel cannot be blamed for taking his system from Kircher, who gives an entirely different color-tone scale; see Kircher 1650, I, 568.

28. Castel 1740, 298.

29. Summarized from Castel 1740, 284-294.

30. Castel 1725, 2568.

31. Castel 1735.

32. *Beschreibung der Castellischen Augenorgel, oder des Augenklaviers, aus dem Französischen übersetzt* (Hamburg, 1739), summarized in Mizler 1739-54, II/2, 269-276.

33. It was the rejection of Newtonian physics that annoyed Voltaire, who had written *Eléments de la philosophie de Newton* (1737). Rousseau, despite his reception by Castel in 1741 and his introductions to Castel's friends, mistrusted the Jesuits. He attacked the idea of color-tone correspondence in his *Essai sur l'origine des langues*, ch.xvi. Castel wrote eight letters against Rousseau's *Lettre sur la musique française* (Castel 1754), in which he displayed more patriotism than real musical knowledge. See Schier 1941, 43, 169ff.

34. Eckartshausen 1788, I, 337, cited from Faivre 1969, 544.

35. See Schier 1941, 188.

36. Goethe 1971, 166 (paragraph 747).

37. Rameau 1752, 63f.

38. On the Castel-Rameau controversy of 1735-36, see Schier 1941, 36ff.

39. Rameau 1752, 61-62.

40. Briseux 1752, I, 212ff.

41. Briseux 1752, I, 50f.
42. Briseux 1752, I, 52.
43. Briseux 1752, I, 46f.
44. Briseux 1752, I, 53f.
45. Batteux 1746, reprinted in Batteux 1774, I, 358.
46. Saint-Martin 1979, 523ff.
47. Saint-Martin 1979, 530.
48. Saint-Martin 1979, 511.
49. Saint-Martin 1979, 510.
50. Saint-Martin 1977, 256.
51. Saint-Martin believed, with Rameau, that a tone generates not an infinite number of harmonics but only three: the octave, twelfth, and seventeenth, e.g., C yielding c g, e'. Thus any tone, for him, was a quaternary of consonances. See Saint-Martin 1977, 251, with Jacques Rebotier's commentary.
52. Saint-Martin 1977, 262.
53. Saint-Martin 1977, 264.
54. Saint-Martin 1977, 266.

55. Saint-Martin 1979, 512f.
56. Saint-Martin 1979, 518.
57. Saint-Martin 1979, 518f. The "four consonances" are the third (as C-E or E-G), fourth (G-C'), fifth (C-G), and sixth (E-C'); see *ibid.*, 516.
58. Saint-Martin 1979, 519.
59. Saint-Martin 1979, 523.
60. Saint-Martin 1979, 528.
61. Saint-Martin 1800, I, 174. "Principial" alludes to the ultimate primordial beginnings or principles (*princípia*) of the universe.
62. Saint-Martin 1800, I, 175.
63. Saint-Martin 1800, I, 179f.
64. Saint-Martin 1800, I, 182.
65. Saint-Martin 1800, I, 184.

Jean-Baptiste de Laborde

Chapter Two Pythagoras in Egypt and China

The Abbé Roussier and the Triple Progression

Sometimes in the history of esotericism it is an exotericist who provides the seed that is watered by the initiates, and which they bring to flower in their own works. This is the case with the Abbé Pierre-Joseph Roussier (1716-1790?), the author of *Mémoire sur la musique des anciens* (Paris, 1770). In Roussier's work we will meet at least seven themes which were developed at length after his time, and which are in a sense the key to this whole study. They are: (1) the inferiority of the moderns and their music; (2) the superiority of the ancient nations, especially Egypt, and the degree to which the Greeks were indebted to them; (3) the admiration for Chinese civilization, and the proof it gives of an ancient universal tradition; (4) the correspondence of the planets with tones and with the days of the week; (5) Pythagorean tuning, based on the powers of three, as the true principle of the scale; (6) the evils of equal temperament; (7) the priority of melody over harmony, and of the voice over instruments.

According to Fétis, ¹ Roussier had nothing to do with music before the age of twenty-six, when he discovered Rameau's theory of the fundamental bass. Seized with enthusiasm, the Abbé published his own *Observations sur différens points d'harmonie* in 1755, in which he already displayed his penchant for finding "absolute" principles. Roussier rails against equal temperament and against the tyranny of keyboard instruments, which have driven out the subtle differences of intonation and forced the voice to follow suit. In conformity with this, he proposes the revival of the Greek enharmonic genus. This would entail the use of intervals smaller than a semitone, but Roussier has no sympathy for the complaints that might arise from musicians. He reminds his readers that sliding tones are among the most agreeable; that children can easily sing small intervals; and that, according to the ubiquitous Father Kircher, it is the smallest intervals that sound the sweetest.² These arguments indicate his want of practical experience.

In 1764, Roussier was still paying tribute to Rameau, writing a *Traité des accords et de leur succession*. He praises the great theorist for having been the first to have rediscovered the principles of harmony, after several centuries during which "Harmony was wandering baseless."³ Although France is

teeming with composers today, says the Abbé, they know next to nothing of these principles. As a dutiful Pythagorean, he condemns these disciples of Aristoxenus who have no master but the ear:

The ear, which is to say a certain memory, or, to call it by its right name, a mere reminiscence of what has touched their senses, serves them instead of science, principles, and often even in place of genius, in those works of which they believe and claim themselves to be the creators. ⁴

Roussier was still mainly occupied with modern music, and held Rameau's theories and operas as exemplary of their kinds, even though he had his doubts as to the value of equal temperament. It was perhaps⁵ when he read more closely Rameau's *Génération harmonique*, compared it to a passage in the *Timaeus Locris* (a late Classical work attributed to the interlocutor of Plato's dialogue), and came across a manuscript translated from the Chinese, that Roussier made his crucial discovery. What he found was the "triple progression," which is the series of powers of three: 1, 3, 9, 27, 81, 243, 729 . . . In musical terms, these numbers correspond to a series of descending fifths, because the multiplication of a string-length by 3 gives a tone an octave and a fifth lower. If one takes as unity a string tuned to B, and reduces all redundant octaves, one obtains from the above numbers the series: B, E, A, D, G, C, F . . . These are none other than the seven tones of the diatonic scale.

This was not where Rameau had sought the principles of music: for him they lay in the acoustical phenomenon of harmony. But for Roussier, the triple progression became the foundation of everything, and he devoted his most important book to expounding its consequences. This was *Mémoire sur la musique des anciens* (1770, with the imprimatur of July 4, 1768), a fine quarto work, erudite, eloquent, and well-documented. The Abbé's obsession was now to prove the validity of the triple progression for both ancient and modern music. Several coincidences appeared to support his view. For example:

1. The first three terms of the progression provided the tuning of the mythical "Lyre of Hermes," E', B, A, E (going downwards), thus constituting the basis of the Greek musical system.
2. The first seven terms give the diatonic scale in Pythagorean tuning, which contains only two sizes of intervals: the whole-tone of 9:8 and the *leimma* of 256:243.
3. Here is the Greeks' attribution of the notes of the scale to the seven planets:

Saturn	Jupiter	Mars	Sun	Venus	Mercury	Moon
B	C	D	E	F	G	A

It so happens that the days of the week, dedicated to the seven planetary

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gods, are in precisely the order that these tones occupy in the triple progression, beginning with Saturn:

Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday
Saturn	Sun	Moon	Mars	Mercury	Jupiter	Venus
B	E	A	D	G	C	F

Having observed this, Roussier is careful to tell us his opinion of this so-called harmony of the spheres, "which was literally nothing but the harmony, or the numerical expression, of the tones designated by the names of the Planets, and arranged in a certain way!"⁶

(4) In 1754 there arrived in France the manuscripts on Chinese music compiled by Father Amiot, missionary at Peking. Pierre Joseph Marie Amiot, S.J., was the author of *Mémoires concernant l'histoire, les sciences et les arts des Chinois* (1776-1791), which served for many years as the primary source for Western knowledge of Chinese civilization.⁷ Amiot's researches on music included the explanation contained in the *Han Chou* of the twelve-*lu* system. The *lu* or musical tones are tuned following the triple progression, which the Chinese author enumerates up to its twelfth power: 177,147.

Roussier's excitement over his discovery turned him against every other authority. Now it was "the famous Rameau" who seemed to him blind.

... our philosopher-musician, Rameau, has busied himself in various writings, not to rediscover the principle on which this System was set up, but to explain its mechanism by the fundamental bass of which he is the inventor; or, which is the same thing, by the phenomenon of resonance in a sounding body a phenomenon entirely unknown to the Ancients, from which they would doubtless have greatly benefitted, had they only known it. In a word, the Founder of the modern System of harmony sees in the tetrachord E, D, C, B, for example, only a product of the two fundamental tones C and G [. . .]⁸

Rameau was similarly incapable of seeing in the Chinese system anything but an ascending pentatonic scale: C, D, E, G, A, C'. On the contrary, says Roussier, this succession of intervals has to be taken in the same downward direction as the triple progression: E', D, C, A, G, E. Then one will see clearly that it is an adaptation from the first five members of the triple progression: B, E, A, D, G, and one will notice that these are the same tones as those of the Lyre of Hermes, plus the next two terms of the progression.⁹

Where did this surprising agreement between the Greek and Chinese systems come from? Roussier could not believe that it was the Chinese who had invented it, because their pentatonic scale was so incomplete in comparison to the seven-toned one. His speculations were based on the knowledge that

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all the books in China had been destroyed in 246 BCE. After that, he says, the Chinese only preserved.

... a kind of debris of a complete system, which I attribute to the Egyptians. The very name of the Lyre of Mercury [. . .] shows clearly enough that one must search among the Egyptians for the origin of the triple progression, seeing that this "lyre" is simply the result of, or rather is itself nothing but a triple progression [. . .] If the invention of this progression can be denied to the Egyptians, it is still beyond doubt that they were using it before the Greeks and the Chinese, and that it was from them that came the most ancient principles known about music: and that is enough to make my point. For we shall see in Articles X and XI the link, and so to speak the mutual dependence, of Music and Astronomy in the deepest Antiquity; from which it would not be absurd to conclude that the Chaldeans may well have been the first teachers of the Egyptians in Music, as scholars assure us that they were in Astronomy. ¹⁰

The theme of the superiority of pre-Classical civilizations will often recur in this study. Many esotericists spurned a Greece and a Rome that seemed to them overprivileged by academic classicism, preferring sometimes the mysteries of Egypt with their Hermetic resonances, sometimes the Chinese Empire, wisely governed according to the Will of Heaven, and sometimes India, the cradle of all Western races and the home of the most sublime metaphysics. Like the hierophant of Sais who addresses Solon in the *Timaeus*, the esotericists considered themselves entitled to regard the Greeks as children.¹¹

From this perspective, Pythagoras himself loses his originality. Having learned the traditional system from the Egyptian priesthood, he is only to be credited for having instituted it as the basis of Greek classical music.

Roussier touches briefly on the nagging question of whether the ancient Greeks used harmony in their music. He thinks that they did, but that their harmony was quite unlike ours, being limited to the perfect intervals of the fourth, fifth, and octave.¹² This is not far from the opinion of modern musicologists. As for the enharmonic genus, which the Abbé had recommended to composers in his earlier writings, he now rejects it as a "ridiculous discovery" of late Antiquity. "This heterodox genus (for it is well to speak the truth about it) is, besides, nothing but a poor imitation of the Chromatic."¹³

The term "enharmonic" has two different meanings today. What Roussier refers to is the scale that uses intervals of about a quarter-tone, as for example the enharmonic genus of the Greek Dorian mode: E', C, C-, B, A, F, F-, E (the minus sign meaning a quarter-tone flat). He must have thought of this as an out-of-tune

scale with chromatic elements. The second meaning, in which for example one calls F-sharp and G-flat "enharmonic equivalents," also interested Roussier as a resource for improving the "barbarous" art of his own time. He complained that in our equally-tempered chromatic scale

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we have made a mere dozen tones out of the twenty-one different terms offered by the triple progression:

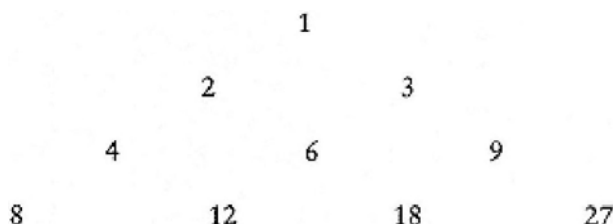
B[♯] E[♯] A[♯] D[♯] G[♯] C[♯] F[♯] B E A D G C F B_♭ E_♭ A_♭ D_♭ G_♭ C_♭ F_♭

"I ask you," he exclaims, "won't our nephews, or those who cultivate the sciences after us, notice it? Will they not see that twelve tones have never, in any time or in any sane head, been able to represent twenty-one or twenty-two?" 14

Roussier rejects temperament, which after all is only an adaptation of the musical system to the limitations of keyboard instruments. He also rejects Zarlino's tuning, with its harmonically correct major third of 4:5 or 64:80, in place of the third given by the triple progression, 64:81. In sum, he refuses to base tuning on the harmonic series that arises in sounding bodies such as strings and pipes. This tuning may be good enough for a hunting-horn or a trumpet, he says at the end of his book, but "it is no less certain that it will never be the natural intonation of the voice, the intonation that it will form from its own movement as soon as it is rescued from all that can constrain, subjugate, or pervert it: in a word, when the voice is alone." 15

In a letter¹⁶ of the same year, 1770, in which he clarifies some points of his *Mémoire*, Roussier speaks more vigorously of "the state of barbarity in which our music is still" (p.5), a music which he condemns as a "profane science" (pp.31-32); he again attacks "Zarlino's error concerning the major third," (p.44) and mentions "the loss of this principle [the triple progression] which gave birth among the modern Greeks to a multitude of opinions about the arrangement of the planets and the correspondance to them of the tones of Pythagoras' system." (pp.44-45) Again, it is the triple progression that is "the touch-stone of contrary opinions." (p.46)

Roussier's passionate defence of the triple progression may seem excessive to us, but for a Pythagorean it is logical. In the previous chapter I mentioned that the Pythagoreans insisted on limiting their musical numbers to 1, 2, 3, 4, and their powers. The musical Tetraktys is formed on the model of the original Tetraktys used by the Demiurge in the *Timaeus* for making the World-Soul. On one side of the Lambda-shaped figure are lined up the powers of 2, which give the series of octaves; on the other, the powers of 3, which give the progression of fifths. The points between the two sides are filled in by the products of 2 and 3.



If one continues to infinity, one will still find no power of 5, of 7, nor any prime number above 3. This is why Pythagorean tuning has no objection to

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a proportion such as the *leimma* (semitone) of 243:256: these numbers, seemingly far beyond the limit of the Tetraktys, are actually only 35 and 28. A proportion such as the 4:5 major third, on the other hand, is

anathema to Pythagoreans, as are the irrational proportions of equal temperament, with their semitone of $12\sqrt[12]{2}$.

In 1775 the Abbé re-issued his *Observations*, and thought of also re-issuing his *Traité des accords*. On reading over a review of the latter book, he wrote a poignant note:

I agree that I was wrong, but that will be redressed in a new edition, as it would have been long ago if books on music sold like other books. The *Traité des accords* has been in print since 1764, and today, in 1777, there are still more than 200 copies left out of the original 800 or 750 that were offered for sale. A thousand copies were printed, and I gave away about 300; I have a few in reserve to give to anyone who wants a copy. I would be happy if half of those to whom they were given took the trouble to read the book. There is no hope at all that my treatise, or any other work, will be read in the future, because nowadays they want to proclaim that Genius has no need of rules. Where is the man who does not believe himself to have genius? Therefore a "Treatise on Chords" or a "Treatise on Discordance," "on Cacophony," etc., would be equally useless. Genius is all that's needed. 17

J.-B. de Laborde as Pupil of Roussier

Old Abbé Roussier was not preaching entirely to deaf ears. He had one devotee in the person of Jean-Benjamin de Laborde¹⁸ (1734-1794). Laborde was an important man of the world: a Farmer-General (i.e., tax-collector), confidant and First Valet de Chambre of Louis XV, Governor of the Louvre, and also the composer of thirty operas and other musical works. In his youth, Laborde had been pupil in composition of Rameau. After the death of his royal patron, he preferred to follow Roussier, and set himself industriously to write erudite works of surprising variety. In 1794 he fell victim to the guillotine.

Laborde's *Essai sur la musique* (2 vols., Paris, 1780) deserves recognition as the first French musical encyclopedia, even if the irascible Fétis (decades later) saw in it "a masterpiece of ignorance, disorder, and carelessness." In the section on ancient music, Laborde devotes several pages to planetary correspondences as described in Roussier's *Mémoire sur la musique des anciens*. These ideas thereby reached a much wider readership than that of which the Abbé had complained. The following year, Laborde revealed himself as a still more faithful apostle, with a *Mémoire sur les proportions musicales, le genre enharmonique des Grecs, et celui des modernes* (Paris, 1781). Nothing in it is original except the elegant style in which Laborde attacks other theorists.

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But once again, it was publicity for the Abbé's ideas, for which one imagines he was grateful. Roussier himself adds at the end of Laborde's work some remarks that show him becoming more tolerant of modern music. Still an admirer of the human voice, he suggests that one should listen to the best singers in order to discover true intonation meaning that based on the triple progression.

Laborde set out to realize this intonation practically. He commissioned a certain Germain to build an "enharmonic harpsichord" with 21 keys to the octave, to give the complete scale of 21 terms of the triple progression, as explained above. ¹⁹ In September 1782, he drew the attention of the Académie Royale des Sciences to his invention, but being obliged to leave on "an indispensable and perhaps a long voyage," he left Roussier with the task of explaining the rationale and principles of the new instrument. Roussier forthwith wrote a *Mémoire sur le nouveau clavecin chromatique de M. de Laborde* (Paris, 1782), in which he introduced the instrument with a certain sense of triumph:

M. de Laborde's harpsichord demonstrates audibly, in a way that everyone can grasp, the rightness of the ancient proportions and the truth of the principle from which they come. These proportions are put into practice here: one need only lend an ear in order to judge their perfection, the beauty and the energy of the tunings that they give, and which were the soul of melody among the

We can only imagine the effect of a harpsichord tuned in this system, in which all the fourths and fifths are pure, but all the major thirds very large and the minor thirds very small. It was precisely in order to avoid such dissonances that the theorists of the Renaissance had preferred to use tuning systems with pure thirds, and those of the eighteenth century had leaned towards more or less equal temperaments. One need hardly add that this chromatic harpsichord was treated merely as a curiosity. But the principles underlying it were by no means exhausted, as well shall see.

A.P.J. de Vismes du Valgay, the Swedenborgian Opera Director

Almost all of the seven themes listed at the beginning of this chapter recur in the works of two equally neglected theorists: G.A. Villoteau and A.P.J. de Vismes. As we continue by examining them in more detail, we will find that they lead us into more esoteric regions, preparing our approach to the great synthesis of Fabre d'Oliver that is the subject of the next chapter.

Anne Pierre Jacques de Vismes du Valgay (1745-1819) holds a small place in the history of opera thanks to two periods during which he directed the Paris Opera.²¹ Born to a family of administrators, he began under the ancien régime as a tax collector. His sister Adélaïde, lady-in-waiting to Marie-Antoinette, married in 1774 the aforementioned Laborde, and by her influence

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saved him from the disfavor into which he fell on the death of Louis XV and reintroduced him to Court. Perhaps it was due to this liaison that de Vismes suddenly came out of bureaucratic obscurity to become a powerful and public figure. In 1778 he signed a twelve-year contract as Director of the Académie Royale de Musique (hence of the Opera), a task which the young man took up with extraordinary energy. He changed everything: the orchestra personnel, the shape of the stage, the repertory, the scenery, and the costumes. He increased the price of tickets and tried to eliminate the lighting of the auditorium. Worse yet, he banned ladies with overlarge coiffures. The press publicized his every move, however trivial. Needless to say, de Vismes did not last the twelve years of his contract. He retired at the end of two years with a pension of 9,000 livres and an indemnity of 24,000, which, as his biographer says, was not bad for a man who had cost Paris some 700,000. ²²

De Vismes disappeared now for nineteen years, perhaps returning to farm administration. In 1799 he reappeared as director of the same institution, now officially called the Opéra. Once again, he was full of projects, but from the moment he started in 1800, rumors of bankruptcy pursued him. Although these were officially denied by Louis Bonaparte, the Minister of the Interior, the affair mushroomed and was soon the talk of the town. The Director of the Opera was accused of embezzlement and forgery, arrested, imprisoned, acquitted, then restored to his position by the same Bonaparte. A brilliant series of concerts marked his return. He produced Pergolesi's *Stabat mater* under lighting-effects like those of a masked ball, and crowned the season with Haydn's new oratorio *The Creation*. But none of this quietened his enemies, and before the end of the year all his plans had foundered. He resigned again, with neither explanation nor pension.

De Vismes retired to Caudebec to devote himself to study and literature, which we will treat below. Still, it is astonishing to see him once again in 1814, after the fall of Napoleon, applying to direct the Opera a third time. But his hopes were unrealized, and nothing more is heard of him until his death in 1819.

In his letter of application of 1814, de Vismes recalls that he has done everything for the arts, yet the arts have done nothing for him.²³ He was surely thinking about his own life when he wrote, at the age of sixty, that a man of his age has generally had only fifteen years of happiness and may well wonder whether it was worth the trouble of being born. De Vismes, however, had one consolation in the person of his wife, Jeanne-Hippolyte Moyroud, a pianist and composer whose opera *Praxitèle* was given at the theater of the Académie Impériale in 1800.²⁴ Since Madame de Vismes' work is lost, her husband's praises remain her

best monument; and they lead us to very different regions from backstage at the Opera.

The first of these is a pamphlet entitled *Discours sur l'amour conjugal [. . .] fait pour être prononcé à la fête décadaire, consacré à l'amour conjugal, par le citoyen Devismes* (Rouen, s.d.). Perhaps it was addressed to the Sweden-

borgian society that started at Rouen in 1791. 25 With the same effrontery that had cost him job at the Opera, de Vismes says that he hopes the legislators of the nouveau régime "will proclaim repressive laws against celibacy." The theme recurs in his *Essai sur la vie, ou l'Homme posthume* (Rouen and Paris, 1805), a little work done "out of love for the sublime truths which fill the Theosophical Works of Swedenborg." 26 In concordance with Swedenborg's teaching, de Vismes says that God has placed "perfect happiness in the knots of conjugal love"; 27 that it is marriage that purifies the blood; that love is the source of the redness in blood, while its whiteness corresponds to wisdom; and that this is the reason that Cupid is represented as blind! 28

De Vismes concludes this essay with the remark that the true life of man begins only when his life ends here below. 29 His destiny is a glorious one: as possessor not only of the natural and intellectual faculties, but of all the 3+3 degrees of the spiritual life, man is "the center of all finite things, just as God in his power is the center of the infinite." 30 All creation exists for the benefit of man.

In another essay of the Year XIII, *Essai sur l'homme, ou l'Homme microcosme* (Rouen and Paris, 1805), which is much like the last, de Vismes anticipates Fabre d'Olivet in referring to the pupils of the Abbé Sicard, Director of the Institute for the Deaf and Dumb (of which more in the next chapter). De Vismes gives as proof of the existence of an inner and spiritual man the experience of the dumb who are able to hear and repeat an echo. 31

That mankind was created for a better life is the great theme of *Pasilogie, ou De la musique, considérée comme langue universelle* (Paris, 1806), a much more original work in which de Vismes at last treats music. After man's death, he says, he will speak the spiritual language without ever having learned it beforehand. What language is this? It is nothing other than music, the primitive and universal language which the angels spoke, and which man himself spoke in his primitive state, before the invention of writing, politics, and sciences. Music is the language of affections (love, desires) which are the essence of human life. 32 This is an idea which was being developed simultaneously by Charles Fourier, as he prepared his treatise on "passional attraction" (see Chapter Four). Music is therefore, in its primary state, a wordless language in which a single tone is enough to express an idea. 33

The true, natural language of man; the primordial language; the language of the ideal world or of heaven: these are ideas that we have already met with in Louis-Claude de Saint-Martin. Like him, de Vismes now goes on to explain some more or less convincing correspondences. Of our twenty-one letters, he says, the seven vowels constitute a sort of octave, which goes downwards to express different emotions. The seven strong and seven weak consonants resemble the chromatic and enharmonic tones. The whole makes up a natural and universal alphabet of twenty-one letters: a significant number which recalls Roussier's system and the chromatic harpsichord of Laborde. Unlike those who find the keys to symbolology in Greek or Hebrew, de Vismes points to our own alphabet. He says that one can tell the age of an alphabet

by the number of its vowels. The oldest is Phoenician, which only has one (A), then comes Hebrew, which he derives from it, with two (A,I); Greek, with five; and English, with eight (*sic*: A,E,I,J,O,U,Y,W). With the same fertile invention, free from any historical considerations, de Vismes now suggests a correspondence between musical and angelic writing. It is very simple: all notation is just modifications of

a circle and a dot, which, modeled as they are on the forms of heaven itself, must be the ones used by the angels. 34

De Vismes credits Roussier with having explained planet-tone correspondences, but he does not share the Abbé's skepticism about the harmony of the spheres. He also differs from him on historical matters. Although de Vismes, like Roussier, starts from Amiot's documentation of Chinese civilization, he draws the contrary conclusion from it, namely that it was the Egyptians who borrowed everything from the Chinese.³⁵ Over six thousand years ago, he says, the Chinese had already made music correspond with the planets, the zodiac, and the days of the week, and had imagined all the musical systems.³⁶

For all his professional involvement with the music of his time, de Vismes follows Roussier in seeing nothing there but barbarism, and for the same reason: modern music does not respect enharmonic differences. If it is to approach nearer to celestial music and depict the passions (which seem to be the same thing for him), the twenty-one "modes" must be established.³⁷ (He must mean the twenty-one different tones of the octave.) But despite his tirade against modern music, de Vismes does not fail to praise his favorite compositions: Pergolesi's *Stabat mater*; Gossec's O *salutaris hostia*, plainchant hymns, and the *Tu es Petrus* and *Vivat in eternum* which Lesueur wrote for Napoleon's coronation in 1804. Despite everything, music can still serve as a "Pasilogie," a universal language. As he tries to explain what form this might take, de Vismes becomes more and more embroiled in trying to find correspondences between the alphabet and the scale that might be used as some sort of international code.³⁸ He ends by apologizing for having only sketched the plan of *Pasilogie*, leaving it for others to follow in his footsteps.

A contemporary manuscript note in the Bibliothèque Nationale's copy of *Pasilogie* remarks that, despite the author's erudition, he does not have sufficient clarity to create a basis for a universal language.³⁹ This commentator, trying to follow the suggestions of de Vismes, proposes dividing a string into ten equal parts, and assigning each to a vowel or diphthong. Consonants could be indicated by differences of duration, then any word could be translated into a sort of melody. This is not the first time that the translation from one medium to another by way of cosmic correspondences has led to cryptography. One recalls the *Steganographia* of Abbot Trithemius (1462-1516) the teacher of Paracelsus and Agrippa, in which the coded messages are magical invocations; or, less occult, the *Polygraphia nova* (Rome, 1663) of Athanasius Kircher, a great project for a universal symbolic language inspired by Hermeticism.

The last work of de Vismes which I shall treat here is entitled *Nouvelles*

Recherches sur l'origine et la destination des pyramides d'Egypte, Ouvrage dans lequel on s'applique à démontrer que ces merveilles renferment les principes élémentaires des sciences abstraites et occultes, ainsi que ceux des arts utiles à la société: suivi d'une dissertation sur la fin du globe terrestre. Par A.P.J. De V. . . (Paris, 1812). This work has the dubious distinction of being the founding document of the genre of "pyramidology." Like Swedenborg, de Vismes accepts the historicity, hence the chronology, of the Bible; thus he places the building of the Pyramids before the Deluge of *anno mundi* 2348, or 3400 years before 1812. The builders were not men, nor even giants, but the evil spirits expelled from heaven with Lucifer, who tried for two millenia to turn primitive man away from God.

Nevertheless, it is to these maleficent teachers that man owes all the arts and sciences that the Pyramids preserve. Far from being pharaonic tombs, they were the depositaries of ancient knowledge: geometry, metrology, mechanics, the secrets of geodesy, etc. And originally, instead of the four [sic] pyramids known to us, there were seven, grouped around the Sphinx like the planets around the Sun.

De Vismes says that the evil spirits, although feebler since the coming of Christ, still encircle the globe. They are evidently the inhabitants of the "unpurified air" against which Saint-Martin warned his readers. Concerning this region, de Vismes no longer cites Swedenborg, but takes as his authority Cagliostro, calling him "the most extraordinary man who lived in the eighteenth century, and beyond contestation a greater magician than all the magicians of Pharaoh." 40 Cagliostro, after returning from the Pyramids, had

said to de Vismes in July 1785: "There indeed morality reigns; there everything is done on the moral plane that you do on the physical. From there, beings unknown to the rest of humanity may, according to their will or the decrees of the Eternal, shake some part of the globe that must be overthrown, and support the hero or the criminal who must be the visible agent of revolution, without his ever suspecting the power that makes him act."⁴¹ And thinking over the thirty years that have passed, de Vismes asks us to reflect on this.

The "Dissertation on the end of the terrestrial globe" that concludes de Visme's *Nouvelles Recherches* reminds the readers that God periodically renews the entire earth, using alternately the instruments of fire and water. The present epoch, says de Vismes, will end with the conflagration of the world in the year 1999,⁴² a date that he probably found in the prophecies of Nostradamus.

G.-A. Villoteau, the Egyptologist

Several of de Vismes's interests recur in the work of his contemporary Guillaume-André Villoteau (1759-1839). While de Vismes was ruling the Opera, Villoteau was a humble chorus member, but one who knew much more about the ancient Egyptians.

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Born at Bellême, Villoteau spent his youth at Le Mans, where he became friendly with the composer Lesueur. As René Martineau says, introducing the almost unknown Villoteau to the readers of *Les Entretiens idéalistes*, "the more fortunate musician was not able to impose his friend on Paris."⁴³ But it was perhaps Lesueur's influence that obtained Villoteau a place in the choir of Notre-Dame, then, after the Terror, in that of the Opera. While earning his living as a singer and teacher, Villoteau studied Oriental languages at the Sorbonne, presumably for his own satisfaction. His studies came to unexpected fruition in 1797, when he was chosen as the musical expert in the corps of scholars that accompanied Napoleon on his Egyptian expedition. Villoteau now found himself the foremost authority on Egyptian music, both ancient and modern. Even today, his contributions to the *Description de l'Égypte*⁴⁴ are a precious source of observations of Near-Eastern musical practice before it came under Western influence.

The voyage to the land of the Pyramids did not inspire Villoteau with ideas as occult as those of de Vismes. For this admirer of the grandiose music of Lesueur, the Great Pyramid must have served to seat on its steps [!] an enormous crowd to watch rituals, concerts, and spectacles. Villoteau advises that similar pyramids should be built in modern prisons, for the benefit of prisoners who can thereby enjoy fresh air and edifying sights, and who would be visible without endangering the spectators outside the walls. But the work which concerns us more is the one that Villoteau was working on at the same time as de Vismes was writing his *Pasilogie: Recherches sur l'analogie de la musique avec les arts qui ont pour objet l'imitation du langage* (2 vols., Paris, 1807). Dedicated to the Emperor's intellectual brother Louis Bonaparte (now King of Holland), it is a huge compilation from Greek and Latin writers, together with a criticism of modern musical theories in which the author makes frequent use of his Egyptian experiences. If one credits Fétis, almost no one read the book because most of the copies were thrown into the sea. Fabre d'Olivet was a notable exception, to be discussed below. Villoteau, for his part, leaned heavily on Marcus Meibom's Latin translation of seven Greek writers on music (*Antiquae musicae auctores septem*, Amsterdam, 1652). In his old age he received a small pension for translating this collection into French, though it remained in manuscript.

Despite its title, Villoteau's *Recherches* are much more historical than esthetic, and mostly concerned with the origins of music. The author's point of view is that of a singer, but not without recalling some of the ideas we have already met. Here is a typical definition: "The object of music is to imitate melodiously the natural expression of a certain sentiment, a certain passion, and to transmit it to our heart through that vivifying air that animates us."⁴⁴ Rousseau had thought that song and language were born together.⁴⁵ Villoteau gives priority to music, which began on earth as a song without words: "The inarticulate language of vocal tones was perfected before that of words."⁴⁶ This primordial language has not been lost: we can find it in all

its fullness in music itself. Believing that music is formed "from the study and imitation of the natural accents of our various sentiments and passions [. . .]," Villoteau seeks to prove:

. . . that this art accompanied the first traditions of history, laws, sciences, arts, and in a word all the moral and physical knowledge of every ancient people. It was even the exclusive means allowed by the legislators of the greatest antiquity for transmitting this knowledge. They constantly opposed the substitution of writing for this essentially traditional art. 47

Thus music holds the place of honor in the hierarchy of civilizing functions: a place that it occupies in practically all esoteric visions of the prehistoric past.

Although he borrowed a great deal from the Greek theorists, Villoteau valued them only as heirs to the Egyptians, thinking that "unfortunately this ancient and respectable music which had been transplanted from Egypt to Greece did not always bear fruit in the latter land."⁴⁸ Looking towards the other great pre-Classical civilization, he does not spare his praises of the Chinese, whose language is remarkable, he says, both for its beauty and for the survival of the musical accents which make it a language that is actually sung, as the ancient Egyptian language certainly was. Like almost all our authors, Villoteau is a moralist. He feels that the Chinese have preserved a decency in their laws and their civil customs that we may well envy. This leads him to an inevitable comparison: whereas in China, music was always regulated by the laws of the land, among us it defies all limits, as do the other arts, preferring to prostitute itself to pleasure alone.

Villoteau's examination of the roots of his art precipitate the reader into a complicated set of ideas, familiar to students of esoteric traditions and centered on the figure of Hermes, the revealer of the arts and of writing. To the equation of Hermes with Mercury and the Egyptian god Thoth, Villoteau adds the gods Pan and Priapus. All of them represent "the universal and fecundating principle which, considered in the intellectual and moral sense, fertilizes the imagination and bestows the genius of eloquence and poetry, and, envisaged in physical relationships, gives fruitfulness to animals and to the earth."⁴⁹ The extreme attention he pays to the symbolism of Priapus goes so far as to include a minute and lively description of the Egyptian bellydance: a good example of the marriage of classical erudition with personal observation. Mercury, Orpheus, Amphion, and the other musicians of mythology stand for those who used music to tame primitive man and make him submit to their laws.⁵⁰ The sciences were known by the sages and patriarchs, whose legends "are so many allegories of the physical and moral knowledge of those distant times, in which we find the sciences and arts interlinked, and dependent on a single principle common to all of them, i.e., to music or

universal harmony, seen as the source and prototype of all the other sorts of knowledge that lead to good order." ⁵¹

This principle even extends to physical nature, where we recognize it in our preference for melodious chords: "because those tones, formed by more regular vibrations, also become more appreciable to the ear; it is because they approach more sensibly to our habitual order and to the harmony that manifests in the beating of our heart and the pulsations of our veins in short, in the action of all the material parts of our being."⁵² Villoteau sees music as a primordial revelation that conforms to the actual nature of the universe, both macrocosmic and microcosmic. Music was given to man for his evolution, but modern European civilization, in its decadence, has unfortunately strayed from this ideal.

Villoteau is writing within the current of the illuminates, but like many of them he is ungenerous when it

comes to details of this universal harmony. He realizes that an important part of it is the numbers and proportions studied by the ancient philosophers from Pythagoras to Boethius, but in modern times Villoteau approves only of Leonard Euler, as the one person who understood both mathematics and music.⁵³ Villoteau is too much of a realist to pretend to such knowledge himself. His only mathematical contribution is a diagram that serves to explain the numbers of the Pythagorean Tetraktys (1, 2, 3, 4), the Nine Muses, and the perfect concords (fourth, fifth, octave, and their combinations).⁵⁴ He shows that the points of the Tetraktys are ten in number (1+2+3+4), that there are nine triangles formed by joining them, representing the Muses, and that there are four horizontal levels to the figure.

In the last analysis, Villoteau's interests are moral and sentimental rather than intellectual. They all center on the human voice, as one can see from this very Romantic passage which ends the speculative part of his work:

We agree, then, that music is nothing other than the perfected natural language; that its expression is independent of any kind of human convention; that this sublime and mysterious expression, like that of nature itself (whose accents it imitates) is engraved in living lines on all hearts; that it embraces everything that arises from feeling; that it can only feebly be translated into words; that it extends beyond the limits of the imagination; and that it has not been given to us to be shut up within the narrow boundaries of thought. We agree, finally, that the language of music is the language of all living beings, whether rational or not.⁵⁵

Villoteau's mixture of personal opinions and erudition was practically ignored from the moment it appeared, yet it was soon to serve as a mine for one of the most original theorists, Fabre d'Olivet, who continually drew on it to support his own contentions.

Notes

1. Fétis 1835-44, s.v. "Roussier."
2. Roussier 1765 (the second edition), p. 71 of the notes.
3. Roussier 1764, xxvii.
4. Roussier 1764, viii.
5. The suggestion is from Fétis.
6. Roussier 1770a, 222.
7. Amiot's report on Chinese music eventually appeared in vol. VI of his *Mémoires* (Amiot 1776-91).
8. Roussier 1770a, 7.
9. Roussier 1770a, 15f., 114.
10. Roussier 1770a, 33f.
11. *Timaeus*, 24B.
12. Roussier 1770a, 195ff.
13. Roussier 1770a, 203n.

14. Roussier 1770a, 241n.
15. Roussier 1770a, 241f.
16. Roussier 1770b; page references are to the separately paginated offprint.
17. Manuscript note, presumed to be Roussier's, at the end of the review of his *Traité des accords et de leur succession* in the *Journal des sçavans*, February 1765, in the copy of the Bibliothèque Nationale, cote V, 2457.
18. Some dictionaries list him under "Borde, de La."
19. He was probably unaware of similar efforts of the late Renaissance by Nicola Vicentino, Scipione Stella, and Fabio Colonna, the last of whom built a harpsichord with 31 tones to the octave (described in *La sambuca lincea*, Naples, 1618).
20. Roussier 1782, 3.
21. For his biography, see Pougin 1914.
22. Pougin 1914, 70.
23. Pougin 1914, 138.
24. Fétis 1835-44, s.v. "Devismes."
25. The society is mentioned in Viatte 1979, I, 88.
26. Devismes 1805a, 72.
27. Devismes 1805a, 50.
28. Devismes 1805a, 47.
29. Devismes 1805a, 3.
30. Devismes 1805a, 37.
31. Devismes 1805b, 39.
32. Devismes 1806, 6f., 22f.

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33. Devismes 1806, 22f.
34. Devismes 1806, 44.
35. The question of precedence between Egypt and China was under lively discussion in the eighteenth century. See the controversy in Joseph de Guignes, *Mémoire dans lequel on prouve que les Chinois sont une colonie Egyptienne* (Paris, 1758); Leroux Deshautesrayes, *Doutes sur la Dissertation de M. de Guignes . . .* (Paris, 1759); *Réponse de M. de Guignes aux Doutes proposés par M. Deshautesrayes sur la Dissertation . . .* (Paris, 1759), etc.
36. Devismes 1806, 49f.

37. Devismes 1806, 60.
38. Devismes 1806, 108.
39. Bibliothèque Nationale, cote X. 33112.
40. Devismes 1812, 25.
41. Devismes 1812, 25f.
42. Devismes 1812, 149.
43. See Martineau 1913.
44. "De l'état actuel de l'art musical en Egypte, Description historique, technique et littéraire des instruments de musique des orientaux"; "Mémoire sur la musique de l'antique Egypte"; "Dissertation sur les espèces diverses d'instrumens de musique que l'on remarque parmi les sculptures qui décorent les antiques monumens de l'Egypte"; all in Jomard, 1809-22. Also in *Recueil de tous les mémoires*. . . ; extracts in *La Musique de l'ancienne Egypte*. . . .
44. Villoteau 1807, II, 68.
45. Rousseau 1753, ch. xii.
46. Villoteau 1807, I, 45.
47. Villoteau 1807, I, xcif.
48. Villoteau 1807, I, 124.
49. Villoteau 1807, I, 412.
50. Villoteau 1807, II, 178.
51. Villoteau 1807, II, 236.
52. Villoteau 1807, II, 114.
53. Villoteau 1807, II, 94.
54. Villoteau 1807, I, 432.
55. Villoteau 1807, II, 490f.

In France, as in Germany, the early Romantic period gave birth to new ideas about music that, consciously or not, related to those long held by occult philosophers. In the case of France, we can be quite precise in dating this birth to the years from 1799 to 1808: the ten years in which Fourier, Wronski, and Fabre d'Olivet received the revelations on which their philosophical systems were founded. On August 15, 1803, Wronski tells us that he discovered "the Absolute." On December 24 of the same year, Fourier wrote his "Letter to the Grand Judge" in which for the first time he sketches out his "harmonian philosophy," conceived in 1799. In and after 1805, Fabre d'Olivet underwent the changes in philosophical orientation and made the linguistic discoveries that allowed him to complete, by 1810, his masterpiece of esoteric scholarship, *La Langue hébraïque restituée*. At least half of the present work is devoted to the consequences of these three events. Léon Cellier, the biographer of Fabre d'Olivet, exclaims as he writes of the period (the year 1802, to be exact): "What other time was ever more fertile in miracles?"¹ Beside these three men, there were others less influential in music, but not without interest to us. We have already seen Saint-Martin's *L'Esprit des choses* (1801), de Vismes's *Pasilogie* (1806), and Villoteau's *Recherches sur l'analogie de la musique avec les arts* (1807).

After the Renaissance, when it was longer possible for a person to know all that was to be known, the aspirant to universal knowledge had the choice of shutting himself up in a single discipline and making that his universe, or else finding a standpoint from which universal knowledge could be, if not assimilated, at least situated. In the latter case, which is without exception that of our authors, a means has to be found to make of the intellect a skeleton key that can open the doors of every discipline. Obviously such a person cannot pass through all the doors: he studies the principles of every discipline, leaving the details to specialists. All theories of correspondence, all analogies and syntheses of the arts come from this "transdisciplinary" mentality, whether or not they lead to any practical result.

Most of our philosophers had no ambition to paint pictures or to be professional architects or musicians. It was more important to them to understand and explain the anatomy of color, the significance of geometrical forms

and proportions, and the origin of the scale: the "principles" of the arts of which we will hear so much. The same kind of ambition leads to visions of universal history, which does not concern itself with the dates and battles of exoteric chronicles, but with the broader currents and cycles of evolution and degeneration. This accounts for the obsession with ancient civilizations, often imagined as possessing the wisdom to which the writer aspires. The "Grand Tour" is no longer so exciting, because the world is now bigger than Europe alone. Instead, the philosopher travels in the imagination to an ancient Egypt and China, even to an Atlantis, that may never have existed. He can no longer believe that everything worthwhile on earth is to be found in the modern West. It is hardly necessary to point out that this attitude is coeval with the era of colonial expansion.

As for the applied sciences, few of our illuminates had the specialized knowledge needed to practice them. Wronski alone was an inventor. Most illuminates mistrusted a science that followed Bacon's advice in concerning itself with phenomena, not with principles. In their atavistic return to deductive methods, they laid themselves wide open to charges of dilettantism. The carping critic might point out that to become a surgeon or an engineer requires years of hard study and attention to material details, whereas to become an illuminate, one only needs illumination! The most famous example, of course, is Goethe, with his anti-Newtonian theory of color and his vision of the *Urpflanze* offered as the true principles of optics and botany. From the point of view of the illuminate who aspires to universal knowledge, to be over-attentive to material details is a waste of time. It is more important to study the relations of the material world with the many other worlds in which he lives and moves and has his being. Why pay so much attention to a world which we only inhabit for a few decades, whereas our life continues eternally after death to this world, and perhaps even after the death of this world?

The search for universality runs risks that are just as serious as those of more limited fields, albeit of another order. A person often sets out on this search after some kind of spiritual revelation, or at least some profound psychological experience. Perhaps the illuminate has a glimpse in which the entire cosmos seems to explain itself. No one, he feels, can ever have had such a revelation of divine secrets! He believes himself invested with a sacred mission; he must tell his fellows about these unknown or forgotten truths, for their own good. Alas, the world does not want to know about them. Faced with such ingratitude, the illuminate turns inward and cultivates the precious seed that God or Providence has bestowed on him. He builds his revelation into a system that explains the cosmos and uncovers the hidden causes of things. Wrapped up in the fascinating developments of his intuition, he loses contact with other ways of thought, which in any case he rejects. Does he end by becoming a sage, or a paranoiac? We will find specimens of both.

The first of the great illuminates who will concern us in the following three

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chapters is Antoine Fabre d'Olivet (1767-1825). Born at Ganges to an upper middle-class Protestant family, he suffered in the Revolution from the loss of his family fortune and had to earn his living in administration, until he retired in 1810. Uncommitted to any sect or order, gifted in numerous ways, he has been called a Pythagorean. Certainly in view of his contribution to music, no one better deserves the title.

After a youth spent dabbling in politics, literature, and music, Fabre d'Olivet was becoming recognized by the end of the eighteenth century as a man of letters. He was one of the editors of the *Nouvelle Bibliothèque universelle des romans* (1800-1803); he condensed the works on universal history of Court de Gébelin and Delisle de Sales to readable proportions (*Lettres à Sophie sur l'histoire*, 2 vols., 1801). The search for his own linguistic roots in the Languedoc led him to edit a two-volume collection of Provençal poetry, *Le Troubadour: poésies occitaniques du XIIIe siècle* (1803, 1804).

Fabre d'Olivet had already published a couple of songs, including a drinking song, "O Mahomet! tu nous défends de boire un feu divin!" (1793), 2 and the music for the poems in his Troubadour novel *Azalaïs et le gentil Aimai* (Paris, 1799). The first appearance of a Platonic approach to music came in an article of 1797, "Des effets de la Révolution sur la musique."³ He explains that the instigators of the Revolution were well aware that in order to change the habits of the people, one must first change their music. Thus they demanded warlike songs "to electrify the soul." The artists fell into the snare, and created "a barbarous music" to order. But these works will pass, and melody will return, he says. Fabre d'Olivet is already ranging himself on the side of the melodists.

The "Hellenic Mode" and the Oratorio

In 1804 Fabre d'Olivet made several concerted efforts to gain himself a musical reputation. In the summer of that year, the Parisian publisher Momigny published a romance with piano accompaniment, *Souvenirs mélancholiques*,⁴ in which Fabre d'Olivet used an unfamiliar musical mode (see Appendix for the score). He called his innovation the "Hellenic mode" because it was an ancient Greek mode, known today as the Dorian in the diatonic genus: E', D, C, B, A, G, F, E.

Fabre d'Olivet also had the text of *Souvenirs mélancholiques* (his own poem) printed on August 4, 1804, with a short description of the Hellenic mode, in a little journal that appeared twice a week, *Correspondance des amateurs et professeurs de musique*, edited by "Cocatrix." On the basis of this song, one can only credit Fabre d'Olivet with a very minor gift as a composer. But it is his worth as a theorist and his contribution to speculative music that concern us here.

The next stage of his publicity campaign took the form of six letters on Greek music, "Observations sur la musique des Grecs et sur le mode

hellénique qui en est tiré," filling out a major part of the same journal from August 18 to September 5. The important thing in this digest, which Fabre d'Olivet admits to be borrowed from Abbe Barthélemy, Rousseau, Laborde, Vincenzo Galilei, Burette, and Marpurg, is the anticipation of ideas that he would expound later, when he had graduated from being a "simple littérateur" (his own phrase 5) to being an illuminate. Despite his activity as a composer, he does not fail to devalue modern music in comparison with ancient music, and to deny it the powers that the latter had. The reason he gives for this is the poverty of our system, which in place of the seven Greek modes has only two, the major and the minor, and in place of the three genera, diatonic, chromatic, and enharmonic, only derives its scales from the first. Modern music, suffering from such melodic poverty, compensates by excessive indulgence in harmony:

Melody is the part that really makes music what it is; it gives it its life and movement; it is from melody that music gets its physiognomy and character; by its means, music paints, touches, and conquers the senses. Harmony is nothing but a garment, more or less diaphanous, more or less suitable, which one throws over a beautiful body like gauze, silk, linen or wool, allowing one to discern its forms and outlines, disguising them, or altogether suppressing them. Melody without harmony is always something; harmony without melody is nothing. The one is a lovable nymph who pleases despite her nakedness; the other, a rich drapery that can only please to the degree that it is worn with grace. Lastly, nature gives only the first, while the second is a product of art.⁶

Fabre d'Olivet joins the theorists mentioned in the second chapter who believe that melody is much more fundamental than harmony. As for Rameau, the defender of harmony as the principle of music, Fabre d'Olivet shares (or borrows) Roussier's opinion: that Rameau confused effects with causes, and replaced a constant truth with a relative one.⁷ We shall see what Fabre d'Olivet thought these causes and principles to be, after he had joined the ranks of the initiates. At this early period, it is noteworthy that he already settles on the characteristics of the scale, and that he puts the tone F in first place. The following extract will serve as a manifesto for his opinions.

In our current modes, there is one tone which contains a melodious quality that causes the singer or player, whenever he comes to it in performance, to give it a more affected and gentle expression. Curiously enough, this tone preserves its melodic quality in the Hellenic mode, leading one to think that the quality is inherent in it, independently of its position in the scale or of the way it is harmonized. This tone is the fourth in the major mode, the sixth in the minor, and the second in the Hellenic: it is the tone F in the natural scale.

Whence comes this quality, of which there can be no doubt? The answer is that in the three natural modes, the F is devoid of harmony. In order to understand this, I need to explain what harmony is, and how a tone can be devoid of it.

Harmony is certainly not what it is believed to be, namely the faculty that tones have of engendering one another, for they have no such faculty. A tone separated from the instrument which produces it can never be anything but one and the same tone. If a vibrating string, bell, or trumpet makes several tones audible simultaneously, the phenomenon belongs only to the string, bell, or trumpet, which vibrate as a whole and in their several parts. If we hear the octave, the twelfth, and the seventeenth of the fundamental tone, it is because these tones, being harmonious, affect our ear, whereas the other tones that are vibrating equally but lack this property die away without affecting it.

Harmony is the faculty that certain tones have of uniting with each other, seeking each other, and setting each other in motion. It is to music what the tendency of aggregation is in chemistry. This

can be proved by a simple and well-known experiment. If one makes a string vibrate loudly in a place containing several musical instruments, all the strings of the other instruments will immediately vibrate if they are in harmony with the first string, i.e., if they are tuned to its fourth, fifth, or octave.

Of all tones, the fifth is the one containing the most of this type of harmonic energy. Every tone which is not the true fifth of another tone of the mode, and which consequently does not vibrate, is devoid of harmony. As nothing interferes with its effects, and its original purity is not troubled by the resonance of any other tone, it loses none of its melody. It is pure, sweet, affective; it is what the F is in the natural scales of the three modes, for the F, as one can see, is not at all unsettled, supported by the B, of which it is only the diminished fifth.

From this conjecture, which I think a good one, we can draw a definite consequence: it is that the more a mode contains notes similar to that of the F, the more tender and melodious it will be. The major mode only contains one, in fourth position. The minor mode has two: an immutable one at the sixth and an accidental one at the fourth. The Hellenic mode has three: an immutable one at the second [F], and two accidental ones at the third [G] and the seventh [D].

This arrangement makes the Hellenic mode superior to the other two in its number of melodious notes. But the advantage of number would be little if the position of one of the notes did not add a new luster to it. The leading-tone is not below the tonic, as in the other two modes, but above it; and this note, from which the mode derives its character, is essentially melodious. As the neighbor of the tonic, separated only by a chromatic interval, it cannot fail to excite a more tender sensation, a more pathetic expression than the others.

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Man and one must repeat this truthman is naught but an instrument; his fibres resonate to the strings of the lyric instruments that attack and interrogate them. Make him listen to melodious tones, and his soul will incline to tenderness and soft passions. Strike his ear with the contrary sounds, and he will be transported by warlike ardor. The Hellenic mode is the most melodious of the three; the major, the one that contains most harmony. All the notes of the latter respond to their fifths, which arouse them, except one. If this note, F, were to vibrate as well, one would have a mode whose harmony would be perfect. But since melody would be entirely lacking in it, one could only make from it barbarous and wild songs. The listener, delivered up to such a mode, could not resist the terrifying impressions he would experience.⁸ This mode exists, and the Greeks knew it; but this is not the place to speak of it. The mode of conjunct tetrachords, where none of the fifths vibrate, and the one in which every fifth vibrates, are respectively too weak and too strong. They have to be excluded entirely from the musical system, or at least used rarely and as it were by permission.⁹

This long extract has served both to introduce Fabre d'Olivet's theory of the individual tones, and to explain why he thought his Hellenic mode superior. As to his practical musicianship, the readers of the *Correspondance* found on September 8, 1804, an excellent anonymous review of his Opus 1: *Trois quatuors faciles et agréables* for two flutes, viola, and cello, dedicated to their publisher Ignaz Joseph Pleyel. (I have not been able to locate a copy of this work.) But another correspondent was not so friendly. On September 29 a certain Constantin reproached him for borrowing his Hellenic mode from Charles Blainville (c.1711-c.1769), who had composed a Symphony in the same mode on E in 1751, calling it the "mixed mode." Fabre d'Olivet had nothing to fear from this suggestion of plagiarism, since in his first letter he had explained the differences between his use of this mode and Blainville's. Since he admitted that he did not know of the symphony in question, he probably learned of the "mixed mode" from Roussier's criticism of it in *Mémoire sur la musique des anciens*. Constantin and Fabre d'Olivet were both keen self-publicists, and their correspondence continued on October 3, 13, 20, and 31, November 24, and December 1. In his letter of October 1, Fabre d'Olivet touches on another disputable point: whether the Greeks know harmony. In this instance, his opinion owed nothing to Roussier; on the contrary, he seized the occasion to pay himself a fresh compliment:

What I think I can say is that if the Greeks had any harmony, it must not have been much different from the harmony of which I gave a slight idea in my letters on the Hellenic mode. Here is the proof of it. I took the Hymn to Apollo, that authentic fragment of Greek music; I translated the verses into French so as to preserve their rhythm and movement as

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far as I could; and after searching for a meter that would fit French prosody, I applied my own harmony to the Greek melody. If my harmony had been false, the song would have been destroyed, and I would have achieved nothing but a musical caricature similar to that of Monsieur Delaborde, when he tried to force the Hymn to Nemesis to squeeze into the middle of four parts in the major mode. But either my ear deceived me, or the musicians who performed this piece flattered me with a vain success, or else this divine melody found itself by no means uprooted, and took on with my modern clothing all the graces of youth. It was a sunrise that the Greek artist had wished to depict, and it was a sunrise that was heard. 10

Fabre d'Olivet deceived himself if he thought that he was resuscitating the ethos of the Greek modes, i.e., their moral and emotional significance. For he attributed to the Dorian mode the scale of C, and to the Lydian that of E (his Hellenic mode), whereas the correct attributions are the reverse. Consequently, when he thought that he was reflecting the tender qualities of his *Souvenirs mélancholiques* by using the "Lydian" mode from E' to E, he was actually using the diatonic Dorian mode, which the Greeks regarded as masculine and warlike.

In December 1804, Fabre d'Olivet prepared the climax of this campaign. The Consistorial Church of Saint-Louis-du-Louvre, the chief Protestant church of Paris, had commissioned from him the words and music of an oratorio for its service in commemoration of Napoleon's coronation as Emperor.¹¹ Later, in 1819, Fabre d'Olivet explained why he was obliged to flatter a man he came to consider as his mortal enemy: it was "to lull to sleep the dragon whose piercing eye watched my every movement."¹² The *Correspondance des amateurs et professeurs de musique* announced the coming event on December 22: the new oratorio would be given on Christmas Eve, and would contain several pieces in the Hellenic mode. Fabre d'Olivet must have had good connections both in musical and Protestant circles to have obtained this important commission. The conductor of the oratorio was Rochefort, Deputy Director of the Imperial Academy, and he brought the Academy's orchestra with him. Fabre d'Olivet and Rochefort were old associates: they had collaborated on an opera, *Toulon soumis*, with libretto by Fabre d'Olivet and music by Rochefort, given at the Paris Opera in 1794. As for Fabre d'Olivet's Protestant connections, his biographer Leon Cellier conjectures that after a period of skepticism and Deism, typical of his generation, he was feeling drawn again to his religious roots.¹³

The great day of Fabre d'Olivet the composer came and went; but he was not the man to let it pass into oblivion. The Editor of the *Correspondance* must have been well and truly under his thumb, for on January 5, 1805, he published some congratulatory verses addressed to the soloist, Madame Armand, for her interpretation of a hymn in the Hellenic mode in the oratorio.

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On January 19, Fabre d'Olivet published a letter in which he complimented Rochefort and the Academy's orchestra for their interpretation of the work. The *Correspondance* for January 26 carried another poem by him, flattering Pleyel on the appearance of his (Pleyel's) new Quartets. On February 2, an "amateur" wrote a long letter to the reviewer of the oratorio, berating him for having said nothing about the poetry of the work, which he took the opportunity of quoting at length. (Far be it from us to suspect this "amateur" of being the poet himself!) One feels a certain sympathy for another amateur who wrote on February 9 to state that this was after all a journal of music, not of poetry, and to attack the Hellenic mode once again. He

accused Fabre d'Olivet of having written his song and other Hellenic movements in the scale of C, beginning on E. This criticism was the same as Roussier had made of Blainville's mixed mode. Replying to it on February 16 and 23 gave Fabre d'Olivet the chance to explain further his use of it, with musical examples. But he would not agree to his critic's demand to look at the score. Neither can I make any musical evaluation of this elusive work until the score reappears (see note 11).

After this final letter, the *Correspondance des amateurs et professeurs de musique* ceased to appear, perhaps because of the boredom that all these letters had caused to its subscribers. One would like to know how much of the affair of the Hellenic mode was shared with Marie Warin, whom Fabre d'Olivet married on March 13, 1805. Their marriage was blessed by Pastor Rabaut Pommier at the Consistorial Church, after which Fabre d'Olivet seems to have entered a period of complete silence.

Several lessons can be drawn from this affair of the Hellenic mode. First, it reveals Fabre d'Olivet as an egotist who did not blush to publicize himself through pseudo-erudition and sycophancy (e.g., the praise of Pleyel). One can already recognize the man who would claim to have a special relationship with the past, and to whom the secrets of higher knowledge have been revealed, in order that he, with his multiple talents, may transmit them to mend the arts and morals of a decadent age. If his oratorio and his approaches to Pleyel had succeeded in establishing him as a composer, there is little doubt that he would have pursued his ambition of recreating the effects of ancient music.

The combination of a theoretical work with a practical example, as in the case of the letters on Greek music and the oratorio, is a pattern that recurs several times in Fabre d'Olivet's many-sided oeuvre. His first researches on Provençal poetry were accompanied by the writing of new poems in the *langue d'oc*, and by the historical novel of the Troubadour era, *Azalaïs et le gentil Aïmar*. The principles of *La Langue hébraïque restituée* were applied in the curing of deaf-mutes. His theories on the possibility of writing unrhymed French verse were illustrated by his translation of the *Golden Verses of Pythagoras* into what he called "Eumolpic verses." Finally, the metaphysical principles that permeated all his work after these years of retreat were

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realized in the plan and rituals of the Order that he founded towards the end of his life, "True Masonry and Celestial Culture."

The Curing of the Deaf-Mutes

Fabre d'Olivet emerged from his retreat in 1811 with his masterpiece: the explanation of the Hebrew language and of the meaning of the Book of Genesis. He was anxious to publish it, but could not afford the cost. I will let him describe the events that ensued:

One of my friends, M. R[abaut] P[ommier], then one of the pastors of the Reformed Church of Paris, charged himself with my introduction to M. de Montalivet, who held the portfolio. He had explained to him in a few words the object of my visit. This minister, struck by the immensity of my work, received me with much courtesy. He listened to what I told him about the Hebrew language and the possibility of its restitution, and perfectly understood the great advantage to the physical and moral sciences of having a new translation of the cosmogony of Moses, made according to unimpeachable grammatical principles and more fitting to the enlightenment of our century. I had several long meetings with him, at one of which I read him the introductory dissertation that stands at the head of my work. He seemed ready to print the whole work at Government expense, and I could anticipate the moment when I would have a considerable advantage over Napoleon. But unfortunately M. de Montalivet had more sagacity than power; his reflections destroyed the work of his mind; he feared, with some reason, that Napoleon would be angry at him for having taken such a decision upon himself; and when I saw him again, he would offer to print half of my work: the grammar and vocabulary of roots, leaving aside the translation of Moses' cosmogony with its notes. But this was not what I wanted. The danger would be the same

for me, without any advantage to compensate for it. Thus this minister found me refusing his offer with a spontaneity and a firmness to which he was unaccustomed, and which annoyed him. We had a fairly lively discussion, out of which flew the first thought that led me to develop the sense of hearing in someone deaf-mute from birth; and this is how it happened:

Whilst I was speaking fervently about the sublime beauties contained in the Sepher [i.e., the Book of Genesis], and saying to M. de Montalivet what I have since published, namely that this ancient book, issuing complete from the sanctuaries of Thebes and Memphis, contains all the secrets of the Egyptian priesthood and develops in a few pages the principles of all the sciences, the Minister stopped me brusquely and said: "M. d'Olivet, if what you propose so forcibly is true, if the principles of all the sciences are in the Sepher, you must know them, since you

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boast of having restored the language of this sacred book, and you have translated ten chapters of it. Very well, then: show me just one of these principles, and I will have your book printed in its entirety.

Struck by this argument, and perhaps a little piqued in my turn by the kind of challenge I was thrown, I said to the Minister that I would do as he requested, and left.

There was at that time, in the Abbé Sicard's institution, a youth named Rodolph Grivel aged about fifteen, born in Aubonne in Switzerland, and deaf-mute from his birth. Since he was highly intelligent, this youth had made considerable progress in knowledge of sign-language during the six years he had passed with the Abbé Sicard, so that this able instructor had often taken pleasure in showing him at his public demonstrations. Rodolphe came from a family that was very distinguished in the canton of Vaud, and had relatives in Paris who were well-known in banking. By a singular coincidence, his mother, who had remained a widow and had only this one child, had decided to come to Paris in order to be closer to him. Wishing to make use of her stay, she had accepted a position as under-mistress in the young ladies' boarding school which was jointly directed by my wife and Madame Servier. I had seen young Rodolphe several times visiting his mother, and had been as much moved by his natural disablement as by his happy disposition. In the situation in which I found myself, it seemed to me and it still seems to me that Providence was placing him in my way so as to give me the opportunity to respond victoriously to the challenge of Napoleon's Minister, through applying to this deaf-mute the principle of a science that I knew well, and certainly the one which, of all of them, is most clearly expressed in the ten first chapters of the Sepher, if one knows how to read them. Who would not have thought as I did? 14

Fabre d'Olivet never revealed his method of curing deaf-mutes. Leon Cellier, who has analyzed all the information available, suggests that he combined the introduction of natural substances into the ears with a sort of animal magnetism, or Mesmerism.¹⁵ In any case, all the persons involved were convinced that the cure had succeeded, and the affair was widely publicized. Fabre d'Olivet continues his narrative:

Everything seemed to go in accordance with my wishes, and I did not doubt that my book would soon be in print. My error did not last long.

M. R[abaut] P[ommier], who had gone triumphantly to see the Minister of the Interior in order to give him an account of this event and remind him of his promise, returned downcast. "M. Fabre d'Olivet is lost," the Minister had said to him, approaching with an air of chagrin. "The Emperor has seen the article on the subject in the *Journal de Paris*, and has shown great anger. There is no more to be done."¹⁶

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There was no hope of publishing *La Langue hébraïque restituée* so long as the Emperor remained in power. Why Napoleon should have concerned himself with a man practicing medicine without a licence for that is all it came to is impossible to say. But in Fabre d'Olivet's mind, this check took on the proportions of a cosmic battle between himself and the tyrant, and it was probably at this time that he began to develop his grandiose vision of the invisible forces at work behind the scenes of history.

Language, tone, and music, three inseparable sisters, exercised a particular fascination on Fabre d'Olivet throughout his life. Perhaps it was this fascination that determined the strange form of his reply to the Minister's challenge. In his *Notions sur le sens de l'ouïe* (Paris, 1811; 2nd ed., Montpellier, 1819), he expounds several interesting theories, notably that of the distinction between the pure faculty of perceiving sound, for which he used the archaic word *ouïr*; and the faculty of understanding what is heard, aptly expressed by the word *entendre* which means both to hear and to understand.

Those who witnessed the curing of the deaf-mutes but lacked any psychological or philosophical perspective could not understand why the young people could not immediately understand what was said to them. Of course, they had to begin like newborn babes. Rodolphe Grivel, the most intelligent and best documented of the several cures, was alone in being able to analyze his sensations. As he had already been taught to read and write, he kept a journal during his convalescence. In a letter of April 18, 1811, he describes experiences with sound and music that are of value not only for Fabre d'Olivet's conclusions on the meanings of the terms "high" and "low," but for the intimate picture they give of the illuminate tapping walls and teacups, playing the violin (we know that he also played the piano and the cello or bass), and for the presence of a glass harmonica. That was the favorite instrument of the literary Romantics, although with the exception of Mozart the great composers neglected it entirely. It was also the instrument that accompanied Mesmer's seances. The mysterious tones of these musical glasses produced sensations that no one has described better than Rodolphe, as one can see from this letter from Fabre d'Olivet to Ferrier, written April 18, 1812:

Here, Monsieur and good friend, is the continuation of what Rodolph wrote on the effect of different sounds: "I can hear the wallpaper of the salon better than the red cup which is struck with the little spoon; it surprises me. M. Fabre has told me that the sound of the cup is reverberant, that of the wall dull. The clock's sound is like that of the cup. M. Fabre has played the violin: he told me that the thick strings give the low tones, and the thin ones the high tones. I always find the low sounds more pleasant to my ears."

It is important to say that when I made this distinction to Rodolphe, he had great difficulty in understanding me. He could not conceive why we call "low" the sounds that seem to him loud, which he hears marvel-

ously well, and "high" the sounds which he can scarcely hear because of their thinness. If I had left him to his own ideas on this point, he would certainly have classed the musical scale according to the ancient Greeks' system, and like them called "descending" what we nowadays call "rising." As for the word "roughing," which this youth has coined and which I left in my last letter with scrupulous exactitude, he later gave me its explanation by replacing it further on with "scraping." The sound of silver, he told me, scrapes my throat uncomfortably; and he added that other sounds affected him sometimes in the stomach or heart region, sometimes at the top of his head, sometimes in his teeth, and sometimes throughout his whole body. Probably this is what happens to us, however accustomed we are to it, when we hear a saw being sharpened, marble polished, or the scraping of glass. The only thing of which he could not give me an idea, because he absolutely lacked the word to express it, was the effect he felt from the sounds of the harmonica. However, he tried to depict it by joining his hands above his head and bringing them round it in a circle, as if he were trying to draw a halo, or giving me to understand that he was as it were enveloped in a sonorous sphere. 17

Fabre d'Olivet compares Rodolphe's sensations and his difficulties of orientation in the sound-world to those of blind people who suddenly recover their sight: just as all objects seem to them to be in contact with their eyes, Rodolphe Grivel felt as if all sounds were coming from inside him. Fabre d'Olivet's analyses and observations show a degree of empathy and imaginative penetration of another person's world that would be rare in any period, but were utterly incomprehensible to the medical professionals of his time, still limited to traditional methods and almost medieval ways of thought. Fabre d'Olivet speaks thus of the complacency of materialistic science:

They think that they know the world, and they do not know themselves. With scales in hand, they weigh Saturn and its moons, and cannot calculate the life of a gnat. They create systems about the ebb and flow of the ocean, and do not know by what laws the sap rises in plants. They set up a mechanics of the universe, and do not notice the providential laws by which they themselves are sustained.¹⁸

Having studied medicine as an amateur, Fabre d'Olivet was not ignorant of the anatomy of the ear.¹⁹ He suggests that the parts of the ear correspond to the three different elements of hearing:

Sound, reflected in the temporal cavity, passes next into the vestibule of the labyrinth, and there divides and reflects itself anew so as to distribute

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itself there according to its nature. Here the second act of audition takes place. It would doubtless be difficult to support so novel a theory with factual proof, but fair and unprejudiced minds will easily feel its strength. Noise is distinct from tone; and, as I have strong reasons to believe, an articulate voice is distinguished from both of these. Noise passes into one of the ramps of the cochlea, and sets in vibration those fibers of the bony spiral blade that are in unison with it. Tone enters the opposite ramp and sets in motion the membranous fibers of this same blade that are in harmony with it; whereas the articulate voice, on the other hand, will put in motion unknown keys in the semicircular canals that are analogous to its articulations. Thus there takes place in different places the third act of audition, which thenceforth becomes a complete faculty.²⁰

Fabre d'Olivet mentions his patients' experiences and his own observations of the perceptual development of his son Dioclès, born in 1811 at the height of this affair, to support his theory that it is low-pitched noises that first become audible, then higher noises and tones, and finally language. "Thus the development of hearing in Rodolphe, aged 15 years, differed in no respect from that which I noticed in my son of 15 days. Both went from low to high, and from the inharmonious to the harmonious."²¹

Frustrated in the publication of *La Langue hébraïque restituée*, and wounded by the careless and ignorant discussion of his curing of the deafmutes in the newspapers, Fabre d'Olivet reoriented his mission. He turned now to the reform of French poetry. In 1813, Louis Bonaparte having read in Villoteau's *Recherches sur l'analogie de la musique avec les arts qui ont pour objet l'imitation du langage*²² a passage in praise of ancient poetry, offered a prize of one thousand francs for a competition in the class of French Language and Literature of the Imperial Institute of France. The question to be answered was: "What are the difficulties preventing the introduction of Greek and Latin rhythms into French poetry?" Fabre d'Olivet presented a *Dissertation sur le rythme et la prosodie des Anciens et des Modernes*, in which he defended unrhyming poetry.²³

In order to give more weight to his proposed reform, he also addressed to the Institute a *Discours sur l'essence et la forme de la poésie chez les principaux peuples de la Terre*, which served as introduction to his translation of the *Golden Verses of Pythagoras*.²⁴ This work served him not only as an opportunity to use his unrhymed "Eumolpic verses," but also for publishing the metaphysical doctrines that he had been developing over the preceding years. Here he expounded for the first time his system of the three powers (Providence, Will, Destiny), his vision of human perfectibility, and the transcendent unity of religions.

Besides the Sepher of Moses (i.e., the Book of Genesis) and the writings of Plato and other Pythagoreans, he listed these as the sources of theosophic truth:

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The doctrine of Krishnen is specially contained in the *Bhagwa-ghita*, that one of the Puranas most esteemed by the Brahmins. One finds Zoroaster's in the *Zend-Avesta*, and in the *Boun-Dehesh*. The Chinese [Confucius] have the *Tchun-Tsieou* of Kong-Tsee, a historical monument erected to the glory of Providence. In the *Poemander* and the *Asclepius* one has the ideas of Thaoth. The book of Synesius on Providence contains the dogmas of the Mysteries. Finally, one can consult in the course of the *Edda* the sublime discourse of Odin entitled *Havamál*. The basis of all these works is the same. 25

The edition of the *Golden Verses* makes almost no mention of the musical aspect of Pythagoreanism, doubtless because Fabre d'Olivet intended to treat that separately. After mentioning the secret books of the Ancients, he adds "I will expatiate on this subject, and on what the Ancients understood by the language of numbers."²⁶ Presumably he turned to this after the *Golden Verses* were published in 1813.

Music Explained as Science and Art

We come now to the properly esoteric aspect of Fabre d'Olivet's musical life. The difficulties of researching this are aggravated by the disappearance of the great work that he probably completed between the years 1813 and 1821. Here is his own description of this book, preserved in the correspondence of the prominent composer and publisher Ignaz Pleyel:²⁷

To Messieurs Pleyel and his eldest son.
Paris, the 13th August 1822.

Sirs,

Although it may well be possible that the letter you wrote me on the 11th of this month is only an honest excuse, or that you have other reasons unknown to me for not undertaking any risk, I will simply give you some new details on the subject of the offer I have made to you, so as to have no regrets in supposing that you have made nothing but a simple excuse.

The work I have proposed to you, Sirs, lies completely outside the common order of musical publications; to tell the truth, it is not a musical work at all, but a considerable literary and musical achievement, full of erudition and learned research, in which music is considered in theory and practice, as a science and as an art. We go back here to its constitutive principles, unknown up to now, and demonstrate them with evidence and vigor. We examine the musical systems of all peoples of the earth; we compare them, we unveil their common origin; we seek out the reason why music, which exercised so great an influence on the ancient

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nations, has lost its influence on modern nations. We say in this context things that are as extraordinary as they are interesting.

After having seen what music has been, we see what it is and what it might become. We dwell on the principles of the art, following them step by step from the simple existence of the scale, whose hidden and necessary cause we reveal for the first time, proceeding to the most complicated combinations of harmony, which we explain and whose rationale we demonstrate. Finally we give a sample of the original music of all peoples, both ancient and modern, submitting them to the

melodic and harmonic rules stated previously. Thus concludes this immense labor. The whole work consists of two quarto volumes. It should be published jointly by a bookseller and a publisher, in order to assure its success. I believed that you might have been this publisher, and I would have been flattered to see for a second time the name of Pleyel beside my own. The time of publication is immaterial. I would willingly wait until the month of January and even later if you gave me your word. One should also issue a prospectus, so as to obtain subscribers as much in the literary as in the musical field.

There, Sirs, is what I thought I should have told you; I will now make no further move for eight days.

I have the honor to be, with sincere consideration,

Your devoted servant,
Fabre d'Olivet.

Pleyel did not have the confidence to invest in this unusual-sounding work, nor did Fabre d'Olivet have the money to publish it at his own expense. In 1822 he was in the process of separating from his wife, who had long been the principal support of the family. Upon the sudden death of the author, the manuscript passed to Dr. J. Gilbert, his friend and the surrogate tutor of his three children. 28 After Gilbert's death in 1841, we read that Fabre d'Olivet's heirs have entrusted it to the Escudier Brothers, editors of the journal *La France musicale*, "with permission to extract from it all that may suit the readers." 29 The Escudiers chose fifteen articles, which appeared in the journal from 1842 to 1844, and borrowed several further extracts to include (without attribution) in later numbers of the journal and in their *Dictionnaire de musique théorique et historique* (1844 and later editions). These fragments were gathered together and republished by René Philipon in 1896, and, with additions, by Jean Pinasseau in 1928. The latter edition remains the definitive French one. 30 It is still possible, and greatly to be hoped for, that the complete manuscript may turn up some day.

La Musique expliquée comme science et comme art, even in its mutilated state, is one of the major monuments of speculative music. It is a work that belongs to the Neoplatonist and Neopythagorean traditions, for which the

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essentials of music reside in its principles, rather than in the vicissitudes of musical practice which is regarded as its wayward child. In this tradition it seems almost obligatory to deplore the present state of music and to praise its more or less ancient states. For Plato, the ideal music was that of Egypt. For Fabre d'Olivet, too, the principles of music are to be found in the pre-Classical civilizations of Egypt and China, although even these are not their originators.

Now it is time to specify these "principles" whose praises Fabre d'Olivet has been singing, even though he never explains them himself in the surviving fragments.

The basis of his system is dualism. In his *Histoire philosophique du genre humain*, Fabre d'Olivet writes of a Universal Empire of mythical antiquity whose religion was founded on the Divine Unity and whose sciences on a single Principle. "But the time came," he says, "after a longer or shorter period, that the one of the Sovereign Pontiffs, examining the musical system of Bharata which was thought to be founded on a single principle like all the rest, noticed that it was not the case, and that it was necessary to admit two principles in the generation of tones." 31 In the fantasy of prehistoric civilization imagined by Fabre d'Olivet, this discovery of the duality within the musical system was one of the most serious events of history, for it gave birth to a general development of dualisms in science, philosophy, and religion, leading to schisms and eventually to the fall of the Universal Empire. This must be the most momentous consequence ever attributed to speculative music!

What the Sovereign Pontiff discovered was evidently the possibility of constructing the diatonic scale not only by taking seven successive ascending fifths (or descending fourths):

F C G D A E B

but also by beginning with the last tone, B, and taking seven descending fifths (or ascending fourths):

B E A D G C F

The reader will recognize the "triple progression" of Roussier, and the principle of generating the diatonic scale by a series of fifths. Roussier had insisted that this progression be taken only downwards, because it stands for the multiplication of string-lengths. Fabre d'Olivet has a more subtle approach. Having no particular attachment to the triple progression and its fifths, he can equally well see the series as consisting of fourths, going in the opposite direction. This ambiguity of up and down is characteristic of his system. He discussed it in the letter on Greek music of 1804, and returned to it in his remarks on Rodolphe Grivel's perceptions. Now the theme will find its apotheosis.

The question arises as to which note is the generator, if the scale is formed from a series of seven fourths or fifths. Is it F or B, and why should one be favored over the other? Fabre d'Olivet replies indirectly by proposing two

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different versions of the system: one, connected with cosmic developments, in his book of music; the other, associated with metaphysical symbolism, in the plan for his quasi-masonic sanctuary. In the latter he imagines the principles as two strings that are divided successively:

F, proceeding by divisions of $2/3$ and giving rising fifths:



B, proceeding by divisions of $3/4$ and giving rising fourths:



He points out three things concerning these string-divisions:

The first is that a string measured off in quarters to give the fourths B,E,A,D,G,C,F, cannot at the same time be measured in thirds to give the fifths F,C,G,D,A,E,B; hence two strings are needed to represent the two principles B and F.

The second observation is that these two strings, supposing them otherwise to be equal, will be unequal in length, since the F proceeding by fifths needs a greater distance to reach the B than the B needs in order to reach F by means of fourths.

Consequently, and this is the third and most important observation, supposing that these two strings are bent in an arc to represent the universal sphere, and applying to them the zodiacal measure 12, the two hemispheres will be far from equal, although they give respectively identical tones, because

the two strings, incommensurable with one another, enclose areas or spaces which, though one cannot measure one by the other nor ever express them in physical numbers, will nevertheless be in the relationship of the musical fourth to the fifth. This will serve to prove that the Universe is by no means contained, as the vulgar seem to think, in a perfect circle, but in a sort of oval, which the Orphics rightly depicted in the form of an egg, and that the individual spheres of the planets, conforming to those of the Universe, are not exactly circular but describe a more or less elongated ellipse, according to the portion of the harmonic string that serves them as measure. 32

The Orphic (and Hindu) symbolism of the World-Egg is assimilated here to the modern discovery of the elliptical orbits of the planets: a parallel that would have delighted Johannes Kepler, the discoverer of the latter. Actually the idea had already been given wide circulation by Volney in his best-selling *Ruines d'empires* (1791). 33 Still, it remained for Fabre d'Olivet to extend it to a real description of the cosmos.

Fabre d'Olivet's cosmology, as in the case of all our authors, is part and parcel of his musical system. In *La Musique expliquée*,³⁴ he presents an imaginary speech by one of the "wise Eumolpids," i.e., the initiates of the Orphic tradition. The Eumolpid speaks at length on geocentric and heliocentric cosmology, calling the first exoteric, the second esoteric and as such well known to the sages of Antiquity. Fabre d'Olivet relies on Roussier's *Mémoire* to demonstrate that the Ancients knew the true arrangement of the solar system. Although for Roussier the correspondence of planets, tones, and days of the week was merely a mnemonic aid used by the Egyptian initiates, in which they concealed the triple progression, for Fabre d'Olivet it masked a cosmological knowledge and confirmed the principles of music as he had rediscovered them:

One should recall that the Egyptians, having represented the planetary septenary by the fundamental string B and conceived its ascending development according to the progression by fourths, considered this progression as divine and spiritual, and gave to the progression by fifths the name of terrestrial and corporeal; they also preferred the diatonic order given by this string, all the more since it assigns to the planets the same order as they have in ethereal space, as follows:

Saturn	Jupiter	Mars	Sun	Venus	Mercury	Moon
B	C	D	E	F	G	A

It is because of the idea that the Egyptians had of the superiority of the Saturnian principle B over the Cyprian F, that they made its progression by fourths govern the seven days of the week, and its diatonic course the 24 hours of the day, as Dion Cassius says expressly in his Roman History.

Here is the order for the days of the week:

Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday
Saturn	Sun	Moon	Mars	Mercury	Jupiter	Venus
B	E	A	D	G	C	F ³⁴

The table of planetary hours follows, taken from Roussier, who had based it on information in Dion Cassius.³⁵ The first hour of each day is under the rulership of the planet of that day, and the succeeding 23 hours follow in the

order of the ascending scale. Saturday's hours begin B, C, D, E, etc.; Sunday's, C, D, E, F, etc. This, according to both theorists, is the true source of the seven diatonic modes.

Returning to the imaginary discourse of the Eumolpid, we learn that the Ancients' heliocentric cosmology was nothing like that of modern materialism. "The sun that we see is only a sensible image of the intelligible Sun, which from the center imparts movement to the Universe and fills it with light. Those of its rays that reach us illuminate us only thanks to a sort of circumferential mirror that corporifies them and adapts them to the feebleness of our organs." 36 The whole discourse blends Pythagorean ideas on the Central Fire and the Counter-Earth with the Neoplatonic doctrines (e.g., those of the Emperor Julian) of the physical and intelligible sun, and with the pre-Newtonian theories, held by Kepler and Galileo, of the planetary movements as being communicated by the sun. As far as music is concerned, the Eumolpid does not agree with all those theorists who tried to deduce the distances of the physical planets from the proportions of their tones. This would be to confuse two different planes, that of principles and that of matter:

For knowing from the first principle that there is the ratio of a fourth between Saturn and the Sun, and between the Sun and the Moon so that the Sun is the central and tonic point of the other two planets does not enable one to express in physical numbers the respective distances of these luminaries, their size and movement, because the musical ratio of a fourth can be given by strings infinitely varying in length, thickness, and vibrations, according to their inner constitution and the more or less homogeneous nature of their parts.³⁷

In other words, musical principles are invariably based on proportions, and not on such and such a string-length or fixed pitch. They are among those principles anterior to our concrete universe, whose dimensions are fixed.

This distinction is put very plainly in the translation of the first ten chapters of Genesis, which Fabre d'Olivet added to his study of the Hebrew language. The birth of the physical world came from the separation of the two "waters" of Creation, which are respectively the subtle and "rising" water of etheric space, and the dense and "falling" water that went to form the seas (again the theme of up and down). After this act of separation, what Fabre d'Olivet calls *LUI-les Dieux* ("HE-the-gods") placed visible lights in the etheric space, serving not only to illuminate the earth, but also to kindle the light of the intellect. The distinction is the same as has been made with regard to the sun: here it is the Hebrew word "star" that signifies, in Fabre d'Olivet's translation, not only the stars of astronomy but also "the virtual and fecundating faculties of the universe."³⁸

Behind the primordial separation are the two metaphysical principles well known to theosophers: the expansive and the contractive forces. In the same

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text, Fabre d'Olivet identifies them with what Parmenides called "etheric fire" and "night"; Heraclitus, "the upward way" and "the downward way"; Timaeus of Locris, "intelligence" and "necessity"; Empedocles, "love" and "hate"; Plato, "itself" and "that which is other than itself"; Descartes, "movement" and "resistance"; and perhaps Newton, "centrifugal force" and "centripetal force." 39 We will find them again in the final development of Fabre d'Olivet's musical system.

True Freemasonry and Celestial Agriculture

La Vraie Maçonnerie et la Céleste Culture is the name of the quasi-masonic order that Fabre d'Olivet founded towards the end of his life. Very little was known of it until 1945,⁴⁰ when the Freemason Iwan Cerf was examining archives in Paris in the hope of saving masonic documents that had been seized by the German Occupation. In a drawer of the German commander's desk, Cerf found the manuscript of this title, containing rituals, detailed descriptions of the sanctuary, Fabre d'Olivet's addresses to the members of the order, and a "Succinct exposition of the musical system." The latter ended with the enigmatic phrase: "B produced by F represents Love or the expansive Source; F produced by B represents Chaos or the compressive Force: the primordial principles of the Universe."⁴¹

These very principles are expressed symbolically on the two columns of the sanctuary. The northern one bears the name JACHIN written downwards in yellow, the sun, the number III, and the tone F in the treble clef. The southern column bears the name BOHOZ written upwards in purple, the moon, the number IV, and the tone B in the bass clef.⁴² By multiplying a string tuned to this F by the proportion $4/3$, one obtains the musical symbol of Love, the expansive force:



while by dividing a string tuned to B by $3/4$, one obtains the symbol of Chaos, the compressive force:



In the planet-tone correspondences given above, F is the tone of Venus, the goddess of Love, while B is assigned to the malefic planet Saturn, with its constricting ring. Fabre d'Olivet has expressed the principles of his whole cosmic system in the simple design of these columns. He died suddenly of a heart-attack ("apoplexy") a few months after founding this Order. There is no substance to the rumors of suicide or even murder that were circulated by later esotericists.⁴³

At the beginning of Chapter Two, I listed seven themes that appear in the Abbé Roussier's *Mémoire sur la musique des anciens*. Now I shall review them in the light of Fabre d'Olivet's contribution. The seven themes are: (1) The inferiority of the Moderns and of their music; (2) the superiority of the ancient nations, especially Egypt, and the degree to which the Greeks were indebted to them; (3) praise of Chinese civilization, and the proof that it gives of an ancient and universal tradition; (4) the correspondences of the planets with tones and the days of the week; (5) Pythagorean intonation founded on the powers of three as the true principle of the scale; (6) the evils of equal temperament; (7) the priority of melody over harmony, and of the voice over instruments.

Fabre d'Olivet had opinions on all these themes. As a composer, he had advice to offer to the young composers of his time, which go much further than the rather pedantic recommendations of Roussier. In a chapter of *La Musique expliquée* entitled "Definition of melody; how it is produced and modified," he underlines the importance of having melodies that are not just a pleasant series of notes, but "as the expression of a thought furnished directly or indirectly by poetry and rendered universal from its state of particularity by means of successive tones, whose authenticity, coordination, and length are determined by the laws of the musical system."⁴⁴ In this conception, a melody is the image, or the incarnation in sound, of a thought that comes from the intelligible world by means of poetic expression. The imitation of nature, the favorite theme of eighteenth-century estheticians, is valid only in the sense that the thing imitated "is certainly not, as the vulgar among artists imagine, the physical nature whose phenomena strike the senses, but that whose marvels manifest themselves to their intelligence."⁴⁵

Such melodies, he says, are to be found not only in the works of the great composers, but also in the songs of the people, in national anthems, and in the precious remnants of ancient music.⁴⁶ Should one believe, then, that music is a universal language that breaks the boundaries of space and time? Yes, in a sense, says Fabre d'Olivet; but music will remain vague and indeterminate without the help of poetry. "which fixes its ideas."⁴⁷ In the same way as Saint-Martin, Fabre d'Olivet leaned towards the Platonic esthetic, according to which the subject of the arts is the representation of the ideas of the intelligible world; but he could not

most faithful representative of these ideas: that status belonged to music in the service of poetry.

When Fabre d'Olivet speaks from a composer's point of view, he seems optimistic about modern music, even though he will never admit that the Moderns could attain to the marvelous effects or the moral influence that music had under the Ancients. It is when he discusses the causes for this incapacity that he shows his underlying pessimism. He believed that thanks to Zarlino and subsequent theorists, our musical system is rotten to the core:

Although [Zarlino] knew very well the legitimate proportions that the diatonic, chromatic, and enharmonic tones should follow, and although he admits that they are those given by nature and by science, by Pythagoras and Plato, he nonetheless creates, after Ptolemy, a series of wrong proportions and false tunings, in order, as he says, to conform with the progress of counterpoint which requires them. Thus according to him one cannot make harmony without violating the principles of harmony, nor form chords without mistuning the voice and instruments.[. . .]

Here, then, are the elements of our modern system according to the theory of Zarlino as generally adopted: of the seven diatonic tones, C,D,E,F,G,A,B, three are in tune: C,F,G; one, D, is either in or out of tune depending on whether one considers it as the fifth from G or the sixth from F; and three are completely out of tune: E,A,B.

These seven diatonic tones give fourteen chromatic ones, because each one can be altered with a sharp or a flat. Now these fourteen chromatic tones are all out of tune, without exception. As for the enharmonic tones, they do not exist. 48

Fabre d'Olivet contrasts with this sorry situation the rich system of the Ancients. By this term he did not mean the Greeks and Romans, but rather the Egyptians and the Chinese. More than that, his perspective on the past stretched beyond known history to Atlantis, of whose inhabitants "one cannot refuse to believe that they had attained the highest degree of the social state."⁴⁹ In Fabre d'Olivet's reconstruction of prehistory from I know not what source the universal empire of the Atlanteans followed that of Ram, whose center was in India. It was there that the great musical schism took place, as I have mentioned above. One branch of this schism, the religion devoted to the feminine principle, gave birth to Phoenician civilization. It was the Phoenicians who called the seven diatonic tones by the seven vowels of their alphabet, giving its first tone, F, the vowel A, and the last (in the series of fifths), B, the vowel OU: ancestors of the Alpha and Omega of the Greeks. "One may believe that it was as a natural consequence of this way of notating the two musical strings, assimilated to the two principles of the Universe, that was born the famous proverb put into the mouth of the Supreme Being to designate his omnipotence and immensity: "I AM THE ALPHA AND THE OMEGA."⁵⁰

To support this allegation, Fabre d'Olivet cites Demetrius Phalerius and the inscription at Miletus, according to which the Egyptians made the seven vowels correspond to the tones and the planets. ⁵¹

Although he had a high regard for the ancient Egyptians, Fabre d'Olivet considered that they owed everything they knew to these "Phoenicians." He evidently did not mean the historical people of this name, nor is his scenario of the past intended to replace the ancient history known to scholars: it is literally pre-historic. He follows the authority of Plato, when the latter says that the Egyptians had in their temples representations of the principles of the arts and sciences that were ten thousand years old, i.e., more than 12,000 years before Fabre d'Olivet's time. It was naturally in these temples that Orpheus, and later

Pythagoras, learned the principles of music which they brought back to Greece.

The debate over the anteriority of Egypt or China has no place in Fabre d'Olivet's historical scheme, because he derived both civilizations from a common source in the migrations that issued from the break-up of the Indian Empire. Both Egypt and China inherited the system that the Indians ascribed to "Bharata," a quasi-mythical author and inventor similar to Thoth or Hermes Trismegistus.

In China, the musical system was also fixed on the principle of F, called *koung*, which provided not only the basis of music but of all the measures, which remained unaltered in China for eight thousand years. Starting from this F, the Chinese system contained twelve terms:

F C G D A E B F[♯] C[♯] G[♯] D[♯] A[♯]

This was an incomplete system, missing the chromatic tones below F (the flats) and the enharmonic genus; but one which the Chinese wisely preferred to preserve, rather than ruin it as the Moderns have by imposing temperament on it.

We can see from these summaries that Fabre d'Olivet had inherited the essentials of his system and opinions from Roussier. His originality was to give them a metaphysical context. The idea of the primordial duality, common among illuminates, is perfectly expressed in his double version of the series of fifths. The tension of the tritone F-B reflects the opposition from which the universe is born. There is no end to the philosophical developments that might be drawn from this. If we cannot tell how Fabre d'Olivet developed them in his lost work on music, at least we have sufficient material to appreciate how he synthesized the historical approach, exemplified by Roussier, with a musical metaphysics in the spirit of Saint-Martin.

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Notes

1. Cellier 1953, 112.
2. Fabre d'Olivet 1793, 245. Copy in the Bibliotheca Philosophica Hermetica, Amsterdam (Pinasseau papers).
3. Fabre d'Olivet 1797.
4. "Romance mise en musique sur un mode nouveau appelé *Mode hellénique*." I am grateful to Antoine Faivre for obtaining a copy of this song from the Musik-bücherei der Hamburger öffentlichen Bücherhallen.
5. *Correspondance des professeurs et amateurs de musique* II/67 (30 Thermidor XII/August 18, 1804), 533.
6. *Correspondance*, 553f.
7. *Correspondance*, 554.
8. Later he would explain that the "terrible" mode is the one on G (*Correspondance*, October 1, 1804, 749).
9. *Correspondance* II/71 (14 Fructidor XII/September 2, 1804), 560-564.
10. *Correspondance* II/80 (11 Vendémiaire XII/October 8, 1804), 635f.

11. The score disappeared in the nineteenth century and was believed to be lost. It came to light in 1978 at the Bibliothèque de l'histoire du protestantisme, in Paris (rue des Saints-Pères). C. Passet and G. Tappa published three not very revealing pages of it in facsimile, with a short notice: "Découverte de la partition musicale originale de l'Oratorio," *Bélisane* 2 (1978), 112-116. Persistent searches by myself and the librarians of the Bibliothèque de l'histoire du protestantisme during 1985 and 1986 failed to find the score, which appears to be lost once again.

12. Fabre d'Olivet 1819, 15.

13. Cellier 1953, 118.

14. Fabre d'Olivet 1819, 212-215.

15. Cellier 1953, 162ff. The Fabre d'Olivet file in the Bibliothèque de l'histoire du protestantisme (Ms. 133 and 133B) has a manuscript notebook dated June 16-26, 1808, not in Fabre d'Olivet's hand, which describes experiments in magnetism, or, as we would say, hypnotism.

16. Fabre d'Olivet 1819, 28.

17. Fabre d'Olivet 1819, 79f.

18. Fabre d'Olivet 1819, 51f.

19. He may have learned of this from Roger 1803, which treats the anatomy of the ear and the "marvels" of music, the latter in a strictly exoteric sense.

20. Fabre d'Olivet 1819, 90.

21. Fabre d'Olivet 1819, 126f.

22. Villoteau's work (see Chapter Two) was also dedicated to Louis Bonaparte. Juden 1971, 303n, suggests a causal relation between Villoteau's work and the competition.

23. For the text of this dissertation, see *Revue d'histoire littéraire de la France*, 1924,

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261-293 and 457-482; reprinted with commentary in *Miscellanea Fabre d'Olivet* V-VIII (Nice: Bélisane, 1982).

24. Fabre d'Olivet 1813.

25. Fabre d'Olivet 1813, 233n.

26. Fabre d'Olivet 1813, 199.

27. Weckerlin 1877, 316f.

28. Cellier 1953, 217n.

29. *La France musicale*, September 25, 1842.

30. Fabre d'Olivet 1928; English translation, Fabre d'Olivet 1988.

31. Fabre d'Olivet 1979, I, 46.

32. Fabre d'Olivet 1928, 63f.
33. Volney cites Nicholas Fréret in *Mémoires de l'Académie des inscriptions*, vol. 25, but I have not been able to find any such mention there.
34. Fabre d'Olivet 1928, 70f.
35. Roussier 1770, 77ff.
36. Fabre d'Olivet 1928, 66.
37. Fabre d'Olivet 1928, 67.
38. Fabre d'Olivet 1815-16, II, 47.
39. Fabre d'Olivet 1815-16, II, 40.
40. Fabre d'Olivet 1973, 13f.
41. Fabre d'Olivet 1973, 71.
42. Fabre d'Olivet 1973, 40, 50.
43. Léon Cellier wrote to Jean Pinasseau, May 10, 1948: "J'ai reçu une longue lettre de René Guénon: d'après lui, F. d'O. ne se serait pas suicidé; il aurait été assassiné?!" Letter in the *Bibliotheca Philosophica Hermetica*, Amsterdam (Pinasseau papers).
44. Fabre d'Olivet 1928, 100.
45. Fabre d'Olivet 1928, 103.
46. Fabre d'Olivet 1928, 108.
47. Fabre d'Olivet 1928, 109.
48. Fabre d'Olivet 1928, 40-42.
49. Fabre d'Olivet 1979, I, 246.
50. Fabre d'Olivet 1928, 124.
51. See Godwin 1991, 29-30.

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Charles Fourier

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Fourier and the Fourierists

Charles Fourier (1772-1837) was one of those visionaries to whom a whole cosmos has been revealed, and who feel compelled to spend their lives persuading mankind that their vision was truth itself. Theirs is a glorious destiny, but a hard one. Fourier spent his life awaiting the messenger who never came: the benefactor who would know that here was "the one and only man to have followed the instructions of Jesus Christ ['Seek and ye shall find']. I have sought and I have found!"¹ Such a benefactor, by contributing his modest fortune, would set in motion the reformation of the entire planet.

Reformation was the order of the day, but no one's ambitions aimed higher than those of Fourier. He realized that it was not merely the well-being of the human race that was at stake, nor even the ecology of the planet. The game was bigger still: if a single community were to be founded according to his principles, he was certain that our earth would soon become temperate and fertile from pole to pole, lose the obliquity of its axis, and welcome back the five glorious moons that are its lost children.

Fourier discovered his system in 1799, as he writes in the "Letter to the Grand Judge" dated from Lyon, 4 Nivose, An XII (December 25, 1803).² He was working at that time as a commercial traveler in fabrics at Marseille. The first demonstration of his system was the *Théorie des quatre mouvements* of 1808, where his peculiar cosmos is revealed in its fullness. He would continue to expand and elaborate on it until his death, but he never questioned or altered its principles. It came to him as a revelation brought about, as Fourier tells us, by the introspective means of "absolutely doubting all prejudices, and absolutely distancing oneself from all known theories."³

It would be rash to undertake a complete summary of the philosophical system that resulted from this neo-Cartesian isolation. Among the dozen modern books on Fourier that explain it more or less successfully, the best is probably Simone Debout's introduction to her edition of the *Théorie des quatre mouvements*.⁴ Here it is sufficient to concentrate on the specifically musical elements, which will inevitably involve his cosmogony, metahistory, and psychology. I leave aside the socio-economic doctrines to which he owes his reputation today, as the pioneer of the commune movement and of socialism.

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In Fourier's cosmogony, all the heavenly bodies are in the process of evolution. Each one is born from the "interstellar aroma" in the form of a comet, then gradually takes up an orbit around some planet and solidifies. From the rank of moon, it is promoted to that of planet, then becomes a sun or star. Beyond that lie endless prospects of development into galaxies, universes, and still more magnificent things.

Humanity has a parallel destiny, which is nothing less than to govern these ever-evolving worlds. Each human soul returns to earth in a series of reincarnations, experiencing every variety of passion until the hour strikes for the end of this earth, after which the process of incarnations continues on other planets. Our earth and our humanity are very young ones, aged respectively about 6000 and 5500 years. After a few centuries of vegetable and animal evolution, man appeared on earth to enjoy an Edenic existence for 2000 years. But the infant human race could not overcome the least challenge, the first of which was overpopulation caused by its own fertility. This led to want, misery, rivalry, war: in short, to a state of savagery. In direct consequence of the misdeeds of mankind, the "aromas" of the earth became polluted. Four of its five moons departed for more congenial zones; the one left behind, called "Phoebe," was poisoned. The gravitational changes caused by its agony brought about the great Deluge on earth, after which a new and stunted population appeared to dwell on the ravaged planet.

At the same time, other beings analogous to humanity appeared on the other planets of the solar system and developed harmonious societies, which we could observe if our telescopes were strong enough. They would set an example to us, whose boasted "civilization" is nothing but the last of a series of social disasters. But Fourier's message is optimistic. The earth will become harmonious one day, like its sister planets, and will remain so for a period so long that these first unhappy millenia will seem, in retrospect, nothing more than its teething-troubles. When will this blessed time come? God has left the decision up to

us. As soon as humanity shows itself ready to receive the Laws of Attraction Fourier's great discovery and slough off the lies of established philosophy and religion, it will usher in a new age both for itself and for the groaning planet. Hence Fourier can announce:

We are going to treat a cosmogony that is more fruitful, more encompassing than the efforts made up to now, and more complimentary to the human race. It will teach us that human beings, treated as no more than worms and excluded from initiation into the laws of nature by philosophy and superstition, are on the contrary high and powerful persons, associates with God in the direction of the stars, and invested by him with a colossal influence over these enormous creatures. Philosophy, to subdue us, dwells on the smallness of our bodies; but by virtue of the law by which the extremes meet, this very lack is the gauge of our great power. By this, man is in contact with, and tuned in unison to the highest

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key which is God. Following this law, we necessarily participate in God's power and cooperate directly with him in the rule of the universe. 5

When Fourier digresses, as he does constantly, to describe the life of a community of the new, "Harmonian" epoch, one is suddenly transported to a magical world. In the phalansteries of the Fourierian future, everything, even labor, is a kind of musical game. We see troops of children galloping on miniature ponies, charged with maintaining public order and collecting the garbage in which children naturally delight. There are mock-battles, with cakes and flowers as weapons. Everyone, old and young, takes part in frequent parades, arranged meticulously in ranks according to significant numbers. Rival groups debate the virtues of different varieties of pears or plums. The planets rain down new animal and vegetable creations. Each person enjoys the amorous partner or partners to which mutual attraction joins them.

This harmonious existence will make the earth a Paradise for 72,000 years. Then old age will set in, as inevitable and as brief as its infancy, and the planet will die a natural death. Its soul, together with that of humanity, will continue to progress elsewhere.

All this is sketched out in the "Letter to the Grand Judge" under the explicit title of "Harmonie universelle." What I will now explain is the musical framework within which this whole vision of a new heaven and a new earth is set.

Cosmic Music

Fourier shows in his late and difficult work *Des séries mesurées*⁶ that he belongs firmly to the tradition of speculative music:

Mathematics and music are the principles of the measured harmonies known to us. They are also eminently the divine language: mathematics for justice [*justice*], music for accuracy [*justesse*]. Where would the systematic unity of the universe be if our passions were excluded from this measured harmony, which is in our eyes the seal of divine and material justice?⁷

Music, he says a little later on, "is a précis for mankind of the system of universal harmony."⁸ This was a natural conclusion for a philosopher who believed in a universe sustained at every level by analogies and affections, even passions. And it was precisely these musical elements that connected his system with traditional cosmology and gave it its few unarguable principles. Fourier may have been able to invent undiscovered planets and assign them imaginary moons, but he could not alter one iota of the musical system that he inherited.

The most salient points of the traditional system, explained by every commentator in his own way, are the phenomenon of octaves and their division

into twelve chromatic and seven diatonic tones. For millenia, these divisions have been aligned with the twelve invariant signs of the zodiac and the seven "Chaldean" or visible planets, which move against the background of those signs. In Western music, there is the additional feature of a major and a minor mode, which so many theorists have striven to explain logically. Lastly there is the phenomenon of harmony, or of simultaneous intervals to which the ear attributes indisputable qualities of concord and discord.

All this is present in Fourier, but in a very strange and almost looking-glass fashion. The twelveness of the chromatic tones does not correspond to the fixed stars, symbolically the top of the cosmic hierarchy, but to the lowest level, that of the moons. Fourier counts twenty-four moons in all, belonging to Jupiter, Saturn, Uranus, and (after the establishment of the harmonian state) Earth. These he assigns to the notes of a two-octave keyboard, one half major and the other minor:

Major octave

5 moons of the Earth	C [♯]	D [♯]	E [♯]	F [♯]	G [♯]	A [♯]	
7 moons of Saturn	C	D	E	F	G	A	B

Minor octave

4 moons of Jupiter		C [♯]	E	F [♯]		A	
8 moons of Uranus	C	D [♯]		F	G	G [♯]	A [♯] B

Fourier evidently intends to separate the keys of the two diatonic scales from the chromatic notes. This is plain enough in the major octave. In the minor octave, he uses eight diatonic tones because the seventh degree can be either raised or lowered, depending on the melodic direction. This leaves only four chromatic tones in the minor octave. If one accepts his tally of twenty-four moons, then the asymmetry of our major and minor scales explains itself: it is a perfect reflection of the distribution of moons among the luniferous planets.

These four "cardinal" planets are not assigned tones for themselves, but they serve as "pivots." There are in addition four non-luniferous planets: Venus, Mars, Proteus, and Sapho (the latter pair as yet undiscovered), which serve as "transitions." Fourier's system teems with "pivots," "transitions," "sub-pivots," "hearths," "ambiguities," and other elements that are to some degree exceptional, and thus not counted in the numbered or measured series. This gives to all his calculations an aura of uncertainty (of which he was well aware), corresponding perfectly to a social philosophy which has room for all kinds of exceptions and even perversions. ⁹ It is the opposite of those philosophical systems that claim to include every aspect of reality, classify it precisely, and leave nothing to chance, much less caprice. I find this flexibility one of the charms of Fourier's system, although in other respects he can be as dogmatic as anyone.

The double scale of 24 moons, plus the 4 cardinal planets as "pivots" and the 4 other planets as "ambiguities," total 32 heavenly bodies for which the Sun is the "great pivot." ¹⁰ Fourier finds an exact analogy in the human teeth: the four pivots are the canines, the ambiguities the wisdom teeth. When one laughs (and it is said that Fourier never did so), one shows one's two octaves of twelve teeth each, the major ones above, the minor below, all supported on the great pivot of the hyoid or tongue-bone. This serves him as an illustration of the fact that "the human body, in all its details, is the perfect image of the dispositions of harmony." ¹¹ Once again, he is thinking in traditional terms, this time of man as microcosm (compare the zodiacal man of medieval astrology, whose organs correspond to the twelve signs). But Fourier's methods and examples could not be more different.

In traditional astrology and astronomy, the seven planets (Sun, Moon, Mercury, Venus, Mars, Jupiter, Saturn) move against the background of the twelve signs of the zodiac. In Fourier's system the sun is outside the system as its great pivot; the moon is dead and dumb; Mercury is only an escaped moon of the earth, which will return after the establishment of harmony. He adds Herschel (the early name for Uranus), Sapho (which some of his followers identified with Neptune when it was discovered), and Proteus. There does not seem to be any common ground between the two systems. But this did not prevent Fourier from feeling the symbolic power of the number seven: it just dispensed him from having to include the known planets in it. According to him, there are twelve principal passions of which five are the five senses, the seven others being distributed over the keys of the major scale, arranged in ascending thirds:13

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<i>4 cardinal passions</i>	C Friendship
	E Love
	G Paternity
	B Ambition
<i>3 distributive passions</i>	D Cabalist
	F Butterfly
	A Composite

<i>Fourier's</i>				
<i>Key</i>	<i>Passion</i>	<i>planet</i>	<i>Color</i>	<i>Metal</i>
C	Friendship	Earth	Violet	Iron
E	Love	Uranus	Azure	Tin
G	Paternity	Jupiter	Yellow	Lead
B	Ambition	Saturn	Red	Copper
D	Cabalist		Indigo	Silver

F	Butterfly	Green	Platinum
A	Composite	Orange	Gold
C	Unityism	White	Mercury

The plan seems to be that the colors proceed in the order of the spectrum, along with the diatonic scale: C-violet, D-indigo, E-blue, F-green, G-yellow, A-orange, B-red, with the higher C of Unityism as the white light that results from the mixture of all the colors. It is a good example of the use of the octave-relationship to symbolize the transition to another level of being, which still possesses a close link (represented by the perfect concord C-C') with what it has transcended.

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Fourier does not always stop short at one or two octaves. He had no fear of large numbers, and found the octave series an apt illustration of a cosmology based on infinite expansion. In another scheme, he attributes the first key to an individual man, and its octave to the planet. Then at two octaves' distance he comes to the entire universe; at three, to a "bi-universe," and so on, octave after octave, to a "milli-universe." 14 Nor is this the end. In the same manuscript he offers a "polyversal scale" within a single octave:15

C	monoverse	a human couple
D	bi-verse	a planet
E	tri-verse	a universe
F	quatri-verse	1,000,000 universes
G	quinti-verse	10 ¹² universes
A	sexti-verse	10 ²⁴ universes
B	septi-verse	10 ⁴⁸ universes
C'	octi-verse	10 ⁹⁶ universes

There is something rather frivolous about these "astronomical" numbers, as if Fourier was indulging in a kind of cosmic doodling, which he surely cannot have believed to have any reality, much less any purpose beyond that of satisfying his mathematical imagination.16

Human Music

On a huge folding chart entitled *Théorie sociétaire de Charles Fourier: Gammes et échelles diverses*,¹⁷ the seven diatonic and twelve chromatic tones are shown in correspondence with all the forms of existence treated by Fourier in his *Traité d'association domestique agricole*.¹⁸ Later I will give the correspondences of the seven arts that constitute the "opera" in Fourier's utopia. There are, besides, scales of "Internal and external characters," "Bad tastes," "Sovereignities of Harmony," "Limbic plagues," "Natural rights," "Methods of human education," and "Octavian hyper-series in two dimensions." What strikes one is the resurgence of an ambition that one might have thought had disappeared with the Pansophists of the seventeenth century: to describe the whole world in musical terms, not only as a poetic metaphor (as many of the Romantics did), but with a pretension to objective accuracy and mathematical precision.

Any system of universal harmony must allow an important place to the intervals that give us the feelings of concord and discord. Fourier is an unashamed "discordian." He says that his principles are "strongly opposed to our philosophic systems which say that all men must be brothers, all united in love of morality and black broth. This general and impractical unity would be a monstrosity in Harmony, where unity can only be established by means of the regular shock of rivalry and the contrast of inequalities."19

It is exactly the musical doctrine that we have encountered in Saint-Mar-

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tin: that there can be no music without the creative tension of dissonance. As Fourier puts it a little later: "There is never equality in harmonic relations, for progression reigns throughout . . ." 20 In sum, "unity being the enemy of equality," 21 one should look for a social system that will give room to the three "distributive passions" which Fourier called the Composite, the Butterfly, and the Cabalist. Here is his summary of how they work in this instance: "for the Composite, [the chords] must operate both identically and in contrast . . . For the Butterfly, they must present alternative chances . . . For the Cabalist, they must form rival leagues against other terms in the series." 22 These are quite appropriate descriptions of the harmonic games played by composers of the Classic era.

In the next quotation the reader will have a taste of the strange Harmonian universe in which a classification of peaches serves to illustrate a harmonic law or is it the other way round?

Let us suppose by way of analogy a series cultivating 12 varieties of peaches or apricots, and adapting 12 groups and the pivotal to each variety, classing them by the neighborly progression of the fruits: the chords and discords of these groups will be in the same relation as those of the 13 tones of the scale, as in the following tables:

<i>Scale of notes</i>	C [♯]	D [♯]	F [♯]	G [♯]	A [♯]		
	C	D	E F	G	A	B	C'
<i>Scale</i>		2	4	7	9	11	
	1	3	5 6	8	10	12	[pivot]

The adjacent notes are not concordant in the musical scale, and it will be the same in this scale of 12 groups cultivating 12 graduated species. Group 5 will have no concord with groups 4 and 6. The varieties of fruits that cultivated by the latter will be too close [. . .] in several ways, their devotees will have pretensions that are incompatible with those of group 5, whose fruits are too much like theirs. They cannot agree on whose is best. Each of the 3 will obstinately hold out for its own peach, believing it to be the best or at least equal [. . .]

Consequently, in the exhibitions of fruits, which are frequent in Harmony, no group will want to place its basket at the interval of a tone or semitone, i.e., beside that of groups that are next in order of the scale. The series of baskets will be meshed and set out by chords of the third, fourth, fifth, sixth, and even the diminished seventh . . . 23

There is another example in which, taking only the diatonic chords, Fourier predicts the future evolution of the human eye. This is extracted from a large table which complicates the issue by listing also types of marriage, types of grapes, etc., which I here omit: 24

Chord	Type of eye
C	
(monotone)	Convergent eye = our own
C C (unison)	"Donkey" eye, which prevents donkeys and cats from falling into precipices. Masons develop it.
C D	Divergent or "chameleon" eye, looking in both horizontal directions
C D	Divergent eye, looking in both vertical directions
C E	"Co-nocturnal" eye, seeing in the night like a cat

C E	"Co-solar" like that of the cock which can look at the sun
C F	"Co-aerial" eye, which sees in the air as well as birds
C G	"Co-aromal" or "lenticular" eye, which sees the columns of aromas of the fluids by which communication takes place between the stars
C A	"Co-aquatic" eye, like that of a fish
C B_\flat	"Noctambulant" eye
C C'	"Diaphanic," "co-igneous," "ultra-etheric" eye

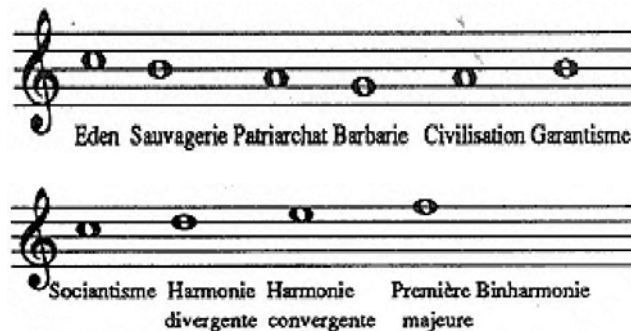
False chords

C B	Short-sighted eye
C C	Squinting, false eye

[The last interval should perhaps be C C^\sharp]

One thing that is plain from this peculiar table is the low opinion Fourier holds of man's present state. He was sure that man would in time develop powers that seem supernatural, of which he says we find a prefiguration in somnambulists and the subjects of animal magnetism. The human race is only at the first rung of the evolutionary ladder.

The same chart has another diatonic progression which illustrates the evolution of "social attractions." This is not as straightforward as the evolution of the eye, for it has to include the fall of man from his Edenic state, followed by a climb as far as the state of "convergent Harmony" that will be his future Paradise.



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Whatever the precise meaning of these terms is, the melody expresses plainly the idea that the Harmonian paradise will lead man to a level even higher than he enjoyed before his fall.

As far as practical music is concerned, Fourier enjoyed and studied it from his boyhood. He assures us that he was only nineteen when he invented a new system of musical writing that would allow one to do away with the eight different clefs in use at the time:



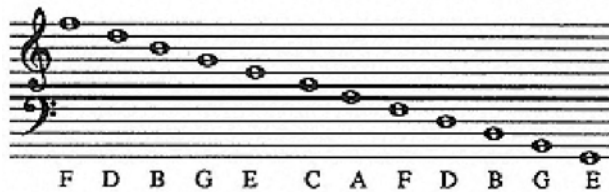
Always angry at the learned world, he sneers that "academic antipathy towards every useful innovation insists on keeping all the habits inimical to the arts, like the use of eight clefs in music, a method so

complicated that it repels nine out of ten students. This confusion comes from the evil custom of notating on eleven lines instead of on twelve, two of which should be intermediary and spaced between the top and bottom. Then one would need only one clef . . . " 25

He means that by replacing



by



the treble and bass staves would have the same note names on their lines and spaces.

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Fourier returns to this old dream of his at the end of his last book, proposing now a series of clefs covering all seven octaves: 26

His concern for the practical difficulties facing musicians was not re-



stricted to amateurs. Although he gives no sign of interest in the details of modern music, he mentions Joseph Haydn in his book of 1808, while suggesting a way in which the sciences and arts might be made to flourish in the world of the Phalansteries. One should fix the payment for a symphony at one sou, he says, so that, multiplied by the three million phalanges in the new world, it would give the composer a royalty of 150,000 livres "for a work that had only taken him perhaps a month." 27

It was the opera, much more than the symphony, that represented to Fourier the apogee of music, and of all

the arts:

It is at the Opera that all the faculties of the sciences and arts unite to give us the active picture of material unities, the image of the passional unities for which we are reserved. Thus the Opera will be a sacred function among the Harmonians, as the emblem of the general unity that God knows how to establish in the mechanism of the universe, and which should rule in the same way in the social unities of the globe.²⁸

Opera was for Fourier the experience of a measure that was the very one of the universe. In this extract from the chart *Gammes et échelles diverses*, the different "faculties" of opera make a kind of operatic scale, to which each art contributes as a manifestation of measure:

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Opera, assemblage of all the measured material chords

- C Song, or measured human Voice
- D Instruments, or measured artificial Tone
- E Poetry, or measured Word
- F Gesture, or measured Expression
- G Dance, or measured Walk
- A Gymnastics, or measured Movements
- B Painting, or measured Ornaments
- C' Participation (measured) of every age and sex;
Mechanics, measured geometric distribution

Already in 1836 we have a theory of opera as a *Gesamtkunstwerk*, and as the place of participation for the entire community: the great themes of Wagner's manifesto *Opera and Drama*. Unfortunately Fourier has little more to say on the subject, no doubt for want of technical knowledge. He was probably a frequent opera-goer, and a devotee of the theatrical spectacles called *féerie*. His favorite recreation is said to have been listening to the military bands in the Tuileries. All the same, he asserts that France is the country "where music is little cultivated, and where the ears of the whole nation are as poor as its mind."²⁹ He loved to describe spectacles and parades in which the arts would join with a new "knight errantry,"³⁰ in a combination recalling the festivals, tournaments, and ceremonial entries of the Renaissance:

Today we will see the Pink Teams which come from Persia, whose style is dramatic and lyrical; a few days later will come the Lilac Teams from Japan, whose style is poetic and literary [. . .]

I imagine the Pink Teams of Persia arriving at the outskirts of Paris: they consist of three hundred knights errant and three hundred knightesses errant, all chosen from the male and female Persians most skilled in the dramatic and lyrical art. The teams take up their station at the phalange of Saint-Cloud: they arrive there in great pomp, unfurling innumerable flags which have been given them on their travels, and on which are inscribed The Deeds and Acts of the Pink Teams of Persia [. . .]

They are all the best singers, dancers, and instrumentalists of Persia and they perform spectacles of indescribable excellence [. . .]

Meanwhile, the Hydrangea Teams of Mexico arrive, who are coming to compete with the Pink Teams of Persia, and the competition between the talents of the two troupes will be staged in the theaters of the phalanges of Saint-Cloud, Neuilly, Marly, etc. If the talents of the Pink Team are judged to be superior, they will receive from the locality a flag to be displayed among their trophies, on which will be read "Defeat of the Hydrangea Teams of Mexico at the Saint-Cloud Phalange."³¹

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I do not believe that anyone but Fourier was capable of imagining such a thing as this life in Harmony, agreeably filled with activities that blend elements of opera, circus, sport, and war-games.

The Fourierists

After Fourier's death in 1837, his disciples and there were many of them preferred to forget the musical part of his work, not out of embarrassment, as in the case of his libertinism and his astronomy, but because they had no relevance to the socialism that was their main concern. Fourier's harmonies had always been essentially speculative, serving as a taking-off point for imaginative journeys far beyond the everyday world. But that was the world in which the Fourierists lived and worked.

A small handful of disciples tried to complete the musical system that Fourier had taught with so much ambiguity and even contradiction. In the Fourierists' journal, *La Phalange*, a writer called "By" made a valiant attempt to reconcile Fourier's planetary system with that of science. Then he had second thoughts about what he had done and published a series of "errata," in which he defended Fourier's planetary scales.³² By gives the following series of tone-numbers for obtaining the notes of the diatonic scale by major (5/4) and minor (6/5) thirds:

C	E	G	B	D'	F'	A'	C''
24	30	36	45	54	64	80	96

On top of this he places a minor scale of one octave, culminating in C''' with the number 192. Then he observes that Bode's Law of planetary distances has exactly the same limiting number, if one takes the distance from the sun to Venus as 3:

Sun	Venus	Earth	Mars	Asteroids	Jupiter	Saturn	Uranus
	3	6	12	24	48	96	192

If on the other hand one takes Bode's Law in its usual form, beginning with the distance of Mercury from the sun as 4, the series ends with the number 196:

Sun	Mercury	Venus	Earth	Mars	Asteroids	Jupiter	Saturn	Uranus
	4	7	10	16	28	52	100	196

Well, By exclaims, the human skeleton has exactly 196 bones! This serves to show, he says, that studies of an analogical type are not mere speculation.

Another disciple, Hugh Doherty (1805/6-1886),³³ wrote a number of articles in *La Phalange* that sought to reconcile Fourierism with Christianity. In the eighth article,³⁴ he treats the "transcendent faculties" that Fourier prom-

ises for the human race once it is harmonized. (We saw an example in his evolution of the eye.) These faculties, says Doherty, are simply the higher octaves of those we already know. Imagine a keyboard of faculties like that of a piano or organ, but extending to twelve octaves, and imagine one of these for each of the twelve principal passions. The five lowest octaves of each keyboard represent the degrees of development of terrestrial existence, the four highest ones those of celestial development, and the three in between the transcendent faculties which a few privileged people enjoy even during their earthly existence,

serving as links between the visible and invisible worlds. What I find interesting about this jejune allegory is the power of the number 12 x 12 as the seal of completeness: the same number 144 that the Abbé Roussier (see page 12) persuaded the organ-builders to allow him as the limit of his musical system.

Doherty suggests a new series embracing three realms of existence: (1) musical instruments; (2) human souls; (3) globes in the solar system. For each member of the system one will find a graduated scale of increasing vibrations, the faster ones corresponding to the higher states. 35 In the case of planets, the rapid vibrations are their daily rotations, the slow ones their annual revolutions around the sun. The less highly evolved globes which are the moons, he says, do not differentiate between these, because their rotation takes place in the same period as their revolution around their planet. Again, I am interested less by whatever Doherty is trying to prove by this, than by the way his three series correspond to the traditional division of music, ever since Boethius classified it as *musica instrumentalis*, *musica humana*, and *musica mundana*. Instances such as these reinforce my impression that Fourier and his disciples, for all their rejection of "civilization," are best understood as part of the Hermetic tradition.

Fourierist harmony reaches its apogee in the works of Victor Hennequin, author of many orthodox phalansterian works. Like Doherty, he was concerned with building bridges to Catholicism until he became infatuated with spiritualism; he died clinically insane. His sad case gives us a point of view from which to evaluate Fourier himself, and by implication any other of the characters treated in this book whose sanity might be doubted. Hennequin and Fourier are opposites in this regard. Where Fourier seems crazy, as when he lectures at wearisome length about his "ambiguities," "hearths," "sub-pivots," and "cisluminaries," Hennequin is sane: his writings are extremely clear. But whereas Fourier, in the last analysis, drew his system from observation of society and from his own deductive powers, Hennequin believed himself to be inspired by the World-Soul.

The communications began on April 4, 1853. Having read, with his wife Octavie, about the spiritualist phenomena that had started in Hydesville, New York, in 1848, the couple decided to try and produce some themselves. It did not take them long to make a hat move on a table without physical contact. Soon the hat began to reply to their questions by raising

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itself and turning around. Then the World-Soul started to address Victor directly. He wrote a book under its dictation, entitled *Sauvons le genre humain* (Paris, 1853), and sent it with a dedication to Louis Napoleon, of whose penchant for spiritualism he was aware. The book is a summary of Fourierist doctrines, and a plea for the reorganization of society on such principles.

The book fell flat, but far from losing courage, Hennequin worked day and night on a new manifesto, much longer and less restrained in style, and deceptively called *La Religion* (Paris, 1854). In the opening pages it informs us that Charles Fourier is now enjoying a feminine existence in the seventh zone, in compensation for the sufferings of his lifetime, and waiting to re-appear on earth as the fifth "sub-god" after Manu, Moses, Jesus, and Mahomet. 36 But it was henceforth necessary for the earth itself to supply a sub-god as well. Who would it be?

It will be I.

I regret to have to say it. The superior clarity and the sovereign fecundity of the ideas to which I have lent my pen in writing *Sauvons le genre humain* should have spared me from having to draw attention to my mission by such an eccentric pronouncement . . . 37

This must have been disconcerting to Hennequin's former Fourierist allies, especially when they saw ahead of them a tome of six hundred pages. Nevertheless, *La Religion* deserves more attention than I can give it here. Not only is it bizarre and fantastic to the utmost degree; not only does it have moments of good sense, especially when it writes of Fourier; but it occupies the historical nexus between Fourier, on the one hand, and on the other the magical revival of Eliphas Lévi (*Dogme et Rituel de la haute magie*, 1856) and the

"spiritism" of Allan Kardec (*Le Livre des Esprits*, 1857). If we admit that Hennequin got it from his own head without relying on historical research, it bears witness to the fact that certain ideas were "in the air" at the time, especially those of reincarnation, cosmic devolution, occult sites, the synthesis of the arts, and the metaphysical superiority of music.

Hennequin was musically inclined. In his *Voyage en Angleterre et en Ecosse* (1835), written at eighteen, he made penetrating observations on English musical taste; and in *La Religion* he devotes a great number of pages to a thoughtful comparison of French and German opera. He also wrote a novelette in the style of Tieck, *La Clarinette de maître David*.³⁸ One might say that the poor man had clarinets on the brain, for when he came to describe how the World-Soul spoke to him, he drew an apparatus resembling an "astral clarinet" coming out of his head.³⁹

In *Sauvons le genre humain*, Hennequin completes the correspondences of tones and passions that Fourier had left incomplete. He specifies the chro-

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matic tones for the twelve sensitive passions, and gives a complete scale of twelve colors based on Fourier's suggestions: 40



Hennequin bases this system on the chronological development of the ideal human life. He exchanges the tones that Fourier gave to the Butterfly and composite passions, explaining that F is the bass of "the energetic and military chord" which seizes a man between the periods of his domination by Love (E) and Family (G). Then the Butterfly (A) falls between the Family (G) and Ambition (B), which are the twin poles of inner and outer life in the phalanstery. Such arrangements of passions are always rather arbitrary-sounding, but when Hennequin makes more general statements about them, one could be hearing any of the authorities on speculative music:

God has endowed sound-vibrations, which are the highest pleasure of the ear, with such complete harmonic properties that the study of music is enough to teach one, at least in their elements, the laws of Harmony in general: laws whose finest application is in organizing human societies.⁴¹

This illustrates the problematic nature of our entire subject. One can agree with these fine words, as a tribute to the intelligence behind the universe and to harmony as a key to it; but when one comes down from the Parnassian heights, one finds oneself mired at every step in personal systems that border on paranoid fantasies.

Fourier's Sources

Fourier revealed none of his sources. He was obsessed by plagiarism, fearing that someone would steal his secret of universal salvation a jealousy that extended even to the past. In the grumpy words of his own notebooks

"Too much glory to Newton. Kepler cleared the path; Leibniz helped. [. . .] Not like me, whom no one has helped, and who has had to do everything." 42 All the same, a philosophy based on passionate attraction and universal analogy cannot fail to recall a host of predecessors and contemporaries. Reading in the Book of Nature was the advice of Paracelsus another man suspicious of received authority. And what did he read there? Everywhere he found analogies and correspondences between the different levels of the cosmos. The magic book of Nature offered him innumerable occult links between earth and heaven. Fourier's beloved peaches and plums, too, arranged under the same pattern as the heavenly bodies, refer directly to this venerable doctrine of signatures (every herb, in Paracelsus, having its own star); while the fact of adding to them tone- and number-correspondances is simply an application of two other domains well known in the Hermetic and Neopythagorean traditions.

Fourier's "passionate attraction" is nothing other than a fresh variation on the old theme of magnetism: a theme that unites the material world (iron, loadstone, compass) with the psychological (love, hate) and the cosmic (gravitation). In the seventeenth century, experimenters such as William Gilbert and Athanasius Kircher saw in the attraction and repulsion of two magnets a manifestation of the two universal forces: a duality, or rather a polarity, to be found in almost every esoteric system. They rested on the authority of the ancient Pythagoreans and Platonists (Empedocles, Plotinus, Iamblichus, the *Corpus Hermeticum*) for whom Love, or the attractive tendency, unites not only beings on the same plane of existence but also explains the correspondences between different planes that are the basis of the occult sciences. These ideas had reappeared not long before Fourier in the systems of Swedenborg and Saint-Martin and, under a scientific guise, in Mesmer's animal magnetism.

The same period witnessed some discoveries in astronomy that could not fail to pique the speculative mind: Laplace's description of the planets as children born from the sun; the discovery by Herschel of a planet beyond Saturn, invisible to the naked eye; Bode's Law, which seemed to restore a kind of harmony to the spheres. In the seventeen-eighties, Restif de La Bretonne wrote about the life, evolution, and copulation of planets with almost Fourierist excitement and conviction. Fourier's seeming acceptance of the biblical chronology (which dated the creation of the world around 4000 BCE) separated him from the more adventurous scientists of his time, but he amply compensated with his visions of the future and of multiple universes.

All we know about Fourier's reading is that he owned a copy of Kepler's *Harmonia mundi*, and that he liked to read the newspapers in the public rooms of the Palais-Royal. There was no need to be particularly erudite in order to feel the impact of the great intellectual movements of his time, and to contribute to them. The huge synoptic charts of 1836, in which Fourier summarized his doctrines, were typical of a movement of popular education

that used this way of presentation for all manner of subjects, from philosophy to phrenology. And whatever his written sources were, it was sufficient that a single disciple, Just Muiron, came to him from Fabre d'Olivet, to give him access to theosophy and illuminism. Fourier paid so little attention to intellectual authorities and held civilization itself in such low esteem, that the question of his sources is no more than that of the soil from which his system grew, with all the spontaneity and unselfconsciousness of a plant.

1. Fourier 1835-36, II, 479.
2. Reprinted in Fourier 1967, 349-353.
3. Fourier 1967, 75.
4. Fourier 1967.
5. Fourier 1845, 340f.
6. Fourier 1845-46.
7. Fourier 1845-46, III, 6.
8. Fourier 1845-46, II, 357.
9. Fourier 1967, 249-311.
10. Fourier 1845-46, II, 383.
11. Fourier 1845-46, II, 380.
12. These do not correspond, as one might think, to the superimposed keyboards of a harpsichord or organ, but to the diatonic and chromatic keys, divided on two keyboards as shown.
13. Fourier 1846a, II, 145.
14. Fourier 1845, 341.
15. Fourier 1845, 345.
16. Fourier 1835-36, II, 529.
17. Lithographed at Nantes, 1836.
18. Entitled *Théorie de l'unité universelle* in the *Oeuvres complètes* of 1841.
19. Fourier 1845-46, II, 370.
20. Fourier 1845-46, II, 373.
21. Fourier 1845-46, II, 376.
22. Fourier 1845-46, II, 376.
23. Fourier 1845-46, II, 366f.
24. Fourier 1822, I, 394f.
25. Fourier 1848, 482.
26. Fourier 1835-36, II, 528ff.
27. Fourier 1967, 158f.
28. Fourier 1845-46, II, 357.

29. Fourier 1847, 32.
30. Fourier 1967, 159-162.
31. Fourier 1967, 161.
32. By, "Distribution du systeme planétaire," *La Phalange* IV (1846), 57ff., 182ff.
33. See Doherty's obituary in *L'Aurore*, February 1887, 158.
34. Doherty 1846, 374ff.
35. Doherty 1846, 378f.

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36. Hennequin 1854, 6.
37. Hennequin 1854, 36.
38. Published in Hennequin 1844, 445-449.
39. Hennequin 1854, 478, with illustrations.
40. Hennequin 1853, 74-76.
41. Hennequin 1854, 380.
42. Fourier 1848, 48; See Debout-Oleszkiewicz 1962.

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Hoené Wronski

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Chapter Five

Wronski and the Wronskians

The Polish philosopher Joseph-Marie-Hoené Wronski (1776-1853), creator of a body of work that even his disciples find "complex and tormented,"¹ is an even more enigmatic personality than Fourier or Fabre d'Olivet. The son of the architect to the last king of Poland, Hoené was trained for the army. He distinguished himself in 1794, during the defence of Warsaw against the Prussians and Russians, but after being taken prisoner by the latter he joined their army as a commissioned artillery officer. At twenty-one, his promising military career was over: he left Russia for Germany, where he enrolled as a student of philosophy, law, and mathematics. In 1800 we find him in Marseille, publishing his first writings on Kantian philosophy. I turn now to his biographer Zaleski:

The same year of 1803 brought him to the decisive event of his intellectual, indeed of his whole life. On August 15, Wronski discovered the Absolute! At least, that is what he believed. Was it a sudden access of truth in Plotinian ecstasy? Or the sudden conclusion of a long and fastidious reasoning? Perhaps both . . . Then came seven long years of hard and almost religious labor . . . Years of heroic solitude, poverty, and renunciation.²

These were almost the same years as Fabre d'Olivet's philosophical retreat, from his marriage in 1805 to the completion of *La Langue hébraïque restituée* in 1810, and Fourier's development from his first articles of 1803 to his *Théorie des quatre mouvements* of 1808. Wronski, too, tried to break out of his obscurity by submitting mathematical memoranda to the Académie des Sciences in Paris in 1810 and 1811, as Fabre d'Olivet did in 1812 and 1813 by submitting his discourses on literary criticism and French prosody to the Imperial Institute. None of these three illuminates achieved the recognition he hoped for, and, as a result, all of them contracted a lifelong contempt for academic authority.

Mathematicians today have heard of "Wronskian constants," without having any idea of the man who invented them. Nor does he receive any credit for inventing a prototype of the caterpillar treads used in

tanks, etc. Perhaps Wronski was born under an evil star, for he never drew any profit from his brilliant mind, and his every effort met with frustration or exasperating controversy. Some of this he brought upon himself. He accused the poet Mickiewicz of stealing the Messianic idea from him. He fulminated against the London Bureau of Longitude for not publicly recognizing a little correction he had sent them. He sued the banker Pierre Arson, who in a moment of enthusiasm for Wronski's philosophy had underwritten some of his publications and bought for a large sum "the knowledge of the Absolute." Throughout this trial, at which the judge, ironically enough, was the theosophical Baron Eckstein, Arson never denied the validity of Wronski's philosophy, only taking issue with the personality of its revealer.

Despite all these obstacles or perhaps because of them Wronski's writings became more and more ambitious, touching on questions of world politics and universal knowledge. After *Messianisme, union finale de la philosophie et de la religion* (1839), *Le Secret politique de Napoléon* (1840), and *Le Destin de la France, de l'Allemagne et de la Russie comme prolégomènes du Messianisme* (1843), came his philosophical summa, *La Réforme absolue du savoir humain* (3 vols., 1847). In his last years he found his most faithful disciple in Camille Durutte, who, however, did not prevent him from dying in abject poverty.

There is something quite lovable about the eccentric Fourier, and even about the more prickly personality of Fabre d'Olivet. But no one ever loved Wronski. It is a tribute to the quality of his thought that so many gifted people (some of whom we will meet below) found it worth while to pierce his deliberate obscurity and overlook his desperate egotism.

The Controversies with Troupenas, Fétis, and Azaïs

Wronski's writings on music were never published systematically in his lifetime and have to be extracted from those of his disciples. Their first echoes were heard in the midst of the controversies that filled the pages of the *Revue musicale* in the 1830s. These debates were sparked off by a series of nine letters⁴ from the philosopher Pierre-Hyacinthe Azaïs le jeune (1766-1845), father of the composer of the same name. Azaïs was the author of an idiosyncratic *Système du monde* (Paris, 1808-1811). Just like Castel, he believed that the universe was filled with "fluids" consisting of tiny globules and regulated by the double law of expansion and contraction. One of these fluids was the musical one, giving rise to acoustical phenomena as follows:

What we hear when an elastic body sounds at a distance from us is not the vibration of the air between it and our ears, but the vibration of the sonic globules that the body throws in a straight line towards us, which it takes into itself from the ambient air and from the elastic bodies on

which it rests. These globules penetrate our organ of hearing, carrying into it the isochronous vibration that they all share and which corresponds to that of the struck body. Thus, no matter how far we are from it, they give us the information of the precise pitch to which its mainspring is tuned.

5

This theory allows Azaïs to explain the difference between consonance and dissonance. Two tones an octave apart cause both x and $2x$ globules to reach our ears in the same time-period, which we find a satisfying experience in comparison to the chaotic arrival of globules thrown by dissonant tones. Thus we feel with our own senses the "universal harmony" that Plato and Pythagoras recognized as the basis of all science. Azaïs concludes by saying that the key to the universe is none other than harmonic expansion.⁶

This mechanistic theory of universal harmony called forth a reply through the agency of Eugène Troupenas (1799-1850). Troupenas had been a mathematics pupil of Wronski during one of the periods when the philosopher was obliged to teach. Wronski dissuaded the young man from joining the Ecole polytechnique (the school of military science), with the result that when Troupenas inherited his parents' fortune, he followed his own inclination and founded a music-publishing business.⁷ Between April and June, 1832, he and his teacher exchanged a number of letters. For a fee of 200 francs, Wronski agreed to write something on music. (Typically, much of their correspondence concerns Wronski's difficulty in getting paid.) Eventually Wronski gave Troupenas enough material for the latter to write a defence of Pythagoreanism in the *Revue musicale*.⁸ In this "Essai sur la théorie de la musique déduite du principe métaphysique sur lequel se fonde la réalité de cette science," Troupenas develops a theory of music based not on psychology or physics but purely on numbers. He only cites one mathematical work of Wronski's, but the philosopher's influence is evident from the title ("Essay on the theory of music deduced from the metaphysical principle on which the reality of this science is based") and from Troupenas's insistence that the principles of music exist *a priori*.

All of Wronski's philosophy is based on this *a priori*, which guarantees the possibility of discovering the principles of the universe's creation. It is the "Law of Creation," the ideal substratum of the universe that might be assimilated to the archetypal Forms of Plato. The necessary complement of this Law of Creation is the "Law of Progress" which controls the course of the world, strongly affected as it is by the activities of the human race. The Law of Creation manifests in every domain as a compound of universal principles; the Law of Progress controls the universal problems peculiar to each domain.

Schooled by Wronski, Troupenas attacked Azaïs's belief in universal analogy,⁹ particularly that of light with sound and of the spectrum with the scale. Troupenas spurned a philosophy

... that consisted *of only seeing truths that relate to the reality implied in our physical existence*. For I do not believe that there has been no progress in this science from *Bacon to Schelling*. Still, I am ready to admit any definition of music that one might wish, even considering it as [Leibniz, Azaïs, Rousseau, etc.] do, so long as one can deduce from this definition *a priori* not all the practical rules of the science of counterpoint but solely the CONSTRUCTION OF THE SCALE; not, however, the *scale of the Greeks*, like the author of the articles in the *Revue musicale* on a new theory of intervals; nor the *scale of nuances* reproduced in all the acoustical treatises from *Sauveur* to *Chladni*; nor the *Scottish scale* given by the experiment of the solar spectrum; still less the *scale of 12 equal semitones* of M. *Galin*, or of *12 unequal semitones* of M. the *Baron Blein*, finally not the *Swiss scale*, nor the *Chinese scale*, nor the *18 third-tones of the Arabs*; but the MAJOR DIATONIC SCALE, *C,D,E,F,G,A,B*, with its LEADING-TONE that *rises* to resolve onto the tonic and which *descends* when it finds its resolution on the *B-flat*. This is precisely the GREAT

PROBLEM of MODERN TONALITY. If M. *Azaïs* succeeds in completely resolving this question, then he can say that he has found THE PHILOSOPHY OF MUSIC. 10

The overemphatic style, to say nothing of the content, show that Troupenas was merely acting as mouthpiece for his master Wronski, who refused to learn anything from anyone else.

The editor of the *Revue musicale*, François Joseph Fétis (1784-1871) was a convinced Aristoxenian. In the course of conversations with Troupenas, he won over the amateur theorist to his point of view. "I finished," says Fétis, "by shattering his convictions and proving to him that an art which is eminently ideal can only have a psychological basis, and that this art can only be born from the reciprocal actions of sentiment and intelligence."11

Even Fétis was not proof against the illuminism of his time. His own theory of music, he tells us, came to him like a bolt of lightning while he was walking in the Bois de Boulogne. He was forced to sit down at the foot of a tree, where he remained for six hours in solitary meditation.12 Fétis met Wronski in 1838. He heard the philosopher give four lectures which did not convince him, but which prompted him to study the subject seriously. It was after this date that Fétis allowed the possibility of musical theories being constructed *a priori*.13

Camille Durutte, Wronski's Interpreter

Count Camille Durutte (1803-1881), the friend of Wronski's old age, preserved the only authentic fragments of the philosopher's writings on music theory. The son of a general ennobled by Napoleon, Durutte was an alumnus of the Ecole polytechnique and an artillery officer. He retired from the army in 1827 after his father's death and his marriage with another general's

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daughter, settling at Metz and devoting himself to music as a keen and respected amateur. He had first discovered Wronski in the the *Dictionnaire des sciences mathématiques* of A.S. de Montferrier. In 1849 he began a correspondence with the philosopher that ran to almost a hundred letters, and the following year the two men met. Durutte invited Wronski to stay at Metz for a year, and remained faithful to him until Wronski's death in 1853. He was his executor, helped his widow, and paid for the publication of his posthumous works. In 1855, at the head of Durutte's own treatise, *Esthétique musicale: Technie*, he placed an extract from one of Wronski's essays, *Philosophie absolue de la musique*. Later he added a letter that Wronski had written to him on January 3, 1850. These are the only primary sources available for studying Wronski's musical ideas. 14

The first of these sources is sufficient to show Wronski's clarity and originality. Music for him, as for Fabre d'Olivet, was as much a science as an art. What he lacked in musical experience was compensated by his mathematical and scientific background. His search for the principles of music began with the facts of acoustics. He was alone in his epoch to realize that the only reality of musical tone resides in the modification of time by rhythm. Tone vibrations, as he rightly observed, are nothing but a regular rhythm whose principles exist *a priori* in the set of whole numbers. He allowed that Pythagoras was the first to apply number to music but that, despite the progress made by music theory over the centuries, its real principles, both scientific and artistic, had remained opaque until the discovery of the Law of Creation by Wronski himself.

Wronski's philosophy always proceeds by way of dualities: Being/Knowledge, Principle/Problem, etc. In music, the basic duality lies in the meeting of acoustical principles with human taste. This creates the field of musical esthetics, one of the branches of the general Science of Beauty. The search for fundamentals poses the question: What acoustical principles correspond to our perception of musical beauty? Wronski hoped to answer this on the basis of pure reason. Here are his major definitions:

. . . MUSIC belongs to the reality-systems that depend on EMOTION, and specifically on the

system where the GOOD PRINCIPLE of the world manifests through emotion, i.e., the SUBJECTIVE FINALITY of creation constituting BEAUTY. We will later see, in particular, that the special beauty consisting of a simple ESTHETIC CAUSALITY or *sensible expression*, and manifesting through the EMBODIMENT OF INTELLIGENCE IN TONES, is the object of MUSIC. Such, then, following this absolute generation of the different reality-systems that make up the universe, is the PHILOSOPHICAL DEFINITION OF MUSIC, in which we discover immediately that the FIRST PRINCIPLE of this art, considered as a science, consists of the esthetic modifications of TIME, which alone constitutes *a priori* an embodiment of the spirit or intelligence forming the object of music.¹⁵

As for these "esthetic modifications of time," Wronski recognized that audible vibrations are contained by two limits, corresponding to the tones produced by organ pipes of 32 feet and 1/32 foot. As for what lies beyond these limits, he cites Euler's hypothesis: that vibrations shorter than 1/1024 second are those of light, so that where the sense of hearing gives out, that of sight begins. In the case of the lower limit, Wronski cites the experiment of his friend Troupenas, who, "examining the number of distinct tones that a skilled performer can produce at highest speed, and finding that one can scarcely distinguish more than 30 per second, was led to the conclusion that this was the limit of distinction through judgement, or rather through the sense of touch on which the intellect's distinction is based, and that distinction through the sense of hearing began here."¹⁶

In the twentieth century we are well aware that the vibrations of light are billions of times faster than those of tone. But Wronski's intuition of a continuum of vibrations is not really affected by this, nor is his conclusion: "By uniting these two considerations, one might suppose that our three primordial or cognitive sensestouch, hearing, and sight differ only in the different degrees of speed with which they can distinguish instantaneous durations of time." He adds that one might suppose, by analogy, "that the different colors depend only on the different durations of the ethereal vibrations that constitute them" which is in fact the case.

Coming to the esthetic question, Wronski begins by defining the field of the problem: "Since every pure sound is a musical tone or sound, there can be no music but in the systematic relationship of several conjunct sounds: a relation that thus constitutes a gamut or musical scale . . ." ¹⁷ These relationships are to be sought in their most principal form in tone itself: not in one particular pitch rather than another, but in any tone whatever that manifests the mechanical conditions of vibration. Now Wronski comes to the harmonic series: 1, 1/2, 1/3, 1/4, 1/5, 1/6 . . . , "This is the true system of tonality, i.e., the system of tones whose relationship, considered in the respective lengths of their vibrations, is esthetic, because these different vibrations are set up simultaneously to make possible isochronism in all vibrations . . ." ¹⁸

Wronski now takes the first and simplest of these intervals, the octave made from the 1:2 ratio. This interval is privileged in two ways: it is the first in the harmonic series, and it is the largest of all the infinite series of intervals. In order to create the true gamut or musical scale, we have to fill the space of the octave with intervals that form its aliquot parts, i.e., those which have an esthetic relationship and a rhythmic liaison with one another.¹⁹ This, in his words, is the "philosophical generation" and the "primitive creation of the idea of the gamut or musical scale."

I do not intend to set out all the systematic stages and the mathematical formulae that lead Wronski to the creation of a satisfying scale. They come down to two main points: (1) the law of aliquot parts, and (2) the limitations of aural perception. Wronski's decision to consider the intervals of the scale

as aliquot parts of the ratio 1:2 puts him at odds with Pythagorean doctrine and with most theorists.

Pythagoreanism requires that every interval should be expressible as the ratio of two rational numbers. But the aliquot parts of the octave are expressed as roots of 2, which makes them all irrational numbers. The best-known example is the modern equal-temperament system, in which all the semitones are in the ratio of 1 to the 12th root of 2.

Nevertheless, in his letter of 1850, Wronski rejects temperament as unnecessary. Despite the first principle of his *Philosophie absolue de la musique* (the law of aliquot parts), he suggests a scale entirely made from rational numbers. Here is the chromatic scale as he gives it, to which I have added the consequent ratios of the successive semitones:

C	C [♯]	D	D [♯]	E	F	F [♯]	G	G [♯]
1	16:17	8:9	72:85	4:5	3:4	12:17	2:3	32:51
16:17	17:18	81:85	17:18	15:16	16:17	17:18	16:17	17:18
A	A [♯]	B	C [♮]					
16:27	48:8	5 9:	17 1:2					
81:85	15:16	17:18						

I do not know how Wronski arrived at this tuning. In his letter to Durutte which was reproduced in the latter's book, he presents this scale as fact, determined entirely *a priori* following the "absolute philosophy" as applied to the fine arts. Two things in it deserve notice. First, none of these various sizes of semitones differs by more than a syntonic comma (80:81) from the semitones of equal temperament. In the extract from *Philosophie absolue de la musique*, Wronski states as an empirical principle that the 80:81 comma is the "esthetic limit" of human hearing, up to which tones can pass as being in unison. So a deviation of a comma did not trouble him, and this scale could pass as identical to equal temperament. He writes:

It so happens, also, that this absolute scale, as it was engendered *a priori* by the Law of Creation itself, immediately offers intervals that are equal or only differ by a *comma*. This dispenses music from any necessity for temperament of any kind, by taking as the mean of these equal intervals forming the semitone the ratio 16:17 (and not 15:16, as has been done hitherto). One of the first positive results of this will be that, through rejection of any temperament, instruments with fixed tones such as organs, pianos, etc., will henceforth be tuned to this absolute scale, so as to be able to render in the best possible way all the nuances of modern music, and especially those of its most recent advances. 20

Wronski noticed in these ratios an impressive coincidence, which later theorists would dwell on:

It so happens, entirely *a priori*, that the only musical numbers of the diatonic and hence of the chromatic scale are the prime numbers 1, 2, 3,

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5, 17, and that the numbers 7, 11, 13 are excluded from music. This gives us a beautiful analogy of this absolute generation of the scale with that of the circle, where, following Gauss's famous theorem, the same numbers are respectively admitted and excluded in the inscription of regular polygons. Gauss's theorem, as is well known, is:

$$x = 2n+1$$

x being the number of sides of the polygon, and n any whole number, so long as x is a prime number.

Values of x higher than 17 serve to generate the enharmonic scale and higher scales as yet unknown, which will perhaps never be known on our globe. 21

The contradictions in Wronski's tuning system come from his desire to keep as his principles both the numbers derived from Gauss's theorem and the division of the octave into aliquot parts. The two principles are mathematically irreconcilable, because whole numbers can never express irrational ones. This is why the Pythagoreans left the matter of irrational numbers (such as $\sqrt{2}$, the Golden Section, and the square root of 2) to geometry, and looked for musical ratios among significant or symbolic whole numbers. Their rivals the Aristoxenians, trusting only to the judgement of the human ear, welcomed equal and other temperaments. Wronski shares in both attitudes.

It was left to Count Durutte to demonstrate the foundation of the musical system on the Law of Creation. At the end of his book of 1855, he promises a second work in which he will explain "the classification of the harmonic system, and even the whole musical system, following the LAW OF CREATION itself."²² This "law" represents the evolution of the universe, and likewise that of every created system, through distinct stages, each of which participates in one way or another in a primordial duality, or else in the "central" resolution of this duality. In the purest form of the Law of Creation, the primordial duality comprises the two elements "Being" and "Knowing," both issuing forth from the element "Neuter." This is where Durutte finds an explanation of the scale:

Applied to *musical sounds* or *tones*, the LAW OF CREATION discovers as *Element-neutral* the D, around which are ranged at various distances and alternatively on the right and the left the *Element-being* G and the *Element-knowing* A. Then the *Universal-being* C, and the *Universal-knowing* E; and finally, as *transitive* elements, the *Transitive-being* F, and the *Transitive-knowing* B.

Negative pole (T.B.)	(U.B.)	(E.B.)	Center (E.N.)	(E.K.)	Positive pole (U.K.)	(T.K.)
... F	C	G	D	A	E	B ...
-3	-2	-1	0	+1	+2	+3

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We notice that the so-called *tonal* notes in our major scale are *ali* placed to the *left* of the *Element-neutral*, i.e., on the side of *Being*, and that the *modal* notes, on the contrary, are all placed on the *right*, on the side of *Knowing*. This accords with the fact that the form of *Being* is FIXITY, and the form of *Knowing* DETERMINABILITY.²³

Durutte has succeeded here in bringing in the "triple progression" which we encountered first in Abbé Roussier, and which creates the musical system through a series of fifths.

Although Wronski would have had none of it, Durutte did recognize a second master: Mathurin-Auguste-Balthazar Barbereau (1799-1879), who was a composer, conductor, professor of composition, theorist, and author of a *Traité d'harmonie théorique et pratique* (1845) and an *Etude sur l'origine du système musical* (1852, re-issued 1864).²⁴ Barbereau recommended the series of fifths as the rational explanation of every fact in harmony. He did not say from where he got this idea, nor did he discuss the reasons for his choice. But we already know that this scale was the object of keen interest among certain theorists around 1800. Barbereau's system contains 31 tones, grouped symmetrically around D:

		G \flat	D \flat	A \flat	E \flat	B \flat
F \flat	C \flat	G \flat	D \flat	A \flat	E \flat	B \flat
F	C	G	D	A	E	B
F \sharp	C \sharp	G \sharp	D \sharp	A \sharp	E \sharp	B \sharp
F $\sharp\sharp$	C $\sharp\sharp$	G $\sharp\sharp$	D $\sharp\sharp$	A $\sharp\sharp$		

In practice, these 31 tones are reduced to twelve, because Barbereau and Durutte both accept equal temperament.

The central part of Durutte's *Esthétique musicale: Technie*, comprising 500 pages, deal with a theory of chords and resolutions based on this series of fifths. In brief, any interval can be expressed by a number derived from the distance of its two notes on the series of fifths. For example, the interval $C-B$ is -2, because one descends two fifths from C to reach B . The interval $C-C^{\sharp}$ is +7, since it is reached by way of G, D, A, E, B, F^{\sharp} . Durutte develops this principle so as to be able to analyze chords of up to seven different tones. Professor Richard Wedgewood, in his studies of Wronski and Durutte, has shown the significance of this for modern music theory. With slightly suspect ingenuity, Durutte also creates a system for harmonic analysis that reduces any progression whatever to the movement of the bass (present or implied) by a single step of a fifth. The ghost of Rameau seems to preside over this part of his work. By analogy, any melody can be reduced to a series of numberthe plus and minus numbers of its successive intervalswhich can then be summed into a single number. Durutte thinks that one can evaluate the esthetic quality of a melody according to whether the sum of its intervals

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equalled the numbers 1, 2, 3, 5, 17, or their multiples: i.e., the "rhythmic numbers" of Gauss's theorem and of Wronski's tuning system.

Durutte was trying to reconcile esthetics with theory, by proving that it is mathematical principles that determine *a priori* the feelings of pleasure that the ear receives from melodies and harmonies. I have to add that his explanations are filled with meaningless calculations and arranged so as to arrive at pre-selected results. This appears to be the problem with every universal system, even the Law of Creation itself, as soon as anyone tries to apply it rigidly on a practical level.

Wronski's Influence in Belgium

Although no one seems to have been ruined in the pursuit of Wronski's Absolute, like Balthazar van Claes in Balzac's *roman à clef*,²⁵ and although the leaders of Europe ignored him as completely as they ignored Fourier and Fabre d'Olivet, Wronski's philosophy had a certain effect in cultivated circles. The composers Charles Gounod (1818-1893) and François Auguste Gevaert (1828-1908) were among the subscribers to the posthumous edition of his works in the 1870s and 1880s. It was Gounod who paid for Wronski's monument in the cemetery at Neuilly, and who wrote its inscription. Gounod had so much respect for Durutte's work that he wrote: "one day this book will be placed on the table of some great musical convention, just as the Summa of Saint Thomas Aquinas was put on the table at the Council of Trent."²⁶ The composer helped Durutte to edit the first half of his *Résumé élémentaire* (1876), and accepted its dedication. The influence of these theories on his own compositions are less obvious. Charles Henry himself (see below), in a tribute to Gounod's memory, could think of nothing but a single chord invented by the composer (D^{\sharp} , D , F^{\sharp} , B), "which Count Durutte ingeniously ascribed to the great family of thirteenth-chords."²⁷

With Gevaert, the Wronskian influence reached Belgium. Gevaert succeeded Fétis in 1871 as Director of the Brussels Conservatory. At his death, he owned several of Wronski's works, and in 1881 received from Durutte his manuscript copy of the *Philosophie de la beau*, a lost work, as far as we can tell, in which Wronski explained his ideas on music.²⁸ Gevaert's *Traité d'harmonie, théorique et pratique* (1905, 1907) evaluates intervals exactly as Durutte does, by counting their constitutive fifths. At the other Belgian conservatory, the Flemish School of Music in Antwerp, the pupils of the founder, Peter Benoit, also knew of Wronski and Durutte. The composer J. Edward Croegaert (1850-after 1914), born in Antwerp and a student at the Flemish conservatory from 1868-1871, wrote in 1873 a *Traité complet de la tonalité (harmonie et contrepoint) basé sur des données positives*, the first of his several fantasies written under "messianic" inspiration. In these "*données positives*" one can recognize Wronski's *a priori*. Croegaert credited the philoso-

pher for the first time in his *Mémoire sur l'unification du diapason* (1885), which argued for an international standard of A-432 Herz. Here Croegaert criticizes Durutte for being too practical to be a true Wronskian. As a nationalist, Croegaert claimed that his own work was "genuinely Belgian" because it united the attitudes and aspirations of the two peoples, the Flemings and the French, in the neutral state of Belgium: a perfectly Wronskian tripartite structure, as Professor Wedgewood observes.²⁹ Croegaert's other works include a biography of Peter Benoit, in which he takes the opportunity to propose the foundation of a utopian musico-political institution in Belgium; and a *Déduction de la doctrine exotérique et réforme définitive du calendrier comme initiation à l'oeuvre écrite de J. E. Croegaert appartenant à l'Institution de l'école exotérique*, in which Wronski and Benoit appear as "intellectual children of Jesus Christ."

Disciples such as Croegaert and Victor Hennequin were perhaps the worst enemies of Wronski and Fourier, because they unintentionally caricatured their masters' doctrines and exposed them to further ridicule. I turn now to Wronski's more serious followers.

Charles Henry: The Geometry of Perception

Durutte's theory was subsumed uncritically in the musical system of Charles Henry (1859-1926): an astonishing thing in view of the gulf between their levels of thought. Far be it from me to give a résumé of Charles Henry's work. Is there a single person alive who has assimilated it? Only François Warrain, himself an important link in the tenuous chain of Wronskianism in the twentieth century, seems to have had the necessary knowledge of mathematics and physics, the broad-minded spiritual sympathies, the access to obscure sources and the patience to encompass Henry's work.³⁰ If Henry was right, it remains for future ages to recognize him as a second Einstein, which he would certainly deserve if his unifying theories of matter, energy, and consciousness turned out to be correct.

There is a wholeness to Charles Henry's thought, but we must concentrate here on the small circle of ideas relevant to music. Henry inherited from Durutte three alternative foundations for the musical system: equal temperament, the series of fifths, and Wronski's tuning for the chromatic scale. To that we can add, since it was Henry himself who gave it his approval, the "rhythmic numbers" derived from Gauss's theorem. Henry often acknowledged his debt to Wronski and Durutte, but insisted on having discovered the essentials of his system independently of them. His originality lies in the "psychophysical" explanation that he gives to the recognized principles of music, in order to reconcile them with those of all the other arts as well as with the human constitution.

Henry sketched out his musical system in a basic article of 1885, "Introduction à une esthétique scientifique."³¹

There are only two ways of considering things. One can study them in themselves, in their transformations, their laws, their causes: in a word, objectively. This is the goal of natural philosophy. Alternatively one can represent them in relation to ourselves, happy or sad, pleasant or unpleasant, beautiful or ugly. This is the subjective way, and it is the goal of Art. Just as we call the objective consideration of things Nature, let us call their subjective consideration "the Physiognomy of things." We can say that Art pursues the expression of the Physiognomy of things, and that Esthetics establishes the conditions which they satisfy when they are represented as happy or sad, pleasant or unpleasant, beautiful or ugly. There is not yet any esthetic of tastes or smells, nor of the arts corresponding to these. Esthetic things are limited, for us, to forms, colors, and sounds.³²

Wronski and Durutte had begun with a similar distinction in the musical field: Wronski, by distinguishing

Acoustics from Esthetics;³³ Durutte, by separating Esthetics again into Theory and Technique.³⁴ These philosophers were not unanimous, but they helped to strengthen the idea that human sensibility rests on universal laws that they were charged to reveal. Henry had a high opinion of Durutte's work, calling it "certainly the most profound work on the subject."³⁵ But unlike his predecessor, who began his musical esthetics with a summary of scientific acoustics, Henry addressed himself immediately to psychophysical matters.

Henry's fundamental hypotheses appeared in axiomatic form in the same article of 1885. Human sensibility, he says, is reducible to pleasure and pain. Where is the source of this fundamental dualism? Not in the intensity of sensation,³⁶ but in its continuity or discontinuity, which lead respectively to pleasure and pain. It follows that "a perception that requires a quantity of effort tending towards the maximum is painful; a perception that requires a quantity of effort tending towards the minimum is pleasurable."³⁷ The body reacts to these different perceptions by inverse efforts. "The pleasure of a minimum effort of perception is expressed by a tendency to realize the maximum of work."³⁸ This is why sorrow is expressed by downward gestures, suggesting heaviness, while upward gestures express happiness."³⁹ The general principle of "scientific esthetics" is the definition of agreeable and disagreeable directions.

Experience and experiment had convinced Henry that the pleasant directions are upwards and to the right, while the disagreeable ones are downwards and to the left. Thus every direction can be expressed as a certain radius of a circle. He developed this idea in the twin works of 1888, *Cercle chromatique* and *Rapporteur esthétique*.⁴⁰ The "chromatic circle" is a colored circle whose nuances correspond precisely to their directions and their distances from the center. The "esthetic protractor" is a large geometrical protractor which gives, beside the degrees, the divisions of the circle into

fractions. The use of both instruments is to calculate angular relationships, respectively of colors and of the directions of lines. And the purpose of such calculations is twofold: it serves to evaluate any esthetic combination, e.g., the colors of a picture or the outlines of a vase; and it provides artists and craftsmen with a means of creating agreeable harmonies with absolute certitude. It is only fair to add that Henry, who was a friend of the painters Seurat and Signac, allowed artists the capacity to make right choices by intuition alone.⁴¹

Henry justifies the reduction of psychophysical principles to circular figures by the fact that living beings are composed entirely of circles or arcs. I will translate his theories, which are expressed with extreme abstraction, into simple terms and illustrations. Our arms, legs, fingers, and head are all anchored to points which act as the center of a circle, such that all the movements of our members are reducible to arcs of the circumference of a circle. By combining different arcs, we can achieve virtually straight lines, but only through secondary and composite movements. We are circular beings, just like all other living things. But our circular existence is organized into pleasure and pain. We recall here that the "agreeable" directions are to the right and upwards. Henry calls these "dynamogenic" directions, because they favor effort and movement, and thus express happiness. The dynamogenic quality of the upward direction is easy to understand as defying the force of gravity. It is less clear in the case of rightward movement, but Henry suggests that when one looks at the sun and moves from left to right, it takes less effort than moving from right to left, because in the first case the earth is moving with us. Perhaps, he says, it is because of the resistance of the ether; but in any case, the sun must be at the basis of the phenomenon.⁴²

Having established which quarters of the circle are dynamogenic, he distributes the colors on it according to their qualities. Red is at the top, blue-green at the bottom, etc. This enables him to create a whole theory of colors, with consequences for the history of art that have been investigated by José Argüelles.⁴³ Reading the *Cercle chromatique* gives one the impression of a highly refined geometrical theory supported by a clumsy and outdated experimental method. Henry describes experiments with men whom he required to lift weights while fixing their eyes on revolving disks of various colors. etc.⁴⁴ This gave him, apparently, the formula for the "normal" human physique and esthetics, from which any deviation was blamed on fatigue, incompetence, or mental deficiency.

For music, the important things are the directions and divisions of the circle.

Music is the concrete representation of abstract directions, and it is the extreme mobility of each tone in the direction of its attraction that conceals the secret of its charm, at once so intellectual and so sensual, and the art of its expression.⁴⁵

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However vague and unpromising such a statement may sound, Henry uses his system of dynamogenic directions to explain musical principles such as: (1) the octave ratio of 1:2; (2) the series of fifths, made through multiplication by 3:2 or 2:3; (3) the division of the octave into 12 semitones; (4) the diatonic major and minor scales; (5) the existence of two tuning systems, the Pythagorean and the Ptolemaic; (6) the application to music of Gauss's numbers.

The way in which Henry explains these six musical principles shows a very powerful and imaginative mind at work. I will summarize his conclusions, one by one.

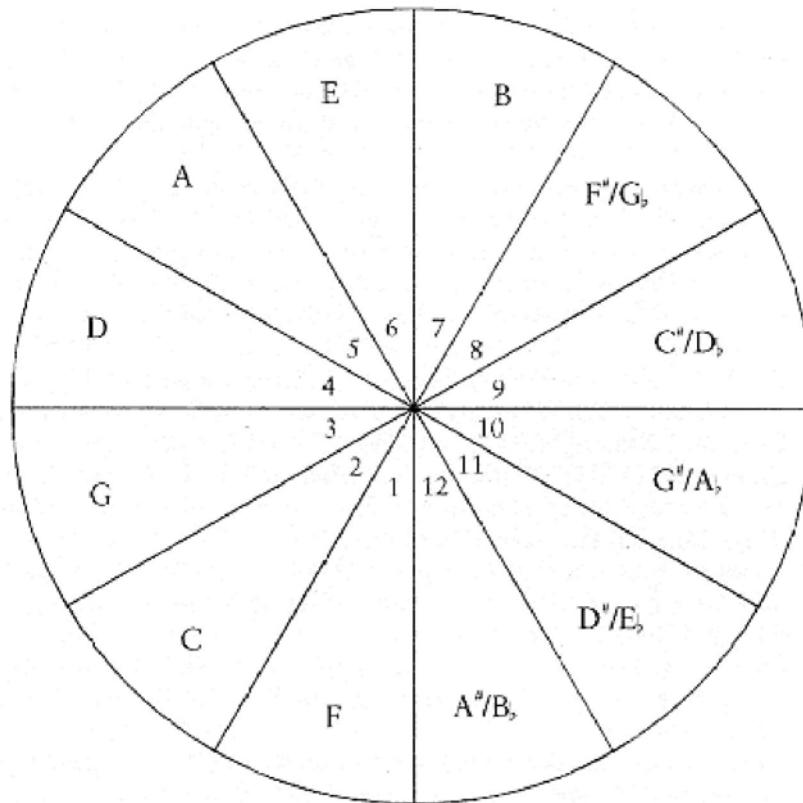
(1) The 1:2 ratio appears on the circle as the relation between the entire circumference with its half (actually 1:1/2). Henry imagines that the whole circumference is traveled in "virtual" fashion when a radius has swept half of it, because every radius evokes a diameter. ⁴⁶ Thence comes the virtual identity of the half-circle with the whole, just like two tones an octave apart.

(2) Henry spent much time studying the ratios of 3:2 and 2:3, which seemed to him fundamental for every field of knowledge. The chief idea, though he never states it so simply, is that a circle can be divided into two or into three equal parts. Division into two comes from the two hands making a simultaneous gesture, starting and ending at the same point. Division into three comes from one hand describing a circumference on its own, wherein the "points of maximum contrast" are at 120 from the point of origin. Convincing or not, here are the key words on the subject:

Simultaneous contrast will give elementary values equal to successive contrast, 2/3 in all, which can be considered as the first successive maximum of a right or left-hand function. It results that the values sought correspond objectively to three alternative movements, synchronous with two alternative movements of the same magnitude. Thus, by the realization of unity, there is a tendency towards the production in the medium of three vibrations in the same time as two. The mean density of the medium engaged in the sphere of action would thus be less than that of the free medium, or in other words the medium is repelled when these operations occur. Subjectively, unity appears according to the current conditions of continuity or discontinuity under the form $\frac{3}{2}$ or $\frac{2}{3}$; they are the interval of the fifth and its inversion, and we owe to M. Marey this experiment as a remarkable confirmation of the theory: by exciting a muscle successively and continuously, he found that the muscular noise rose by a fifth.⁴⁷

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(3) The justification of dividing the octave into twelve semitones also rests on experimentation and geometrical theory. According to the psychologist Wundt, the importance of the number 12 comes from the fact that it is the maximum of sensations that our consciousness is capable of containing simultaneously or of perceiving as a group.⁴⁸ Thus division and multiplication by 12 are given in our very being. This division is also justified as reconciling the divisions of the circle into quarters and into thirds.⁴⁹ This incidentally explains the importance of 12 and 24 in the history of the human mind.⁵⁰

(4) Henry aligns the circle of fifths with the geometrical division of a circle into 12:

In order to form the major scale from C, one has to take intervals of what Henry calls "minimum successive contrasts," i.e., of $1/6$ of a circle: C, D, E . . . But for some unstated reason one is forbidden to exceed $7/12$ of the circle, so one has to go next from E to F. The scale is completed by G, A, and B.

The construction of the minor scale did not even satisfy Henry's faithful disciple Warrain.⁵¹ It hinges on a metamorphosis of G to G# caused by "the discontinuous reaction of the two sides." One's impression is of the circle being used as a Procrustean bed, adaptable for all purposes.

(5) Henry was indebted to the experiments of Cornu and Mercadier for his explanation of the fact that at every period there have been rival votaries of the Pythagorean scale or "musicians' scale," tuned by fifths, and of Zarlino's scale, also called Ptolemy's or the "physicists' scale." Cornu and Mercadier had discovered that the Pythagorean scale is found more satisfying for melody, but chords in Zarlino's tuning for harmony. Henry reminds us that the divergences between the two scales consist in the major thirds, these being 64:81 in the Pythagorean tuning, 64:80 in Zarlino's. Their difference is the syntonic comma 80:81 that Wronski considered the "esthetic limit of human hearing," hence as negligible. His own experiments, says Henry, taught him that the perception of the divisions of a circle vary according to whether one looks at them successively or simultaneously. In particular, a third of a circle seems smaller when seen simultaneously

than it does successively.⁵² This seemed to him to confirm the difference of the musical thirds: the harmonic third, perceived simultaneously, is smaller by a comma than the melodic third, perceived successively.

(6) Henry had already discovered the importance of Gauss's numbers before reading Durutte's *Esthétique musicale: Technie*.⁵³ He found Durutte's and Barbereau's point of view too metaphysical. His own theories, always based on circular representation, gave him a satisfactory proof of Wronski's intuition that these numbers were important to musical esthetics. Gauss's numbers are those of the sides of regular polygons which it is possible to inscribe in a circle with the traditional geometer's tools of compass and straight-edge. This possibility was not merely a geometrical curiosity to Henry, but a reflection of the unconscious actions of our natural mechanism. Warrain summarizes his consequences in a syllogism:

Geometrical constructions with the compass are natural to a circular being: they incur work of an infinitely small amount in comparison to the drawing of any other curve. Now rhythm is essentially a natural movement to any living being. Rhythms will thus represent themselves by arcs of a circle whose denominators are rhythmic numbers.⁵⁴

The field of application of these rhythmic numbers goes far beyond music, to the extent that Henry sees in them a universal key. In the introduction to his *Rapporteur esthétique*, he reveals a science of num-

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bers which are supposed to set on a solid basis the study of history, medical diagnosis, art and music criticism, archeology, and much more. One of the fullest developments concerns color. On the great colored circle that is included in the folio edition of *Cercle chromatique*, the harmonious combinations of colors are supposedly recognizable by their relative distances around the circumference of the circle. They are exactly the same as the divisions that give the rhythmic numbers: 1/2, 1/3, 1/4, 1/5, 1/6, 1/8, 1/10, 1/15, 1/16, 1/17, 1/20, etc. (The *Rapporteur esthétique* includes a list of several hundred.) In the field of form, agreeable lines are made from the combinations of angles subtending the same arcs. In the *Rapporteur esthétique*, Henry offers us an extraordinary application to pathology: he analyses some graphs he has borrowed from a medical study of the arterial tension in a patient with heart-disease (endopericarditis). Exactly when the numbers on the graph became "rhythmical," the patient began to recover.

If Charles Henry's theories sometimes wander off into the realm of pure numerology, we cannot dismiss some of their results. For example, his concept of the dynamogeny of musical tones allowed him to explain as well as anyone the curious reversal of perspective that has taken place since the Greeks, who regarded our "high" notes as low. Received opinion holds that it was the Greek lyre that was held, like a guitar or lute, with its bass strings uppermost. Henry says that there is a deeper reason. ⁵⁵ The Greeks knew that a tone rises as it approaches the listener, and falls as it moves away from him. This is why they associated low pitch with distance, or, which comes to the same thing, their height. Hence, too, their planetary scales, which assign the lowest note to the furthest planet, Saturn. The Greek concept of directions differs from ours mainly through its objectivity, while ours is based on dynamogeny, a subjective and interior function. Finally, "musical sensation has evolved from objective to subjective," with interesting consequences for the historian:

The perception of simultaneous phenomena, whether lines or tones, cannot take place without an effort of adaptation on the part of the subject. Objective natures are by definition incapable of these proportional efforts of adaptation, so that our individual wishes are for them a vast desire to embrace each thing successively. This is the reason for the Greeks' impotence in harmony and instrumental music.

But objective beings, because they are essentially concrete, pursue an interest in details and refinements that have long been unknown to subjective natures, uncomfortable with abstractions. Thence comes that richness of rhythm and meter among the Ancients, that variety of modes of transposition, that complexity of scales that the music of the future will seize by force and merge

Henry wrote only one statement about his view of future music, but it is important, even prophetic. On April 27, 1892 he gave a lecture at the Théâtre d'Application on "Une transformation de l'orchestre."⁵⁷ After a sketch of the orchestra's history up to Berlioz, he asks what the orchestra of the future will be like. Given that the progressive enlargement of the orchestra is already showing diminishing returns, might it not be possible "to translate into a simpler yet still adequate language the infinite nuances of orchestration?"⁵⁸ Henry recalls to his listeners the little Gypsy orchestra that was so successful at the Expositions of 1867 and 1878, made from a double string quartet, a small clarinet, and a cymbalon. As a substitute for the cymbalon, he adopts Croegaert's suggestion of a harp combined with a kettledrum or bass drum. Here Henry makes a long digression about the possibility of using harp glissandos for harmonic purposes, especially recommending the six-toned scale C D E_♭. This is of course the whole-tone scale which Claude Debussy, as obscure a figure at this time as Charles Henry, used in his *Prélude à l'après-midi d'un faune*, begun in 1892 and finished in 1894, whose first chord is sounded as a harp glissando. In Chapter Seven I will suggest the possibility of Henry's influence on Debussy. At all events, Debussy's music is the perfect answer to Henry's plea for the enfranchisement of chords based on seconds. "Up to now they have been banished from harmony because the second is considered an absolute dissonance. But what is a consonance? What is a dissonance?" Scientific experiments had shown Henry a revolutionary hierarchy of consonances and dissonances, in which the major second and the minor seventh place among the consonances, even ahead of the thirds and the perfect fifth. Thus, he says:

You can see that the second is singularly rehabilitated from its dissonant character. I will now show you some unresolved chords of the second. They have a vague and indeterminate character that makes them very valuable; they ought to constitute a new class beside the chords founded on stacked thirds, which Count Durutte was the first to classify systematically with a very remarkable mathematical sense.⁵⁹

Henry was an esotericist in the same sense as Wronski: both were scientists and technologists, but they differed from others of their time by their acceptance of immaterial realities, and which is much more rare by their refusal to exclude these from their scientific thought. Henry is perhaps best understood as a modern alchemist, working to reconcile spiritual facts with laboratory experiments. This work occupied his whole life, from the early experiments in "dynamogeny" to the researches of his last years, when he was looking for physical evidence of the soul and its immortality. He was using a large sphere pierced with a tiny hole as a "black body" in comparison to the "biological resonator" that is a living being, and measuring the rays emanating from each. His last articles were called "What I know of God,"

"Man after death," and "Beyond love."⁶⁰ They show clearly that he was aware of esoteric doctrines and in sympathy with them, but with an ironic intelligence that excluded any kind of orthodoxy. He is supposed to have said on the subject of immortality that: "Death is merely a physiochemical event of no importance: it is only after my death that I will begin to amuse myself seriously."⁶¹

Although Henry saw the scientific world turn its back on him, he had plenty of friends and admirers, some of them in quite unexpected places. After his death on November 3, 1926, an entire number of the *Cahiers de l'Etoile* was dedicated to him.⁶² This was a serious and broadly-based journal associated with Krishnamurti's "Order of the Star," whose editors, Yolande de Manziarly and Carlo Suarès, evidently considered Henry as an ally. They presented tributes and personal memoirs from about twenty authors and artists, including Paul Valéry, Edouard Monod-Herzen, Fernand Divoire, George Pillement, Gustave Kahn, Paul Signac, Albert Gleizes, Colonel Caslant, and Francis Warrain. This special number of *Cahiers de*

/Etoile gives a fleeting glimpse of a Parnassus in which poets, artists, research scientists, members of Oriental religions, and Theosophists united to pay homage to "one of the last if not the last of those prodigious encyclopedists of whom one may truly say, without metaphor, that nothing human was alien to them."⁶³

Ernest Britt and the Synthesis of Music

Born and raised at the same time as Charles Henry, Ernest Britt (1857-after 1950)⁶⁴ matured more slowly and lived to bring the Wronskian influence into modern times. Britt's education, like Croegaert's, was with Peter Benoit at the Flemish School of Music at Antwerp. As a composer and conservatory professor, Britt left about thirty songs, an opera, and a series of symphonic movements covering nearly seventy years, from the *Kermesse flamande* of 1876, a work in Benoit's nationalist vein, to *The Dream of Victory*⁶⁵ of 1944. The only thing I shall say about Britt as a composer is that modern music, from Debussy onwards, seems not to have existed for him.⁶⁶

Britt probably came across Wronskian ideas at the Antwerp Conservatory,⁶⁷ but the first definite evidence dates from 1890, the year when he began corresponding about Wronski with the Bibliothèque Polonaise in Paris. From time to time in the following years he gave this library copies of Wronski's works. It was his second marriage that allowed Britt to act as a real Maecenas. In 1929 he married Mary Wallace Shillito,⁶⁸ the daughter of an American millionaire, and left Paris for Cap Ferrat-Cruseilles, where Mary had her château. The Britt's played a large part in founding a *Dom Wronskiego* in Warsaw in 1931; a letter of 1934 from the President of the Messianic Institute of Warsaw thanks them for gifts amounting to hundreds of thousands of francs. In Paris, the publishing house of Véga, underwritten by Mary Britt and directed by Dr. Alexandre Rouhier,⁶⁹ issued the first three of seven projected volumes on Wronski,⁷⁰ which were to have been followed by

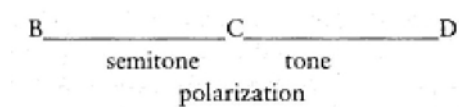
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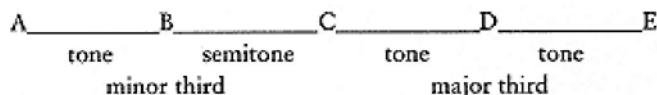
a complete edition of the philosopher's writings. In 1937 the Institute of Slavic Studies of the University of Paris held an inauguration ceremony for a Wronski monument, with a concert at the Sorbonne that started with Britt's *Hymn to Apollo* "in the Dorian-solar mode." ⁷¹ But World War II put paid to these efforts in Paris and Warsaw alike.

Britt's erudition is not at all comparable to that of Charles Henry or their mutual friend Francis Warrain. But his work has the signal advantage of being circumscribed, concise, and clear. It consists of three books, each containing the essentials of its predecessor(s): *La Synthèse de la musique* (1914), *Gamme sidérale et gamme musicale* (1924), and *La Lyre d'Apollon* (1931).⁷² The fundamental message is the explanation of the diatonic scale by the Wronskian system. Warrain writes of their author: "He is the first, it seems to us, to have based Music on the polarity that is at the source of creation and on the finality which crowns its accomplishment, instead of subordinating it to Mathematics, Psychology, or Cosmology, which like Music, but correlatively, proceed from these sovereign ontological conditions."⁷³ Warrain was probably thinking of Wronski and Durutte, whom he found too mathematical in their approach to music; Charles Henry was too psychological; and perhaps Johannes Kepler (on whose *Harmonia mundi* Warrain wrote a two-volume study) too cosmological.

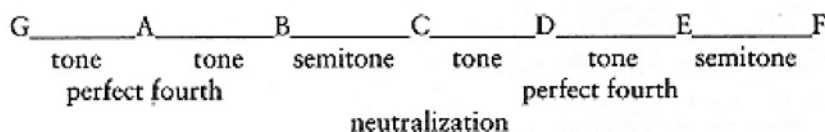
Britt begins his study with the polarity expressed in the two tones flanking the central C:B, a semitone away, and D, a whole-tone away from it.



After the polarization of the primordial elements, according to Wronski's doctrine, there comes the extreme divergence. In this case, it means that the two contrary directions continue by adding another tone to each:



Here are the two thirds which lie at the root of the major and minor modes, and of all musical emotion. Next comes a neutralization of the two polarities by a return of the primordial intervals (tone and semitone) on opposite sides:



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It is possible, and ingenious, to consider the major scale in this way, but how can one consider as "natural, instinctive, and fundamental" a scale that has only dominated music for the past few centuries? Britt's response is unashamedly evolutionary: "... the constitution of the modern scale doubtless responds to some law of inner organization, psychic in essence, whose imperious necessity was not felt until humanity's mental development was advanced enough to receive its revelation and conceive its reality." 74 In Britt's view of pre-1914 music history, the Greeks and Orientals count for nothing, Monteverdi and J.S. Bach for everything; "the evolution of music through the ages falls under the Law of Progress, the same as all realities in the domain of human activity"75and it was Wronski who revealed the truth. In the following table, Britt explains the evolution of music in Wronskian terms.

ÉVOLUTION DE LA MUSIQUE SUIVANT LA LOI DU PROGRES	
Buts de l'humanité (?)	Évolution de la musique.
I. — CONCOURS TELS LOGIQUE DE L'HISTOIRE	
Ère des buts physiques OU RELATIFS À NOTRE EXISTENCE TERRESTRE — FINALITÉ DANS LA CRÉATION DE L'HOMME	
<p>A) Buts corporels:</p> <p>a) <i>physiq.</i>: But sensuel: bien-être corporel; 1^{re} Période = temps antiques . . .</p> <p>b) <i>physiq.</i>: But moral: cheval public; 2^{de} Période = temps classiques . . .</p>	<p>Musique traditionnelle de l'antiquité { sensuel: mélodis. physique: harmon.</p>
B) Buts spirituels:	
<p>b) <i>spirit.</i>: But religieux: moralité publique; 3^{re} Période = temps modernes (du Christ à la Réforme) . . .</p> <p>c) <i>physiq.</i>: But intellectuel: bien-être spirituel; 4^{re} Période = temps modernes (de la Réforme à la Révolution) . . .</p>	<p>ÉLÉMENTS ORGANIQUES D'ÉVOLUTION MUSICALE EUROPÉENNE (Les érudits.)</p> <p>a) <i>Monophonie</i>: voix solitaire, plain-chant (du 1^{er} au 11^{es} siècle).</p> <p>b) <i>Polyphonie</i>: contrapoint, organ, luth, chœur (du 12^{es} au 17^{es} siècle).</p> <p>c) <i>Transitions</i>: de la polyphonie à l'harmonie: madrigal, bel canto, virtuosisme.</p> <p>d) <i>Transitions</i>: de l'harmonie à la polyphonie: orchestration, concert, œuvres musicales de chambre, symphonie, drame musical (du 18^{es} au 19^{es} siècle).</p>
II. — LOI SUPRÊME DE L'HISTOIRE	
Ère des buts transitifs — ÉTALONNEMENT DE LA LAM DU PROGRES	
<p>Recherche des buts ultimes; 5^{me} Période = temps actuels.</p> <p>Artisans sociaux:</p> <p>a) Opposition sociale: moralité nouvelle; 6^{me} Période = temps actuels.</p> <p>b) Préparation sociale: moralité nouvelle; 7^{me} Période = temps actuels.</p>	<p>Directives artistiques et scientifiques de la musique (18^{es} et 19^{es} siècles).</p> <p>a) <i>Physiq.</i>: influences romantiques, déformation de l'antiquité musicale (à partir de J. Offenbach) 7.</p> <p>b) <i>Physiq.</i>: influences romantiques, déformation de l'antiquité musicale (à partir de Beethoven).</p>
<p>7 FRANK WARRIOR: <i>L'œuvre philosophique de Henri Wronski</i>, tome II, page 204.</p> <p>8 Il s'agit tout d'abord de la loi de la musique, de plus en plus soumise aux lois de la science, ainsi que l'œuvre des sciences et l'œuvre de l'humanité dans le 19^{es} siècle moderne. Avant de signer révélateur de l'équilibre moral et intellectuel universel nous sommes.</p>	

Ernest Britt's scheme of musical evolution, from *La Synthèse de la musique*

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In 1916 Britt discovered the possibility of bringing the Greek system into his synthesis. hitherto he had only included the Medieval modes. It was on learning about the correspondence of tones, planets, and the days of the week that he came to believe that Greek music was identical to Egyptian, and that the primary scale is the Dorian with conjunct tetrachords: A, G, F, E, D, C, B. This is a truly heliocentric scale:

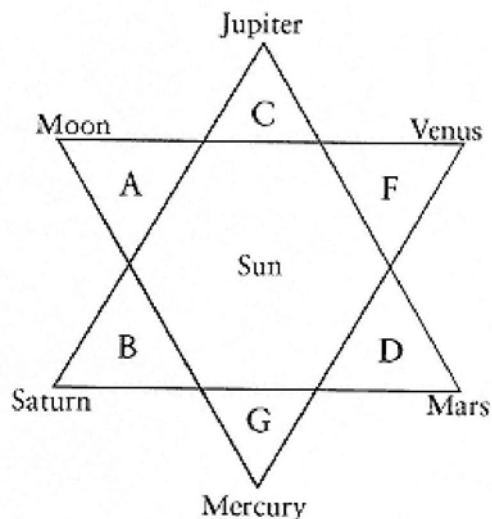
**Le Septénaire harmonique fondamental
et la Constitution de l'homme (*)**

Accord parfait supérieur	{	Ré	♂	7	Atma	.....	Ame du corps spirituel	9	Dominante	} <i>corps spirituel</i>
		Si	♂	6	Buddhi	.....	Vie	8	Médiane	
Accord parfait central	{	Sol	♀	5	Manas	.....	Matière	7	Tonique	} <i>corps astral</i>
		Mi	♂	4	Kama Rupa	.....	Ame du corps astral	6	Dominante	
Accord parfait inférieur	{	Ut	♂	3	Linga Sharira	.....	Vie	5	Médiane	} <i>corps physique</i>
		La	♂	2	Prana	.....	Matière	4	Tonique	
		Fa	♀	1	Sthula Sharira	.....	Ame du corps physique	3	Dominante	
							Vie	2	Médiane	
							Matière	1	Tonique	

Ernest Britt's manuscript notes on the Constitution of Man,
from his copy of *Gamme sidérale et gamme musicale* in the
University of Texas Library

What is more, it fitted the Wronskian principles to perfection, being a simple inversion of the major scale from G to F. Consequently, among the Greek modes there are only two that satisfy the Law of Creation: this "solar" Dorian, and the "jovian" Lydian identical to C major.

Examining the correspondences between tones and planets led Britt to elaborate his theories on astronomy and music. One of his intuitions was that the consonances (thirds, fourths, fifths, sixths, and octaves) should correspond to the benefic aspects of astrology (sextile, trine, conjunction), and the dissonances (seconds and sevenths) to the malefic aspects (square and opposition). The remaining diminished and augmented intervals corresponded to the semi-sextile and semi-square.⁷⁷ Britt is the only one among the musico-astrologers not to insist on reconciling intervals and aspects in a geometrical fashion, which always ends by violating one or the other system.⁷⁸



Gamme sidérale also contains a table of correspondences with Theosophical elements, drawn from H.P. Blavatsky's work but not used in quite the same way. 79 I do not know the exact source of his information, though Britt was a member of a "Groupe paléosophique," along with Caslant, Warrain, and a certain Lalaume,⁸⁰ and he knew the work of the prominent Theosophist Edmond Bailly (see Chapter Seven). It would not have been difficult for him to find a version of the seven elements of man to align with the tones and planets. Britt's arrangement of the tones in a series of thirds brings in another symbolism based on connecting triads, which one can see in his table reproduced on page 111. In this ingenious way he reconciles the Nine Muses, Apollo's handmaidens, with the seven strings of the sun-god's lyre.

Britt's third book, *La Lyre d'Apollon*, takes up all the ideas of its predecessors, but gives more room to astrology and to non-European musical systems. Wronski, though ever-present, is no longer at the forefront. The decorations of Laura Fink, Warrain's important preface, the score of the *Hymn to Apollo* for voice and harp, and the elegant typography of Editions Véga make this hundred-page book a delightful object in itself. True to the traditions of the Parisian small-publishing world, copies of the original edition were still for sale more than fifty years after its appearance.

Ignorant of the horrible irony implicit in the act, Britt shows how musical symbolism can be used to reconcile the sign of the Swastika with the Star of David.⁸¹ The Swastika, he says, symbolizes the "dynamic equilibrium" of the four chords of the diminished seventh, while the Star of David symbolizes "the static equilibrium of tonality, through the resolution of the imperfect triad on the leading-tone into the perfect triad." The diagram on the previous page of the "harmonic resolution in the Jovian mode of C major" shows the

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two triangles containing respectively the major and minor thirds, which is where Britt's system had started.

In 1931, when *La Lyre d'Apollon* appeared, Britt was aware of coming events, but uncertain as to their nature. He reminded readers that the discovery of Uranus in 1781 was followed by revolutions and initiated the feminist movement; that of Neptune in 1846, the phenomena of spiritualism and occultism. ⁸² He also knew of Pluto's discovery in 1930. Now, he said, is come "the critical era when [man] must decide his future for himself and in full freedom: whether or not he will accomplish his destiny, which will be his own destruction or creation."⁸³ In 1941, Britt called on men of good will, exhorting them "to persevere in the saving way of sacred union, so that, as Jesus's beautiful prayer has it, 'the Will of God shall be done on earth as it is in heaven.'"⁸⁴

While Fabre d'Olivet's work became a recognized link in the esoteric tradition, and Fourier's influence passed into the political arena as a contributor to socialism, Wronski and the Wronskians appear to have fallen flat. Wronski lacked the personal charisma that would have made his "Messianism" effective, and his "Law of Creation" was just too difficult and too abstract for most people to absorb. The stupefying weight of Durutte's book and the extreme difficulty of Henry's work deterred potential students. Britt, writing with far greater simplicity and clarity, shows that Wronskian principles might have become something akin to the Sephirothic Tree of the Kabbalists, or the Enneagram of Gurdjieff: namely, a structure that could be applied to every type of phenomenon, in order to show the unity of all manifestation.

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Notes

1. The description is Z.-L. Zaleski's, in his Preface to Warrain 1933-38, I, i. The biographical facts given here are from the same source. Wronski's forename is sometimes spelled Hoëné.

2. Warrain 1933-38, iv.
3. Viatte 1979, II, 258.
4. Azaïs 1831-32. The details of the nine letters in the *Revue musicale* are as follows: (I) Untitled, V/37 (October 22, 1831), 293-295; (II) "Acoustique fondamentale, ou bases physiques de la musique," V/38 (October 29, 1831), 304-306; (III) Untitled, V/40 (November 12, 1831), 317-320; (IV) "Acoustique fondamentale," V/42 (November 26, 1831), 333-336; (V) "Acoustique fondamentale," V/46 (December 24, 1831), 356-357; (VI) "Acoustique de la musique," V/49 (January 14, 1832), 389-392; (VII) "Acoustique et musique," VI/2 (February 11, 1832), 10-12; (VIII) Untitled, VI/23 (July 7, 1832), 180-183; (IX) "Acoustique, Musuque; théorie fondamentale," VI/26 (July 28, 1832), 204-208.
5. Azaïs, Letter III, 318.
6. Azaïs, Letter V, 365.
7. Troupenas wrote several hundred pages about music that have remained in manuscript (communication from Professor Richard C. Wedgewood, of the University of Saskatchewan).
8. Troupenas 1832, 129-131. In the preceding number (*Revue musicale* 16, May 19, 1832, 135), Troupenas had attacked the theory of Baron de Blein (Blein 1827). Fétis agreed with Troupenas, and took the opportunity of also ridiculing Roussier's theory of chords.
9. Azaïs expresses it as follows: "Universal analogy is the only type of unity that can be given to universal variety." Letter VIII, 180.
10. *Revue musicale* VI/24 (July 14, 1832), 187f.
11. Fétis 1835-44, s.v. "Troupenas."
12. Fétis 1849, 9.
13. Communication from Professor Wedgewood.
14. Durutte omits several passages from Wronski's lost original, but provides his own summaries of them. Charles Henry reprinted Durutte's version, with an introduction (Henry 1887). Durutte had already published Wronski's letter of January 3, 1850, which he entitled "Etat futur de l'acoustique musicale. Détermination de la vraie gamme diatonique," in *La Revue progressive*. His letter to A. S. de Montferrier, the editor of that journal, is included in *Esthétique musicale: Technie* before the letter of Wronski, evidently as an afterthought, because the two letters are paginated from 52' to 52'''.
15. Durutte 1855, vii. Wronski adds that he has already given a glimpse of these ideas in *Le Sphinx*, no. 1, 63ff. I have not been able to see that journal.
16. Durutte 1855, viii.
17. Durutte 1855, x.
18. Durutte 1855, xi.

19. Durutte 1855, xiii.
20. Durutte 1855, 52'''.

21. Durutte 1855, 52".
22. Durutte 1855, 551.
23. Durutte 1855, 556.
24. See R. Blanchard's biography in *Nouvelle Biographie française*.
25. See Balzac's *La Recherche de l'Absolu* (1834), where the extravagances and ruin of Claes are the result of his being lured into this hopeless quest by a Polish officer, Adam de Wierzchownia.
26. Loquin 1882.
27. Henry 1893, 3.
28. Wedgewood 1982.
29. Wedgewood 1982.
30. Warrain 1931.
31. Henry 1885. I cite the separately paginated offprint.
32. Henry 1885, 3.
33. In the "Extrait de la philosophie absolue de la musique," in Durutte 1855, 5.
34. "Il existe, dans la science de la musique, non seulement une théorie, mais de plus une véritable technie." Durutte 1855, 5.
35. Henry 1885, 6.
36. Henry 1885, 7.
37. Henry 1885, 8.
38. Henry 1885, 9.
39. Henry 1885, 11.
40. Henry 1888a and 1888b; 1889 (the more complete edition).
41. Henry 1888b, 15.
42. Henry mentions the migrations from East to West (Henry 1888, 10), but his argument only holds good for the Northern hemisphere.
43. See Argüelles 1972, 94ff., 134ff.
44. Henry 1888a, 5; 1889, 5.
45. Henry 1888b, 23. Acoustics, on the other hand, is "the abstract representation of concrete directions."
46. Warrain 1931, 113.
47. Henry 1888a, 31; 1889, 9.

48. Henry 1888a, 32; 1889, 10.

49. Even Francis Warrain apologizes to the reader of his study of Charles Henry for not being able to reproduce "the very complex demonstration on which Ch. Henry establishes this result, and which is based on the principle of the tendency towards change of action." Warrain 1931, 109.

50. Warrain 1931, 110.

51. Warrain 1931, 178, adding "Cette construction nous paraît assez bâtarde."

52. Henry 1888a, 120ff.; 1889, 40ff.

53. It was Prof. Col. Mannheim, of the Ecole polytechnique, who showed him Durutte's work. See Henry 1889, 42 (omitted in 1888a).

54. Warrain 1931, 157.

55. Henry 1886, 84.

56. Henry 1886, 87.

57. Henry 1892.

58. Henry 1892, 7.

59. Henry 1892, 12.

60. Henry 1926a, b, c.

61. Charles Henry, quoted by Juliette Roche, in Henry 1930, 31; another version reported by Albert Gleizes in *ibid.*, 122.

62. Henry 1930.

63. Emile Gautier, in Henry 1930, 47.

64. My study of Ernest Britt is based largely on the manuscripts and other papers given to the University of Texas (Austin) by Britt's granddaughter Inez Koutzen. They include many unpublished compositions.

65. The original title is in English. The work was "conceived in a dream" on April 12, 1944.

66. Several of his compositions were inspired by the tales of Charles Nodier, including the monodrama of 1910, *Liens de las Sierras*, whose subject is palingenesis.

67. The manuscript of *Kermesse flamande* is carefully and conspicuously dated August 15, 1876, as if Britt was already aware that this was the day that Wronski celebrated as the anniversary of his discovery of the Absolute.

68. Mary Shillito (died 1938), widow of the Egyptian engineer Hasan Farid Dina, married Britt shortly after her return from a voyage to Cairo in the company of René Guénon. The publishing house of Véga was founded by her for Guénon's benefit, although it only published two of his works.

69. Rouhier had been connected with Britt at least since 1922, when Rouhier lectured on peyotl to a "Groupe paléosophique" that included Britt, Warrain, and Charles Henry's disciple Colonel Caslant. Britt

seems to have been somewhat distant from Henry, despite the praises of the latter in Warrain's preface to *La Lyre d'Apollon*.

70. Warrain 1933-38.

71. The music of this hymn was published in *La Lyre d'Apollon*.

72. *Gamme sidérale* . . . (Britt 1924) was translated into German as *Tonleitern und Sternenskalen*. Ernest Britt's "*Gamme sidérale et gamme musicale*" frei aus dem Französischen übersetzt und mit Fussnoten und einem Nachwort versehen (Leipzig: Richard Hummel, 1927) by the conductor (and disciple of Bo- Yin Ra) Felix Weingartner. Five articles in Spanish by Arturo Menendez contained a par-

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tial translation of *La Lyre* . . . (Britt 1931), in *Teosofie: Revista de síntesis espiritual*, January-March 1933. Roger Britt, son of Ernest, made an English translation of *La Lyre* . . . (unpublished Ms. in the University of Texas Library).

73. Britt 1931, xxiii f.

74. Britt 1938, 14

75. Britt 1938, 31.

76. He discovered it in 1916 through re-reading Felix Clément's *Histoire de la musique* and Helmholtz's *Théorie physiologique de la musique* (Britt 1924, 6f.). He never cites Fabre d'Olivet.

77. Britt 1924, 45f.

78. See the analysis in Godwin 1987, 148ff.

79. In volume III of *The Secret Doctrine*, compiled posthumously by Annie Besant and others, the correspondances are: C=Kama-Rupa; D=Prana or Jiva; E=Buddhi; F=Kama-Manas; G=Auric envelope; A=Manas; B=Linga Sharira. Atma is not assigned a tone, since as supreme spirit it includes all the other principles (Blavatsky 1971, V, 432ff., 453ff.). Britt elsewhere cites the passage from Blavatsky's *The Voice of the Silence* on the "Tone of Nature" (Britt 1931, 69n), and seems to believe, with her, that the Lemurians had seven fingers on each hand (ibid., 27n).

80. See the subtitle of Britt 1924; also note 67 above.

81. Britt 1931, 90f. The swastika is drawn in the text and used as the colophon, in combination with the orouboros (the serpent with its tail in its mouth), as also occurs in the seal of the Theosophical Society.

82. He assigns to them the first flattened tones, B_\flat and E_\flat , while awaiting the discovery of three further planets to complete the number 12. Britt 1931, 87ff.

83. Britt 1931, 93 (conclusion of the text).

84. Britt 1941, 10f. On the cover of this pamphlet is the symbol of the cross in a circle. The manuscript score of Britt's symphonic sketch *Rosa mystica* (1931-36) is decorated with a rose in the center of a radiating cross. The use of the E mode (Fabre d'Olivet's "Hellenic mode") is disappointing, approximating to the ordinary major.

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Abbé P.-F.-G Lacuria Archives Elizabeth
Hardouin-fugier. After "L'abbé Lacuria et les
harmonies del l'être. Dossier composé par Robert
Amadou . . ." *Atlantis*, no. 314, 1981. By permission
of Robert Amadou.

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Chapter Six The Pythagoreans of Mid-Century

Abbé Lacuria, Christian Pythagorean

Several of our authors have claimed to have discovered the true principles of music, which they have usually found in number. But is this an adequate response to the mystery of music's nature and origins; and what, for that matter, are the true principles of number? This is one of the questions that occupied Abbé Paul-François-Gaspard Lacuria (1808-1890), author of a two-volume work *Les Harmonies de l'être, exprimées par les nombres on les Lois de l'ontologie, de la psychologie, de l'éthique, de l'esthétique et de la physique, expliquées les unes par les autres et ramenées à un seul principe* (Paris, 1844-1847).¹

The title says it all: we are in the presence of another of those great attempts at universal synthesis that have continued to answer a certain psychological or spiritual need. Lacuria expressed it very well in his pre-Freudian way, in a dream he once had: he dreamed that he was struggling with a giant serpent, which he overcame by smashing its head with a huge book.²

This great theosophic treatise, of which only a few dozen copies were sold, may have resolved his spiritual struggles, but it cost him dear in worldly terms. When it appeared, Lacuria was a priest and teacher at the Société d'Oullins near Lyon, a Catholic school of which he had been one of the founders. *Les Harmonies de l'être* showed an independence of thought that was insupportable by his superiors.³ The Lacuria scholar Elisabeth Hardouin-Fugier writes: "It seems that the trouble was both financial and doctrinal, since Lacuria had borrowed funds from the Oullins community for printing the *Harmonies*. The lenders mistrusted the book's economic and doctrinal viability alike, so that spending money on it seemed to them a financial loss and, besides, bad publicity for the establishment. The dispute reached the archbishop."⁴ Lacuria had to resign, and lived the rest of his life, first in Lyon and then in Paris, in ecclesiastical limbo. He was never formally condemned: that would have given him the chance to defend himself. But he remained excluded from any official position except that of supernumerary priest at the church of Saint-Etienne-du-Mont. For forty years he lived in a little apartment near the Panthéon (at 11, rue Thouin). In old age he became blind and returned to Oullins, where the son of the concierge cared for him to the end.

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Lacuria was a Christian Hermeticist of the purest type. He was a Christian in the sense of accepting without demur the doctrines of the Roman Church, the veracity of the Bible, and the authority of Saints Augustine and Thomas Aquinas. He was a Hermeticist in the sense that the universe, for him, consisted of a chain of analogies and correspondences whose original link is set in the very being of God. His friends bear witness to his saintly character, and to the serenity which he maintained through all his troubles, as the sign of a genuine theosopher.

But if Lacuria was a saint, he was an inquisitive one. Unlike modern rationalism, which he compared to a man trying to jump from one leg, he excluded nothing that might help him "enter a little into God's secret, namely what reason or special motive he had in making things in such and such a way." 5 The other leg he used in his leap towards God was Hermeticism. It led him to place at the very beginning of things, even within God himself, the primordial duality out of which the creation unfolded.

This duality is that of Being and Non-being. In order to become conscious of himself, says Lacuria, God had to distinguish what he was from that which he was not.⁶ To make this distinction was the function of the second person of the Trinity, the Son or creative Word of God. But every distinction within God had to be reconciled by love, the harmonizing force of the third person, the Holy Spirit. Thus the model of all future developments is already present in its perfect form within the Trinity; where the first unity (Father) is absolute; where variety (Son) is greatest; and where harmony (Spirit) is most complete.⁷

Lacuria continues by explaining that God, in order to conceive the distance between his own being and the nothingness of his absence, had to consider all the intermediate degrees. These degrees are all the creatures that exist, or might possibly exist.⁸ Every creature is a different mixture of being with non-being; all together compose "an indefinite series which corresponds only with the indefinite series of numbers." And he adds: "The series of numbers, including unity and zero, thus represents in one sense the thought of God about the creation, and may be considered as the expression of infinite knowledge."⁹ The duality in creation is not exactly that of being and non-being; it is the idea that God has of these. Considered as God's ideas, both being and non-being are equally admirable. In the case of light, for example, one may say that it is light that is good; but shadow, the manifestation of non-being, can also be good, as for example in the case of the protecting shadow of Jehovah's wings. In the couple of male and female, "the beauties of the divine double idea are translated most faithfully."¹⁰ Lacuria senses vestiges of this primordial truth, as it were saved in the Ark from the waters of the Deluge, in all the theologies of the Orient and of Antiquity; he names the couples of Brahma and Maya, Yin and Yang, Osiris and Isis, etc.¹¹ The same duality rules the physical plane, manifesting as the twin forces well known to theosophers: "A positive force, which throws them into space; a

negative force, the attraction that tends to destroy the first and to restore everything to rest . . . " ¹² But there is always a third element that makes harmony between these two opposing forces.

Thus the essential elements of Lacuria's system are the articulation of the forces and their harmony within the Trinity; the hierarchical ladder of beings; and the resonances of the former among the latter.

I leave aside some very interesting pages on the three "imponderable fluids," the three primitive colors, and the conic sections, to move directly to Lacuria's musical doctrines. That they were fundamental to his thought appears from the fact that they appear in the first volume of *Les Harmonies de l'être*, which dates them to before 1844.¹³ That they were largely self-generated is suggested by his only citing one musical authority: "M. Lucas," on the subject of semitonal attraction;¹⁴ and one composer: Mozart.

By the time Lacuria came to treat musical symbolism, theological considerations had already brought him from the number 3 to 4, to 5, and finally to 7, and led him to list seven divine attributes:

1	2	3	4	5	6	7
Life	Liberty	Harmony	Holiness	Wisdom	Justice	Eternity

The first attribute, Life, belongs to the Father; Wisdom and Justice express being and non-being, whose duality is the work of the Son; Harmony belongs to the Holy Spirit. (The other attributes are not connected with any particular person of the Trinity.)

In a chapter "On the rainbow and the scale," Lacuria unveils the "marvelous analogies" between these divine attributes, colors, and tones of the diatonic scale:

Life	Liberty	Harmony	Holiness	Wisdom	Justice	Eternity
Red	Orange	Yellow	Green	Blue	Indigo	Violet
C	D	E	F	G	A	B
Father		Spirit		Son		

He explains that first there is the major triad of the Trinity in itself, C,E,G; then the minor triad, C,E,A, where the Son enters into non-being in taking birth on earth. The three remaining tones, B,D,F, correspond to "intermediary" attributes, tied to none of the three Persons, and are usable in major and minor alike. This accounts, says Lacuria, for the qualities of the two modes and of the diminished triad. The major scale is that of the Trinity; the minor, that of the Incarnation, whose tonic, A, is the tone of the Son, not that of the Father, serving to show that "no person comes to the Father except through me" (John 14:6).

Lacuria pays special attention to the leading-tones (known in French by the term notes sensibles). He tells us that it was M. Lucas who noticed that

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the tones forming the two semitones E-F and B-C manifest the same law as the heavenly bodies: that of attraction in inverse proportion to their distances. 15 But Lacuria adds that the tendency of F is descending, while that of B is to rise. "E and F correspond in the scale to Harmony and to Holiness, which is the love of harmony. B and C correspond to Life and to the Memory that is the consciousness of life. E-F is thus the semitone of love which gives itself, B-C the semitone of the inner need of aspiration which throws itself at its goal."16 There is moreover an extra leading-tone in the minor mode, G#, which tends to rise to A. A perfect symbol of Jesus Christ, says the Abbé, whose divinity (G) "approaches humanity [A] to descend to it," but which still enjoys perfect liberty that permits the G, when sounded downwards, to become natural again.17

The two leading-tones both come into the seventh-chord G,B,D,F, a chord Lacuria calls "voluptuous, velvety, inebriating, vaporous like a cloud of perfume," unlike the triad C,E,G, which is "clear and limpid as crystal."18 These chords have their own symbolism. The major triad, dominated by its root C (Father), represents the principal Unity from which everything comes. The seventh-chord, dominated by the F, shows us Holiness, "love in its supreme act, the joy and blessedness of being, the return to the first unity." Thus it is the final unity, blessedness, and "the goal towards which we tend, but are still afar off."19 In a strange reversal of harmonic practice, this makes of the seventh-chord a more final chord than the major triad,

This chord it at once useful and dangerous. It stirs us to combat by making us glimpse the reward, but if it absorbs too much of our thoughts, we forget the battle in dreams of rest, and our courage flags. Passion and softness in the major, discouragement and tearful sorrow in the minor, abuse this chord and multiply its semitones.20

This, he says, is the psychological reason why military music and plainchant both avoid the seventh-chord and chromatic tones.

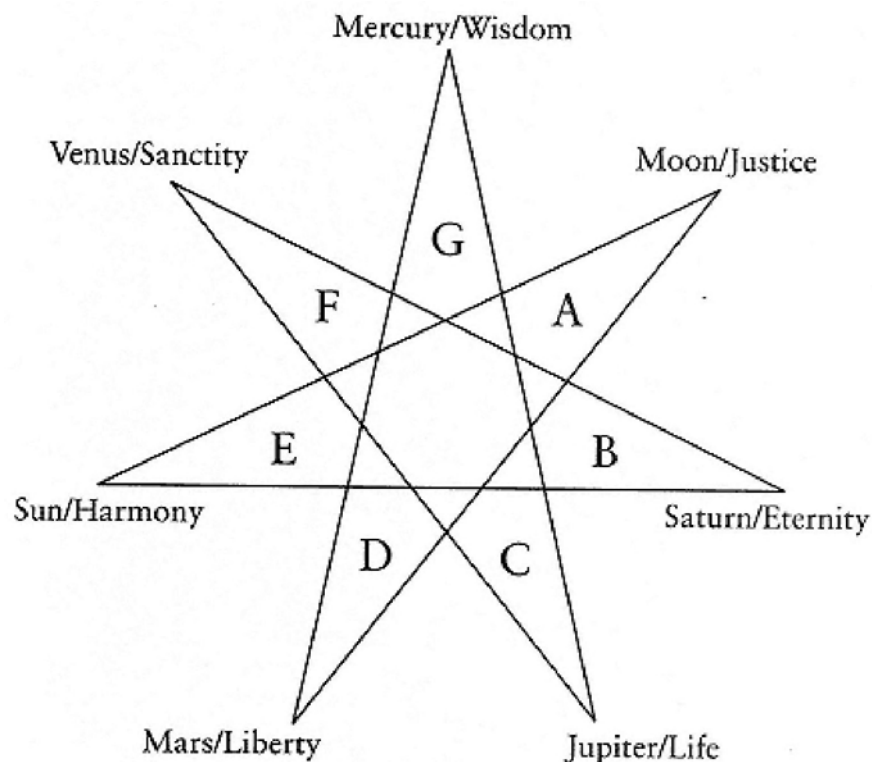
Up to 1844, when the first version of *Harmonies de l'être* was published, Lacuria was not yet aware of the correspondences of the days of the week with tones and planets, such as we have seen in Roussier and others. He discovered this scheme while he was working on an enlarged version of his book, and wrote a new chapter, "De la semaine," which appeared in the posthumous edition of 1899. He was now concerned with applying the seven divine attributes to "the oldest of created septenaries" and to the correspondences given by Greco-Roman authors such as Dion Cassius. Here is the diagram21 that Lacuria suggests to illustrate them:

With the help of this diagram, one can follow his ingenious argument:

It follows from this curious reconciliation that the order of the planets in space is to the order of their rulership of the days of the week as the order

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of the notes of the scale is to the series of fifths. The Ancients were not being arbitrary when they gave the names of the planets to the days of the week in a different order from that which they have in space. This order was based on the mysterious laws of nature which musical harmony reveals; and this gives a sense to the words of Pythagoras when he speaks of the harmony of the stars. One can also try inscribing the seven divine attributes on this star, each beside the note of the scale corresponding to it. Then the circle will show us these seven attributes in the natural order, each principal attribute flanked by the intermediary ones that it produces through its contact with the six others. It is order, peace, harmony, the eternal concert of being. But if instead of following the circle one follows the branches of the star, and the series of fifths, one finds the divine attributes in a different order, which seems to be that of their manifestation in time . . . This successive manifestation of the divine attributes in time coincides on the star with the order of the days of the week. That is why the week as it is arranged has been given us to measure time, until we re-enter eternity. 22

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Roussier and Fabre d'Olivet have already tried to reach the bottom of this question of the days of the week. To reconcile time and space, as Lacuria has done, is as much as one could possibly ask of speculative music. But his explanation depends largely on these seven divine attributes, whose selection and

arrangement seem to be Lacuria's own. Where did he find them?

Lacuria was a mystic, and his ideas came to him in visions and dreams. The historian of Illuminism, Robert Amadou, has rescued from oblivion a priceless piece of evidence, written by the Abbé on an isolated leaf:

It seemed to me that I was climbing the steps of an immense and conical roof [diagram] which covered everything: they were the degrees of truth. At the moment of reaching the top, I began the following phrase which I had obtained and finished during the half-sleep that preceded the complete dream . . . [And on the verso]: When, arriving at the summit, I will be able to say: "Infinite, Infinite, Infinite"; I will shout it so loudly to the other truths that they will all be shaken and vibrant, and the whole of creation will totter and be shaken and judged like the fig-tree hit by a strong wind, and the echoes of the first truth, reverberating from consequence to consequence, will go on to enlighten and renew all creatures from the heights to the depths. 23

What is interesting in this report is the vision of ascent to the summit of a cone "which covered all things." In *Les Harmonies de l'être*, the cone not only serves as a fruitful source of symbols, but there is also the suggestion that God has given the whole of creation the shape of a cone.²⁴ Another vision, perhaps from the year 1844, gave Lacuria the following correspondences: "The arm of God is Liberty; the eye, the Holy Spirit; the forehead, Eternity; the ear, Wisdom; the heart, Justice; Holiness, his whole person."²⁵ These are reminiscent of *macroprosopus*, the "great man" of the Kabbalists. There are no visions in the book, of course, and only a touch of Kabbalah: rather, there are rational arguments, doctrines, and ecstatic prayers. But we can assume that there was some visionary inspiration behind it.

Lacuria was also involved in the occult sciences.²⁶ He fashioned talismans, practiced astrology, and held seances with mediums. Between 1841 and 1847 a medium gave him information from a certain "Séraphin" about planets, the placement of souls, etc. He was interested in Nostradamus's prophecies, and seems to have had a certain prophetic gift of his own. Three years before the Paris Commune of 1870, he predicted its great fire.²⁷ He also predicted the accidental death by poisoning of his friend Adrien Péladan (died 1885).²⁸ The occult sources of *Les Harmonies de l'être* are yet to be researched.

Lacuria was also a practical musician and music critic. At the College of Oullins, we learn from his old pupil Félix Thiollier, Lacuria was the musical director.²⁹ He loved to sing Beethoven with "a sour little thread of a voice,"

and composed for the students a music that was correct and not too learned, but far superior to the general run of religious music at this time. 30 In Paris, the Abbé often saw Gounod (who in 1847 was himself wearing the seminarian's cassock), and frequented the Conservatoire concerts. At the Opera he always turned his back on the stage to follow in the score. Thiollier's anecdotes evoke a genial eccentric of the Erik Satie type. Both were inventors of ingenious devices to bring some comfort into their poverty: the Abbé had "thermostatic rolls," whatever these were, while Satie had hot-water bottles beneath his bed. And just as Debussy called Satie "Sweet and medieval musician, strayed into this century,"³¹ Thiollier calls Lacuria "a mystic from the Middle Ages strayed into nineteenth-century France, a disciple of Saint Francis of Assisi resuscitated."³²

Lacuria is the first philosopher discussed in this book to have appreciated the music and the creative personality of Beethoven. In an unpublished manuscript notebook³³ he sketched out an interpretation of the nine symphonies as the ascent of the composer's soul. They are drawn as the nine rungs of a ladder. The first is empty, because, as the commentary says, Beethoven's First Symphony was merely an extension of Mozart's and Haydn's style. The sun begins to rise beneath the second rung. The third rung, under the sign of Mars, is draped with a tear-stained cloth. On the fourth is a blazing sun. A cloud veils the fifth, then the moon rises among six stars. The sixth rung, corresponding to the "Pastoral" Symphony, is wrapped round by a rose-bush and crowned with a sun. Clouds giving off lightning cover the seventh and eighth. Finally the ninth shows rays of glory, symbolizing the celestial vision attained at last. This is the

interpretation of a listener who uses music as stimulus for his own fantasies, which he then projects onto the personality of the composer. Lacuria was little worse in this regard than those other "poetic" interpreters of Beethoven's symphonies, Berlioz and Wagner.

Actually, Lacuria's appreciation of Beethoven went far beyond that of most listeners of his time. About 1859 he heard the late quartets performed for the first time in Paris, at the Salle Pleyel. In a booklet "Les dernières confidences du génie de Beethoven" he meditates on this unparalleled works which the composer's death left standing "like a desert sphinx" and patiently awaiting the solution of their mysteries. Among their many difficulties, Lacuria says, not the least is that of finding anything to share the program with them. He thinks that only Mozart, "that musical Eve of this proud Adam," can hold his own there. Deeply stirred by the *Heiliger Dankgesang* of the A minor quartet, Opus 132, he compares the Molto adagio in the Lydian mode to Isaiah's vision, in contrast to the human joy of the Andante. Of the Cavatina of the B-flat quartet, Opus 130, which moved the composer himself to tears, Lacuria says that "it is the voice of a soul which cannot define its uneasiness, and whose only pain is the absence of the infinite."³⁴ One could not find a better epitaph for Lacuria himself.

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Louis Lucas, Hermetic Revolutionary

We come down to earth in leaving Abbé Lacuria for his contemporary Louis Lucas (1816-1863), the author of *Une Révolution dans la musique*.³⁵ These two Pythagoreans of the mid-century illustrate to perfection the twin tendencies that support speculative music. On one hand there is the mystic who unveils secret correspondences and rises to heaven on the wings of the *Heiliger Dankgesang*; on the other, the practical and learned editor of a political journal (*Le Dix Décembre, journal de l'ordre*, 1849-1851) and author of a *Roman alchimique* who was interested in laboratory alchemy.³⁶ This difference affects their attitudes to the past. Lacuria, like most mystics, was not greatly concerned with a past that was actualized every day for him in the Catholic tradition. For the alchemist, the past contained secrets that still demand study.

Lucas is quite unambiguous about his interest in these studies. He was in the first instance a Platonist, but also admired Kant and Herder among the moderns. Like the latter, he did not want to separate metaphysics from its application to material phenomena.

There lies the whole secret of the sciences: to discover and order its principles, in the field of our view, principles that necessarily apply to everything and that determine the harmonic relationships of the world.

Music seems to us in many respects to be this new field of possibility.³⁷

Lucas, although devoted to speculative music, saw therein a key to the principles that order the universe, whereas Lacuria found in theosophy the key to the principles of music.

Lucas planned an ambitious program to present the great monuments of musical philosophy in French. It comprised extracts from Plato, Aristotle, Euclid and other Greek philosophers; Plutarch's dialogue *On Music*; Descartes' treatise; extracts from Kepler's *Harmonia mundi*; the treatises of Mersenne, Monteverdi, Rameau, d'Alembert, Rousseau; Burette on the music of the Ancients; Villoteau on the music of the Arabs; the English writers on the music of India; and a general critique of all the modern authors.³⁸ Lucas's *Une Révolution dans la musique* contains as its Appendix the first publications of this program (which remained unfulfilled): Euclid, translated by P. Forcadel, and Plutarch by Burette. Lucas was no idolizer of the Greeks, whom he thought devoid of practicality. The ancient philosophers, "drawn to the study of music theory by the thirst of discovering the universal harmony, which was the Philosopher's Stone of their time,"³⁹ did not go far enough in their studies to descend to practical music. The Ancients knew about successive intervals,⁴⁰ but lacked the comprehension of what is most essential in music, as in the cosmos: the Law of Attraction.

We have seen several musical applications of this doctrine of universal attraction and its opposite, universal repulsion, which is fundamental to every

Hermeticism. I mentioned in passing Lucas's comparison of the attraction between semitones to Kepler's law of planetary attraction. ⁴¹ In Lucas's case, the subject of musical attraction was inseparable from his keen partisanship for the enharmonic genus, in which he perceived "the last word in melodic attractions."⁴² Plutarch deplored the loss of this genus, he says, but it survives today in the music of the Arabs and of India the latter being, in Lucas's view, the primordial source of music, from which it later passed through Egypt to Greece.

The search for the enharmonic genus of the Greeks concerned professional musicologists at this period, such as Alexandre-Joseph-Hidulphe Vincent (1797-1868), the author of a learned study of the existence of harmony in Greece and Rome. Vincent believed firmly in it, whereas Fétis disbelieved in it with equal conviction. In about 1850, Vincent invented an instrument to demonstrate it: a harmonium with two keyboards tuned a quarter-tone apart.⁴³ Fétis seized the opportunity to sully his rival's reputation when he wrote the entry on Vincent for his *Biographie universelle des musiciens*:

The use of the quarter-tone in the Greek enharmonic genus became a veritable passion for [Vincent]. Persuaded that modern music would be regenerated if one brought this interval into currency by introducing it into harmony, he clung to this idea, built a harmonium whose keyboard was divided according to this enharmonic system, and, charmed by this barbarous music, made experiments on it that forced all the hearers to block their ears.⁴⁴

Vincent deserves credit, along with Laborde, for having taken the trouble to make audible this enharmonic genus, whose absence from modern music was merely regretted by Fabre d'Olivet and Louis Lucas. With such an instrument one could demonstrate scales such as the enharmonic Dorian mode (E', C, C-, B, A, F, F-, E) while accompanying it with appropriate harmonies provided that one believed the Ancients to have done so.

Another novelty in Lucas's book was his praise of peasant music, especially the Breton. In Brittany, he says, one can still hear the enharmonic genus in all its purity exactly as it existed two thousand years ago.⁴⁵ He compares the freshness and inspiration of the young peasants' songs to the "coldness of fixed-tone instruments."⁴⁶ This is the first symptom of the movement in the heart of esotericism that was seeking, especially after 1870, to rediscover the truths hidden in popular traditions.⁴⁷ In 1856 a certain M. Usmar Bonnaire, belonging to the same current, was hoping to reawaken rural France to the powers of music in the interests of regenerating their morals. These words of Bonnaire, simple as they are, seem to carry echoes of Villoteau's praises of the human voice, Azais's theories on the propagation of sound, and the efforts of scientists to ascertain the physical effects of music:

The human voice is thus the magic wand of the regeneration of a people by the power of harmony, a vibrant and magnetic power which propagates in concentric rings with instantaneous speed and produces those unanimous explosions, those spontaneous repercussions, that are the only worthy reward of noble imaginations. ⁴⁸

Between its long introduction and its appendices, Lucas's *Une révolution dans la musique* comprises only two chapters: "Metaphysique de l'harmonie pure" and "Metaphysique de la mélodie pure." His harmonic theory has no Pythagorean horror of the number 5: everything comes from the first, third, and fifth harmonics. "Five, the antagonistic point, is probably the distance at which the attractive activity of One,

losing its strength, allows the existence of a new center of attraction. Three, placed between 1 and 5, is less a new center of attraction than an irresolute element between two forces whose antagonism alone preserves it."⁴⁹ These principal notes compare with the primary colors, the others filling out the spectrum:

C	Red	
B		violet
A		indigo
G	Blue	
F		green
E	Yellow	
D		orange
C	Red	

Lucas does not make these correspondences lightly, out of a liking for clever schemes, but in the spirit of a man of science who believes that:

Chemistry, assisted first by mathematics, intelligently understood, honestly dwelt on, then by music, whose treasures are still at this very moment sealed with a great seal, will inaugurate an age of marvels in which man will no longer need interpreters in his converse with nature.⁵⁰

Lucas reminds us that one's reflection in a mirror corresponds, molecule for molecule, with our body; "in the same way, when we hear a tone, the simple or SERIAL vibration is equivalent, molecule for molecule, with the vibrating body."⁵¹ Therefore, he says, colors and tones are identical in their relationships.

Lucas was impatient with the conventionality and the self-imposed limits of the music of his time. "Why have we stupidly imprisoned ourselves in those two eternal types, major and minor?"⁵² he asks; also: "tonality is not the delimitation of an archetypal or absolute series. It is the more or less persistent admission of a certain formula, to which everything is related or

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conformed by a law of comparison and equilibration." ⁵³ Alluding to Rameau's fundamental bass, Lucas says that to explain the necessity for discords to resolve by moving down a fifth is only a useful formula, and by no means an absolute law.⁵⁴ He is the first of our musical esotericists to be on the "left wing": while admitting the value of the speculative music of Antiquity, and while searching for the principles that determine the harmonic relationships of the world, he advises modern people to be modern, to free themselves from the shackles of habit and from an art mired in convention. Peasant music, Oriental music, experimental music with quarter-tones, unknown modes, prohibited resolution, even the rejection of tonality: he offers all of these to enlarge the field of musical possibilities. A hundred years later, his program would have been followed in every detail.

Louis Lucas is in a sense the key figure of the period from 1840 to 1875, since in his modest work he touches on all the themes that other writers and theorists were treating in isolation, and seldom with such clarity: (1) the rediscovery of the principles of ancient music and ancient wisdom;⁵⁵ (2) the correspondences of tones with other fields (colors,⁵⁶ planets,⁵⁷ etc.); (3) the improvement of modern music by introducing forgotten resources (enharmonics, etc.); (4) the re-evaluation of popular culture.⁵⁸

Lucas was rediscovered by the occultist Papus at the end of the century, and installed in the pantheon of Hermetic authorities along with a careful selection of equally obscure contemporaries: Lacuria, of course; Frédéric Portal (author of *Des couleurs symboliques*⁵⁹), and J. Malfatti de Montereggi (author of *La Mathèse*⁶⁰). The latter works, though they contain nothing relating to music, are among the most important productions of mid-century Hermeticism.

The Kastners: Aeolian Harps and Singing Flames

The nearest thing to a response to Louis Lucas's program, whether knowingly or otherwise, was the work of the Alsatian composer and theorist Jean George Kastner (1810-1867). Especially relevant are two of his *Livres-Partitions*, an idiosyncratic kind of publication combining a learned treatise with an original composition: *La Harpe d'Eole et la Musique cosmique* (1856) and *Les Sirènes* (1858). Freed by his marriage from the necessity to earn a living, Kastner devoted himself to these and other encyclopedic projects that were recognized by French and foreign academies.

Kastner's "book-scores" devoted to the Aeolian harp and to the Sirens typify the attitude that we have already seen in Louis Lucas: a high valorization of the past, and an enthusiasm for modernity. Kastner claimed, with justice, that his *Harpe d'Eole* contained the most complete account of cosmic music, including not only Pythagorean beliefs and the various planet-scales of Antiquity, but also the mysterious tones of nature and folklore, vegetable harmonies, the "cry of Memnon," etc. The essay on the Sirens assembles the

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traditions of these mythical beings and also treats musical magic and the tones associated with dawn and the sun. The two "books" make up a compendium of ancient esoteric ideas on music that is still valuable. The "scores" that accompany them are of symphonic poems written for a very modern orchestra including saxophone, saxhorn, piano, etc.

The Aeolian harp was the Romantic poets' favorite symbol of cosmic music. As author of the first *Traité général d'instrumentation*, published in France (1837), Kastner was well-equipped to recreate through the orchestra the mysterious tones of this wind-driven instrument. 61 It was perhaps the same thirst for the mysterious, the nostalgia for sounds not of this world, that drew other composers of the Romantic era to new instruments. Fétis himself wrote a trio in about 1833 for "piano, aéréphone, and polyplectron." 62 Kastner's precocious son, Georges Frédéric Eugen Kastner (1852-1882) invented in 1872 the "pyrophone," a small organ whose glass pipes were made to sound by gas jets. 63 The philanthropist Henry Dunant, first recipient of the Nobel Peace Prize (1901), was interested in the pyrophone, and persuaded Gounod to include it in the score of his *Jeanne d'Arc* (1873). 64 Dunant described the pyrophone to the Arts Association of London as "the philosophical light of natural philosophers," continuing with these significant words:

One might say that the tone of the pyrophone resembles those of the human voice and the Aeolian harp. It is at once sweet, strong, graceful and brilliant, round, pure, and full like impassioned human song, an echo of the innermost vibrations of the soul, something mysterious and undefined; above all, it is permeated with melancholy, which seems to be the characteristic of every natural harmony.

The period of Lacuria and Lucas was an active one in our field. It saw the publication of Fabre d'Olivet's fragmentary book on music (in *La France musicale*, 1842-50); the publication of Fourier's manuscripts and his disciples' commentaries in *La Phalange*, 1849-56; Wronski's *Messianisme* (1847) and Durutte's *Esthétique musicale: Technique* (1855). In the occult world in general, it was the time of the first phenomena of "modern spiritualism" (Hydesville, New York, 1848) and their repercussions in London and Paris; the meeting of Wronski with Eliphas Lévi in 1852, Lévi's first evocation of Apollonius of Tyana (London, 1854) and his *Dogme et rituel de la haute magie* (1856); the entrance onto the spiritualist stage of Allan Kardec (1856); Victor Hugo's conversations on the island of Guernsey with the spirit of Shakespeare (1854); the reception at the Emperor's court of the astrologer Jean-Baptiste Pitois; 65 Portal's book *Des couleurs symboliques* and Baudelaire's poem *Les Correspondances* (both 1857). This is enough to show how many of the currents that would dominate *fin de siècle* occultism were rooted in this period.

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There is a further field that touches on speculative music but has been neglected by all our authors except Fabre d'Olivet. This is music therapy, the application of the powers of music to soul and body to which every Pythagorean subscribes. In the nineteenth century it was less a matter of belief than of explanation: how was one to reconcile these legendary powers of music with the findings of modern physics and psychology?

I mentioned that Lacuria's trinitary harmony included three "imponderable fluids": they are the caloric fluid (heat), corresponding to the Father, the electrical fluid (Son), and the luminous fluid (Holy Spirit). The hypothesis of these fluids is an example of the long attempt to bridge the gap between matter and spirit (or mind), from the "animal spirits" of the Renaissance to the ether of early twentieth-century physics. In the middle of the nineteenth century, all possibilities were still open, and the theory of fluids enjoyed a vigorous career in the scientific world.

It was in this context that Dr. Antoine Joseph, called "Hector" Chomet (born 1808) was able to reflect in the 1840s on the two alternative acoustical theories. One holds that sound propagates in solid matter by communication from molecule to molecule; the other, that space is filled with fluids including those of heat, light, and electricity. These two theories are as old as Democritus and Aristotle. We may recall Azaïs' acoustical theory (Chapter Five), which tried to reconcile them by positing that these fluids themselves are made of "tiny globules." Chomet did not follow this opinion: he believed the fluids to be imponderable, and that "sonorous fluid holds a fully analogous place beside the other three." ⁶⁶ This served him as an explanation of all the psychological and physical effects of music, which he did not find adequately explained by the movement of air alone. He mentions as an example the extraordinary echoes heard in the Louvre and other places.⁶⁷

Chomet tells us that his work was prepared in response to an invitation received in 1846 to give a lecture at the Académie des Sciences in Paris. But political events intervened, and the lecture was never given. Thirty years passed before he returned to his manuscript to complete and publish it, as *Effets et influences de la musique sur la santé et sur la maladie* (1874). In the meantime, a book appeared that was very close in character to Chomet's, such that one cannot be sure which has priority. This was *Les Phénomènes de la musique, ou l'Influence du son sur les êtres animés*, by Louis Adolphe Le Doulcet, marquis de Pontécoulant (1794-1882).⁶⁸ If Dr. Chomet's work was the fruit of thirty years' thought, that of the Marquis was born in a single night. De Pontécoulant says that he had to prepare a lecture for the following day, but that his new neighbor was a pianist who gave him no peace, until at two in the morning she agreed to come and take down his dictation.

De Pontécoulant also begins with the fluids. He asks what the sonorous fluid can be, since it is evidently neither Lamarck's etheric fluid or Newton's

etheric medium. It must rather belong to the same family as the electric, galvanic, magnetic, luminous, and caloric fluids, whose existence was once denied but which, says the Marquis, are now being studied. Without the hypothesis of a sonorous fluid, there is nothing left but the vibrations of the air, which cannot possibly account for all the influences of sound. ⁶⁹ For example, De Pontécoulant had "seen a subject put to sleep by simply touching a guitar that had previously been magnetized, the sonorous fluid being propagated by the vibration of the strings."⁷⁰ He writes of the physical powers of sound, the terrible effects of loud noises,⁷¹ and the fact that it propagates faster in water than in earth: these alone contradict those who think the movement of the air to be the exclusive cause of sound. He rejects any supernatural explanation of the powers of music and any connection of it with astrology, magic, and theosophy.⁷² His work is a catch-all of examples of the powers of music over matter, animals, and human beings. De Pontécoulant offers many anecdotes and examples of music's use in medicine, from Antiquity to contemporary experiments at the hospitals of Salpêtrière and Charenton. He has no doubt that modern music is as powerful as that of the Ancients.

Chomet and de Pontécoulant occupy a watershed in the history of music therapy. They had read the authors of the previous century, who had studied most of the ancient writings and never tired of recounting the anecdotes and stories of Saul and David, Pythagoras, Martianus Capella, Athanasius Kircher, Farinelli and Philip V of Spain, etc. Those authors, such as Louis Roger, might well theorize about the physiology of music and the vibration of parts of the body in harmony with musical tones, but they did not live at a time when medical experimentation encouraged the scrutiny and scientific application of these theories. De Pontécoulant and Chomet, on the other hand, belonged to the beginnings of modern science, especially physics and medicine. Still uncertain as to the basis of physics, scientists were willing to entertain theories of "imponderable fluids" and to allow that sound might be a phenomenon *sui generis*, while in medicine it was a time of experimentation that permitted all manner of therapies. These authors respected the past, but their eyes were fixed on the future, in which what was formerly occult might become plain and scientific.

All the same, there was a want of precision and practicality in their theories of the powers of music, which would soon be excluded from serious scientific research. A Pythagoreanism worthy of the name should imply an exact knowledge of the powers of sound, which would require a knowledge founded on number and on its links with body and psyche. Several of our authors were trying to attain such exact knowledge, and hoping to find it by drawing up tables of correspondences between the different fields of existencenumber, tone, colors, planets, etc.as if certitude in one field might guarantee it in the others. What they lacked, with the single exception of Charles Henry, was the power to connect these elegant and intellectually satisfying tables with human physiology and psychology.

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A necessary step in the quantification of music was to establish a fixed standard of pitch. None such existed in Europe before the mid- nineteenth century, when there was still hesitation between the standard of A=440 vibrations per second of the Stuttgart Congress (1834) and the A=435 of the Paris Commission (1859). The A=435 gives a C above middle C of 522, according to just intonation (the A-C minor third tuned as 5:6); equal temperament gives a C of 517. This number was so close to 512, which is the ninth power of 2, that some proposed lowering the standard sufficiently for C=512 to become the universal "diapason." Then all the Cs would be tuned to the powers of 2 vibrations per second. Since C is in a sense the fundamental tone of our system, this standard would have the advantage of aligning the musical system with our standard of time. Professor Ernest G. McClain's researches into ancient Chinese tuning systems suggest that this was indeed the standard arrived at as early as the Han Dynasty.⁷³ If adopted, it would have given ironic confirmation to the fantasies of Pythagoras as pupil of the Chinese!

The question remains of which note actually is the fundamental one. Orchestras tune to the principal oboist's A. Modern notation and the keyboard favor C. For Alphonse Toussenel, author of a charming Fourierist work of 1847, *L'Esprit des bêtes*, the absolute tone of nature is G, being analogous to the yellow ray of the spectrum and the planet Jupiter; also the favorite pitch for the mooing of cows.⁷⁴ For Edmond Bailly, as we will see below, the tone of nature is F. For Fabre d'Olivet, the privilege is shared by F and B, twin principles of his cosmic-musical system. For the ancient Greeks, the mese E was the final of the Dorian mode and the tone of the sun. For a certain Dr. Collongues, who discovered in 1860 "the laws that control vital vibrations,"⁷⁵ and for Ernest Britt's synthesis of music, the fundamental tone is D. Thus every note of the diatonic scale has had its supporters.

This mid-century period was full of optimism for music's progress. There were efforts to set the musical system on a scientific basis; to fix the pitch-standard; free composers from the artificial constrictions of harmonic and contrapuntal "laws"; open up to them the whole extent of vibrations as sources for new scales of which some were also the most ancient, new chords, new timbres sounded on new instruments . . . and if all this succeeded, what wonders might music not achieve?

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Notes

1. The bibliography of *Les Harmonies de l'être* is quite complicated; see its analysis by Robert Amadou (Amadou 1981a, 381-387). Three numbers of the journal *Atlantis* contain the most complete dossier on Lacuria, the work of Mr. Amadou and others. The first edition of Lacuria's work (1844-47), which is the edition reprinted by Editions Traditionnelles, was almost doubled in size by the additions provided by René Philipon, editor of the posthumous second edition of 1899. The Bibliothèque Municipale de Lyon contains hundreds of pages of manuscript drafts prepared by Lacuria in view of a new edition, which Philipon used in enlarging the work.
2. The story is told in Serre 1910, 8.
3. For other critics, the book sinned in the opposite direction. The Fourierist Hugh Doherty (see Chapter IV) reviewed it in *La Phalange* VI (1847), 297ff. He praised it for its spirit of tolerance, but found that Lacuria "s'est trop conformé, selon nous, à la routine théologique."
4. Hardouin-Fugier 1981, 347.
5. Lacuria 1899, I, 5.
6. Lacuria 1899, I, 22.
7. Lacuria 1899, I, 55.
8. Lacuria 1899, I, 23.
9. Lacuria 1899, I, 25.
10. Lacuria 1899, I, 27f.
11. ". . . plus ou moins mêlées d'erreurs." Lacuria accepted no religion but Christianity as a source of truth.
12. Lacuria 1899, I, 84.
13. The 1844 edition comprised the first volume of the work. The second, of 1847, comprised a corrected version of the first volume, and a second volume.
14. See Lacuria 1899, I, 198.
15. This is one of the themes of the chapter "Métaphysique de la mélodie pure" in Lucas 1849. I do not know whether Lucas had aired this idea, such that Lacuria could cite him in 1847. The two authors shared similar theories about color-tone correspondences, but their schemes are simple enough to have been invented independently.
16. Lacuria 1899, I, 198.
17. Lacuria 1899, I, 199.
18. Lacuria 1899, I, 201.
19. Lacuria 1899, I, 202.
20. Lacuria 1899, I, 202.
21. In his drafts, Lacuria also tries out an entirely different scheme, with the sun-F-green-Holiness at the top, proceeding to the right: Mars-G-blue-Wisdom; Jupiter-A-indigo-Justice; Saturn-B-violet-Eternity; Moon-C-red-Life;

Mercury-D-orange-Liberty; Venus-E-yellow-Light or Harmony. Bibliothèque Municipale de Lyon, Ms. 594 (A) 3 (4), 55.

22. Lacuria 1899, I, 207f.

23. Amadou 1981b, 61.

24. Lacuria 1899, I, 74.

25. Amadou 1981b, 60.

26. See Amadou 1981b for the description of these activities. The manuscript sources are in the Bibliothèque Municipale de Lyon.

27. Biographical introduction by Felix Thiollier to Lacuria 1902, 15. For the bibliography of this much-reprinted work see Amadou 1981a, no.315, 428.

28. See the study and summary of *Les Harmonies de l'être* by Luc Hizarbin in *Le Voile d'Isis* 148 (1894) and subsequent numbers.

29. Thiollier in Lacuria 1902, 6-13.

30. This is Thiollier's opinion; the scores are lost.

31. Inscription by Debussy on a copy of his *Cinq Poèmes de Charles Baudelaire*, given to Satie, October 27, 1892.

32. Thiollier in Lacuria 1902, 5.

33. Unnumbered page in Bibliothèque Municipale de Lyon, Ms. 5792.

34. Lacuria 1902, 6.

35. Lucas 1849, with preface by Théodore de Banville, was reissued, unaltered and with the same subtitle, as *L'Acoustique nouvelle* (Paris: Author, 1854).

36. Lucas 1857. Lucas also wrote *La Chimie nouvelle* (Paris, 1854) and *La Médecine nouvelle* (2 vols., Paris, 1861-63). Papus and Stanislas de Guaita mention him with respect, as a scientist with esoteric sympathies.

37. Lucas 1849, 239.

38. Lucas 1849, 234.

39. Lucas 1849, 22.

40. According to Lucas 1849, 20, the Greeks used no chords.

41. See note 15, above.

42. Lucas 1849, 28.

43. For Vincent's view that the Greeks had harmony, and Fétis's refutation, see Vincent 1859, Fétis 1858.

On Vincent's quarter-tone harmonium, see Vincent 1853. Halévy used the instrument in his *Prométhée enchaîné* (1849).

44. Fétis 1835-44, s.v. "Vincent."

45. Lucas 1849, 29n.

46. Lucas 1849, 36.

47. See note 58, below.

48. Bonnaire 1856, 27.

49. Lucas 1849, 43.

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50. Lucas 1857, 182.

51. Lucas 1849, 46n.

52. Lucas 1849, 150.

53. Lucas 1849, 153.

54. Lucas 1849, 168.

55. A parallel work, serious but not entirely satisfying, is Francisque 1869. (Copy in the Bibliothèque d'Arsenal.)

56. Compare the anonymous work *Les Harmonies du coloris* . . . , 1860. (Copy in the Bibliothèque de l'Arsenal.)

57. Compare the curious "Waltz of the Planets" in Bertin 1870, II, 26.

58. In 1875 the composer L.-A. Bourgault Ducoudray made his voyage to Greece and the Near-East, after which he urged composers to use scales from those regions. In 1878 a new journal began, *Mélusine: Recueil de mythologie, littérature populaire, traditions et usages*, which was important in the revival of interest in popular culture during the 1880s.

59. *Des couleurs symboliques dans l'antiquité, le moyen-âge et les temps modernes* (Paris: Treuttel et Würtz, 1857; reprinted with Introduction by Jean-Claude Cuin, n.p.: Editions de la Maisnie, n.d.).

60. *Etudes sur la mathèse ou Anarchie et hiérarchie de la science, avec une application spéciale de la médecine* (Vienna, 1844; French translation by Christien Ostrowski, 1849; reprint with Introduction by Gilles Deleuze, Paris: Griffon d'or, 1946).

61. See Bonner 1969-70, which contains much on Kastner, including a facsimile from the orchestral score.

62. Fétis' trio is mentioned in *La Revue musicale* 52 (January 26, 1833). The polyplecton, a bowed keyboard instrument, was invented by Johann Christian Dietz. I have no idea what sort of *aéréphone* was meant.

63. See Kastner 1874. The pyrophone was demonstrated before the Académie des Sciences on March 17, 1873. On p.16 of the brochure Kastner mentions a harmonica chymique, apparently another instrument, about which I know nothing further.

64. See Felix Christ's article on Henry Dunant in *Der Hang zum Gesamtkunstwerk* . . . , 198. The instrument now rests, inoperative, in the Science Museum, London.

65. Otherwise known as "Paul Christian," and author of *Carmen Sybillarum* (1854), *L'Homme rouge des Tuileries* (1854), and *Histoire de la magie* (1871).

66. Chomet 1874, 154ff.

67. Chomet 1874, 141ff.

68. De Pontécoulant wrote several books on music, especially on instruments. To judge from his title-pages, he called himself variously "vicomte," "comte," and "marquis." His adventurous career took him to Brazil, where he escaped a death-sentence. Living in Paris from 1825, he worked for the Ministry of the Interior.

69. Pontécoulant 1868, 20.

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70. Pontécoulant 1868, 21.

71. He says that an unusual number of cretins were born following the explosion of the arsenal at Landau. Pontécoulant 1868, 29.

72. Pontécoulant 1868, 57.

73. See McClain 1985 for the evidence that the ancient Chinese knew the number of vibrations per second of their bells and tuned them accordingly.

74. Toussenel 1847, 203.

75. "Le Dr. Collongues, en découvrant les lois qui régissent les vibrations vitales, a trouvé que la santé parfaite correspondait au chiffre de 72 vibrations par seconde et que ce son type servait du point de départ à une série d'autres sons correspondant chacun à un état pathologique particulier. Ce chiffre de 72 vibrations par seconde est précisément la tonique de la gamme type absolue dont j'ai donné la génération mathématique dans *L'Ami des sciences*, en 1858, à propos de la découverte du diapason absolu." Coste 1863, 1. A tone of 72 Hz would be D, relative to a C of 64 Hz.

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Title-page of Bailly's *La Tristesse d'Ulaa*

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As a spiritual brother of Fabre d'Olivet and Louis Lucas, Edmond Bailly took up many of their themes and adapted them to the needs of his age. I have already mentioned, among other themes, the superior wisdom of Antiquity and the Orient; the universality of "music" taken in its largest sense; the doctrine of occult correspondences in nature; the powers of sound; the poverty of the modern musical system; a confidence in modern science and an optimistic evolutionism that held out the hope for surpassing the powers ascribed to ancient music. But there is a notable difference between Bailly and the personalities we have met up to now.

The decisive event in the occult world of the 1880s was the arrival in France of H.P. Blavatsky's Theosophy. Before this decade, French esotericists regarded what little they knew of Hinduism and Buddhism with curiosity, respect, and even enthusiasm. As we have seen, they were happy to acknowledge the superiority of the ancient East, along with that of the Pythagoreans and Egyptians. If the West had fallen into ignorance for some centuries, it remained for modern men, with all their historical and scientific knowledge, to give it a new impulse. The esotericists of the 1850s and 1860s, whether attached to modern spiritualism, to the magical revival of Eliphas Lévi, or to the crypto-masonic orders, all enjoyed this optimism and hope for social renovation, whether of the Right or the Left. Fabre d'Olivet, Fourier, Wronski, Louis Lucas, as well as characters who do not enter this study such as Joseph de Maistre, Ballanche, Saint-Simon, and Lévi himself, dreamed of a Europe that held its spiritual destiny in its own hands, needing no counsellors but its own. Now suddenly there appeared Madame Blavatsky, with her claim that the modern East still preserved its ancient wisdom, and that her "Mahatmas" living in Tibet had nothing but a kindly disdain for Europe's pretensions to superiority.

It was one thing to applaud Plato when he informed his readers that the Egyptians regarded the Greeks as children. It was quite another to be told something similar by a living woman. Was one to believe Blavatsky or not?

This was the question that no esotericist could now avoid. I have treated the matter at length in other books (*The Beginnings of Theosophy in France* and *The Theosophical Enlightenment*). Here it is important to record that Papus and Saint-Yves d'Alveydre, defenders of Western esotericism, at first warmly welcomed the message from the trans-Himalayan masters.

Edmond Bailly, whose dates of birth and death I have not ascertained, was a lifelong and faithful Theosophist. Although he has not yet found his biographer, the known activities of this former supporter of the Paris Commune, with his smiling wizard's face, shed light on the whole period of this chapter. Around 1885 Bailly opened a bookshop, "L'Art indépendant," which together with Lucien Chamuel's "Librarie du merveilleux" (opened in 1888) played a leading part in propagating esoteric and avant-garde artistic ideas. Following Parisian custom, the bookshops were also publishing houses. Bailly's shop, near to the Opera,² served esthetes, symbolists, "decadents," occultists, and esotericists of every kind: they came there to buy books, to publish their own works, to hold seances, and especially to chat and listen to music. It was a rendezvous of importance to the history of all the arts.

According to Victor-Emile Michelet, an eyewitness of the occultist *fin de siècle*, Bailly "belonged to that category of men on whom the gods have bestowed multiple gifts, while forgetting to add another small, mysterious, and secondary gift without which they will remain obscure: talent."³ Before the "Art indépendant," we know Bailly only as the editor of an unimportant journal, *La Musique populaire* (1881-1883).⁴ He then became acquainted with poets such as Villiers de l'Isle-Adam, Pierre Louÿs, and Stéphane Mallarmé, and with the artists Toulouse-Lautrec, Félicien Rops, and Odilon Redon. As for composers, Claude Debussy "was the most familiar of the visitors to 'L'Art indépendant.' He came almost every day towards the end of the afternoon, either alone or with the faithful Erik Satie."⁵ Michelet describes Debussy playing his latest compositions on the fine piano in the room behind the shop. One might also hear there a young Brahmin singer, Nagendra Nath Ray, whom Bailly befriended in 1896.⁶ During the 1890s, Bailly

published many deluxe editions including Oscar Wilde's *Salomé*, Pierre Louÿs' *Chansons de Bilitis*, and *La Damselle élue* with poem by Dante Gabriel Rossetti, music by Debussy, and cover decorated by the young painter Maurice Denis.

Today's bibliophiles are less interested in the scores of Bailly's own compositions. These are few, but they show a marked evolution under the influence of his composer-customers. The six works that Bailly published are as follows:

1. *Mazouze en fa majeur* for piano (1887)
[an imitation of Chopin]
2. *Danse d'autrefois* for piano, Opus 7 (1888)
[a pastiche of Handel]
3. *Apparition* for voice and piano, poem by Mallarmé (1894)

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[shows Fauré's influence; a featureless melody, with some good ideas in the accompaniment and harmony that only last for a few measures]

4. *Trois Rondels de Charles d'Orléans* for voice and piano, Opus 9 (1895):
"En regardant ces belles fleurs," "En amer n'a que martire," "Dont viens tu maintenant, Souspir"
[more consistent in style, rather Schumannesque; some fine melodic lines, influence of Satie in the third rondel]
5. *La Tristesse d'Ulaa* for voice and piano, fragment of a poem by Fiona MacLeod (1898)
[long and ambitious, with a difficult piano part; strange and dissonant harmonies, more like Satie than Debussy. See Appendix for the score]
6. *Larmes* for voice and piano, poem and cover drawing by Bailly [?] (1901)
[same harmonic style as 5; simple, brief, poignant].

Among the illustrated covers of these compositions, the water-color of *La Tristesse d'Ulaa* arrests the attention (see page 138): it is signed by "M. Bergson-McGregor." Mina (or Moïna) Bergson was the sister of the philosopher Henri Bergson and the wife of Samuel Liddell McGregor Mathers (1854-1918), together with whom she created the rituals of the "Hermetic Order of the Golden Dawn in the Outer." In 1898 the two of them were living at 87, rue Mozart, and attempting to establish a temple of the Golden Dawn in Paris. In March 1899 they staged at the Theatre Bodinière, rue Saint-Lazare, *Les Rites d'Isis*, a combined religious rite and theatrical performance. Who wrote the music for it? We do not know, but it could have been Bailly. In any case, it was Mina who made the French translations of *Ulad*, a story by William Sharp (whose pen-name was Fiona MacLeod), and other writings of the Celtic revival; and it was Bailly who encouraged her, as she told her fellow Golden Dawn initiate, W.B. Yeats. ⁷ During this period the Mathers' were studying Celtic mythology, not only through texts but through the almost daily use of Mina's clairvoyant gifts. Bailly later published *La Légende de diamant*,⁸ seven narratives from the Celtic world, "reconstituted after the astro-mental inscriptions," which are so different in style from his other writings that I suspect that they derived from Mina's visions.

Bailly was no more than a gifted amateur composer, but he felt confident to discuss the difficult subject of musical inspiration:

My ideas on the actual nature of inspiration are somewhat different from those currently held. I do not believe that the artist is a creator, in the proper sense of the word. It is easier for me to admit the existence of some immense reservoir in which, from all time and for ever, is stored the ideal material of all imaginable manifestations of thought, and on which, by a deliberate phenomenon

mysterious workings of consciousness, it is allowed to draw, sometimes to perfection, in proportion to the quantity of the esthetic sense of him who perceives it. For in such a case there is a mental perception, and consequently a mental image: hence the terms inspiration and intuition have only a poetic value, and the artist creates nothing, but causes to reappear on the screen of the physical world things that have long been written on the indestructible screen of the past. 9

Bailly rejects the Romantic idea of the artist inspired by his daemon, or even by God, in favor of that of a great reservoir of archetypes from which privileged persons are able to draw. This reservoir resembles nothing more than the "akashic records" of Theosophy, to which adepts, and to a lesser degree clairvoyants, are supposed to have access.

Bailly was a person of some consequence in the French Theosophical Society. "L'Art indépendant" published *Le Lotus bleu*, the Society's official journal, from 1890 onwards, and Bailly was in charge of subscriptions. (Blavatsky was the Editor-in-chief until her death in 1891.) In 1906 Bailly made an impression at the Third Annual Congress of the Federation of European Sections of the Society, when he presented to the audience his work on the "song of the vowels," and again in 1910, when he organized a concert at the Society's headquarters in commemoration of Blavatsky's death. This concert included *Le Chant des voyelles*, an Indian raga, and music by Borodin, Berlioz, Franck, and Marcello.¹⁰

In 1893 Bailly had founded a new journal, *La Haute Science*, dedicated to publishing original documents in French. The choice of texts shows the Theosophical preference for heterodox Christian sources, the Neoplatonists, and Oriental writings. They were drawn from the Ethiopian Apocrypha, the *Rig-Veda*, the Upanishads, the Zohar; Iamblichus, Porphyry, Proclus; articles by Jules Bois on Cornelius Agrippa, Huysmans on Catherine Emmerich, Albert de Pourvoirville (=Matgioï) on Lao-Tzu. Among the moderns, Fabre d'Olivet, Portal, and Lacuria are admitted. The journal ceased after two years, giving way to a series of limited editions, "La Bibliothèque de la haute science."

This discriminating and wide-ranging selection gives one a context for Bailly's own program of erudite writing. His plans were uncompleted,¹¹ but when he finished is all highly intelligent and interesting. The first and longest item is a booklet of some sixty pages, *Le Son dans la nature* (1900).¹² As a collection of natural and musical curiosities it resembles Kastner's works (which Bailly often cites), but Bailly declares his Hermetic intentions from the start:

Is it modern science that will garner the honor of lifting the Sphingian veil around which impotent Oedipuses circle disdainfully since the flights of ancient Wisdom have ceased? Yes: it is the law of analogies, of correspondences; it is the universal serial system, of which Nature fur-

nishes us examples at every turn, from which one must demand the key to all things. 13

Bailly's world is filled with sound, ranging from the microscopic tones of empty sea-shells to the harmonies of the vast spheres. If science cannot yet explain this, the doctrine of analogy readily sheds light on it: sound has been innate to the nature of things ever since their creation. "In the annals of universal Knowledge, the sacred books where the thoughts of all humanity are condensed, [. . .] we see sound as contemporary to the origin of Things, and all cosmogonies agree in recognizing it as promoting the manifestations of the divine will."¹⁴ He cites the *Chou-King*, the *Tao-te-King*, the Edda, the Voluspa, Hebrew, Greek, Egyptian, and Hindu writings. He summarizes the Greek planet-scales, presenting them as the proof of a secret knowledge of heliocentricity among the Pythagoreans. Then he seeks for celestial

harmony in the data of modern astronomers.

Bailly found the key in Bode's Law, to which he gave slightly different figures than we saw in the anonymous disciple of Fourier:¹⁵

Sun	Mercury	Venus	Earth	Mars	Asteroids
1	4	7	10	15	32
C	C	B _♭	E	B	C
Jupiter	Saturn	Uranus	Neptune		
52	96	192	300		
A _♭	G	G	E _♭		

"Such a chord is unplayable, musically speaking. Its arrangement presents two different tonalities as well as two modes; but the resonance of the four extreme tones, at the top of the scale, is feebler and feebler as one approaches Neptune."¹⁶ But, Bailly says, if we divide the solar system into two regions around the earth, we will find a more satisfying symbolism. First there is a low chord of C, C, B_♭, E, "presented in so gracious a manner that hearing it readily transports us to the happy times of the Golden Age." But we cannot exclude from it "the fierce Mars whose B-natural collides with the gentle B-flat of the planet that engenders Love. Here is the origin of the strife of Violence with Gentleness, matter with Spirit."

The other chord, further from the central sun, is dominated by the minor mode: C, G, E_♭, A_♭. Jupiter's A-flat gives the impression of an appoggiatura, while Neptune's E-flat seems to want to resolve to E-natural, just as Mars's leading-tone tends towards C, "which would re-establish peace and order in the bosom of our discordant decacord and also, I hope, among mankind."¹⁷ Finally, if the fundamental were to resolve to F and Jupiter's tone to G, "it would engender, as a whole, a very extraordinary chord of the major ninth, as originator of a new cycle."¹⁸

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It seems as though Bailly was another victim of that seductive vision of universal harmony, which starts on a basis of facts but ends in fantasy. How else can one qualify these proposals for "improving" the celestial harmony moving a few planets around by a few million miles so that it will agree with our little musical laws? Someone might object that these laws are not little, nor are they exclusive to us. But in contrast to Bailly, there is the example of Kepler whose respect for the exact disposition of the planets was such (none of the approximations of Bode's Law for him) that he deduced a version of the harmony of the spheres quite at variance with tradition, accepting it with all its dissonances as the Creator's unfathomable will. Bailly resembles more Fourier, who dreamed of shifting the planets and moons around for the benefit of the human race. Bailly, too, felt himself the recipient of a special revelation:

For years and years, amidst all the problems I have been concerned with, this one has kept me brooding over its mystery. Today a radiant intelligence, Pythagoras, has held out his hand to me across the twenty-five centuries that separate us, and my joy is boundless in this communion with one of those whom M. Edouard Schuré calls so nobly "The Great Initiates." ¹⁹

After this analysis of planetary harmony, Bailly returns to earth. He offers a collection of anecdotes on the music of Nature, which culminates in an evocation of the nocturnal sound of the city of Paris, the tones of great rivers and waterfalls. In 2600 BCE, he tells us, Ling Lun discovered the note of the river Hwang Ho and fixed the musical scale by it. In *La Magie du son* Bailly tells us that this "Tone of Nature" is F.²⁰

At the Theosophical Congress of early June, 1906, Bailly communicated his re-creation of the "song of the vowels" and performed it twice, in his adaptation for women's voices, flutes, and harps. The booklet of the

same title, *Le Chant des voyelles* (1910), is his most learned work, treating the correspondences that the ancient Egyptians and Greeks saw between vowels, tones, and planets.²¹ Bailly draws from the various ancient sources the following scheme:

Saturn	omega	B
Jupiter	upsilon	C
Mars	omicron	D
Sun	iota	E
Venus	eta	F
Mercury	epsilon	G
Moon	alpha	A

His re-creation of the song is intended as sacred music: an invocation to

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the planetary gods, as practiced in the Egyptian temples. This is the one occasion on which Bailly's learning unites with his gifts as a composer, to create a kind of song that is quite unique. The voices hold to the seven notes and their corresponding vowels. The instruments alternate with them, with arpeggios on the harps and solemn fourths on the flutes. In the super-charged atmosphere of a Theosophical Congress the effect may well have been magical.

In 1909 Bailly founded a monthly journal, *Libres Etudes*, which offered a forum to second-generation Theosophists (Annie Besant, C.W. Leadbeater, Rudolf Steiner) as well as to Wronskians, yoga, and Sufism. Four numbers carried Bailly's *La Magie du son*,²² which was the first part of project for a book, *Du merveilleux dans la musique et de la thérapeutique musicale*. Several of the subjects of *Le Son dans la nature* reappear there, but now subordinated to Oriental sources. Bailly mentions the resemblances between Chinese and Greek music; he returns to the correspondences of vowels and planets as known to the Orient. Like the authors who attribute the power of ancient music to its use of enharmonic intervals, Bailly says that the Hindu mantras owe their power and dynamics to their "hyperchromaticism."²³

One of the objects of the Theosophical Society was to investigate the hidden laws of nature, both through studying traditional writings and through scientific experiment. Bailly compares the Indian doctrine of the *akasha*, the subtle ether, to the "sonorous fluid" of Chomet and de Pontécoulant, and both of them to an order of vibrations as yet unknown. In a universe created by the vibrations of the primordial Word, "there is in the bosom of the universe not a single atom which does not have its corresponding tone," and inversely, "every tone communicates its own vibration to every particle of matter able to emit this same tone or any of its harmonics."²⁴ This is the explanation of the power of sound over matter. Man participates in this power because he is a microcosm:

If we now meditate on the general constitution of the human being, we can easily understand that it is possible for him to act on all the vibratory modes of earthly Nature; even extra-terrestrial nature, because we well know that man comprises in himself all that vibrates in the bosom of our universe. The numerous mineral elements of his lower organism offer him the key to the whole of the mineral realm, just as the vegetable realm is at the discretion of his will through all that his body borrows from that realm; and just as he centers in his person all the properties of the many sorts of animals, one might say that within the world that he inhabits, his domain is limitless.²⁵

But this creative power can also be destructive, This, apparently, is why Bailly does not go into its practical details. He only mentions that the experiments of Arsène d'Arsonval with "inferior tones,"²⁶ those of Champion and

Pellet, who detonated explosives by means of sound, and Keely's motor, of which Blavatsky had spoken enthusiastically. Briefly, Bailly shows a mistrust of irresponsible experiment, both on the part of scientists and of occultists like the Mathers': "These teachings show that the exercise of the magic of sound does not lack danger; it is the same with all ceremonial magic, from which one should abstain if one wants to stay on the path of wisdom." 27

Colonel Rochas and the Experiments with Lina

At the end of the nineteenth century, the frontiers between science and occultism were not yet well-defined. So long as the scientists entertained the theory of ether or subtle fluids, the occultists could welcome them into their age-old family, waiting for science to provide some clarifications of their doctrines of the *akasha*, the *spiritus mundi*, the astral light, etc. So long as physicians such as Charcot and Freud were experimenting with hypnotism, they were half-brothers of the occultists who were well acquainted with animal magnetism and the phenomena of trance.²⁸ Among eminent scientists of this period, Thomas Edison belonged to the New York Theosophical Society, while Camille Flammarion, Sir William Crookes, Sir Oliver Lodge, and William James were all psychical researchers.

Less eminent than these, but not undistinguished in his way, was Lieutenant-Colonel Eugène Albert de Rochas d'Aiglun (1837-1914), an officer in the engineers and, from 1888, Administrator of the Ecole polytechnique. An author of books on ancient fortification and military science, he welcomed the scientific side of Theosophy. His practical interests converged towards this in 1892 with *Les Etats profonds de l'hypnose*, followed in 1895 by *L'Extériorisation de la sensibilité*, published by Chamuel. The second of these is mainly a historical study in which one sees the influence of Baron von Reichenbach (proponent of the "Odic force") and the scientist James Clerk Maxwell (chief authority on the ether).

Although Rochas' experiments had caused him certain difficulties among his professional colleagues,²⁹ he resumed them when he discovered a remarkable medium he calls Lina, who made a stir in the last years of the century. Lina's is not a unique case, but she had the advantage over other mediums of being both cooperative and photogenic. Once hypnotized, she showed an extreme degree of response to music, to the point at which any musical vibration would evoke expressive and interpretive movements. One journalist suggested seriously that composers could use her reactions as an objective gauge of the expressivity of their music.³⁰ Rochas describes his experiments with Lina in *Les Sentiments, la musique et le geste* (1900),³¹ sumptuously illustrated with photographs of Lina and with a fine cover by Alphonse Mucha. Lina could hypnotize and reawaken herself by light pressure on "hypnogenic points." In trance, she could represent any emotion or gesture whatever. Rochas shows a photograph of a kind of veil emanating from her,

which he believed to be her astral body. 32 Looking at it reminded him of Loïe Fuller, the American dancer who was performing in her own theater during the Paris Exposition of the same year: her specialty was a dance with enormous veils which waved around her in very "art-nouveau" fashion. As for Lina, she suffered from the typical ill-health of habitual mediums, attributed to the loss of "fluid."

In one experiment with Lina, made in collaboration with Professor Arsonval and Charles Henry, Rochas used one of Henry's inventions, the *polyphone*.³³ This was a music-box that translated rhythms into mild electric shocks. Lina, connected to it, thought that she was hearing the music itself, and reacted to the pieces exactly as she would have if they had been played out loud. Rochas' conclusion was that music can be perceived without ears, which seemed to him to put the existence of the astral body beyond a shadow of doubt.

Among other phenomena described in this half-scientific, half-Theosophical book, are the eighteenth-century experiments of Ernst Chladni on the formative force of tone, and more recent ones of Margaret Watts-Hughes.³⁴ Around 1890 this American invented an "eidophone," a device that, rather like a telephone, translated sound-vibrations into the movements of a stretched rubber diaphragm. When sand, lycopodium powder, or water were strewn on this surface, one saw figures formed by the tones: complicated geometrical figures, shapes like flowers or like the frost on window-panes. Another experimenter, General Ferrie, used the contrary method around 1894 to translate the visible into the audible. "By means of a microphone and a telephone diaphragm that received the sun's rays through a lens, one could perceive through earphones a noise that, though very faint, was quite distinct. *It is the sun's ray that sings*."³⁵ Such experiments were the scientific reflection of the theme of correspondences made so famous by the poets Baudelaire, Rimbaud, René Ghil, etc., while for esotericists they confirmed the unified theory of universal vibration and of the creative power of tone, attested to in the scriptures of every people.

Spiritualists, Mediums, Occultists

If the mediumistic state gave Lina a sensitivity to music that she lacked while awake, what might this have to offer musicians? The annals of spiritualism are full of examples of phantom music, instruments playing by themselves, mediums playing or composing pieces of a difficulty that they could not match in the normal state, and composers "returning" from the spirit world. I will give some representative instances here.

It is sometimes forgotten that seances of every kind, beginning among Mesmer's disciples, continued uninterruptedly through the nineteenth century. The only innovation of the "modern spiritualism" that arrived from America during the early 1850s was the idea of a deliberate communication

on the part of the dead. The activities of Ema Hardinge Britten (1823-1899) cover the entire period. Born in London, she became a famous medium in America and the quasi-official historian of the spiritualist movement. ³⁶ Already in the 1830s, she had acted as medium for an occultist circle in London.³⁷ In the same decade she came to Paris to pursue her musical studies, and attracted the attention of the piano manufacturer Pierre Erard. Needing to support herself, she was engaged as a demonstrator in Erard's piano showrooms. Her mediumistic gift enabled her to play any piece that was requested, even ones of which the clients were only thinking.³⁸ For Emma, the spirit world surrounding her was as "full of noises" as Prospero's island kingdom: it was for us to draw the melodies out of it. Among her innumerable stories of communication between the two worlds she tells of the violinist Chrétien Urhan (1790-1845) who, having heard a mysterious music in the Bois de Boulogne, that seemed to come from the air, made it into a celebrated piece, *Audition*.³⁹ This would all accord with Edmond Bailly's theory of artistic creation as drawing on the "akashic records."

Sometimes these revelations from the other world claim a lofty origin and pretend to come from great artists of the past. The classic instance is Victor Hugo's conversations with the spirit of "Shakespeare," and the latter's execrable posthumous poems. The case is rarer in music. Musical mediums were typically inspired improvisers. The pianist Jessie Shepard is said to have been able to make the piano sound like a harp, a guitar, even an orchestra and mysterious voices.⁴⁰ Those who attended her seances may well have heard such sounds in the excitement of the moment. Another medium who made a sensation in 1897-98 was the "Man of the Cathedrals" who adopted the Péladan-esque name of Mérovak (1874-1955).⁴¹ Highly gifted as a graphic artist and inventor of Gothic architectural motifs, Merovak contrived to occupy a tiny apartment between the towers of Notre-Dame Cathedral. Gaston Méry, the editor of *L'Echo du merveilleux*,⁴² describes hearing the young man play the piano and organ: he had never studied music, but his beloved Gothic architecture would inspire him to improvise a fantasy music of "vertiginous fugues and crystalline trills." Some people suspected Mérovak of being a trained musician who only pretended to go into a trance. Méry did not think so: he was sure that ten years' study would not suffice to reach such a standard, and that while Mérovak often played the same pieces, he never played them the same way twice.

The critic had him play Rivoire's recording-piano so as to fix one version and compare it with others; it was a *Chant des immortels: marche triomphale* in ^{A_b} minor that he preserved for posterity in this way. The pomposity of style and the poverty of ideas are only too evident from the cold print, but one must allow for the neo-Gothic atmosphere and the presence of the eccentric medium, "febrile, gymnastic, and manic."⁴³

Among professional musicians, the composer Augusta Holmès (1847-1903) attended seances at which she met the spirits of Ambroise Thomas and César Franck. In 1901 she told Jules Bois that "Franck" had done her the

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service of correcting a copyist's error in her symphony *Andromède*.⁴⁴ The Opera singer and medium Claire Vautier (born 1848) described in her *Souvenirs d'une voyante* a phantom music played on the piano that rendered the march from Meyerbeer's *The Prophet* with a novel conclusion: the composer's spirit said that this was the original version.⁴⁵ Charles Gounod, not surprisingly, holds the palm for spirit activities, as he dictated a whole volume of poems from beyond the grave to his mistress Georgia Weldon.⁴⁶

The spirits of great artists encountered by spiritualists, like the impotent shades of Homer's Hades, seem to be incapable of creating great art. Theosophists and other esotericists, unlike believing spiritualists, do not find this surprising, because they do not accept that the entity speaking through a medium is the individuality who lived on earth as Shakespeare, Gounod, etc. They hold that the essence of the being, and that which caused his greatness, has no need to stay in earth's atmosphere. These posthumous creations, when they do not come from the unconscious of the medium or of others present, can only derive from the "psychic detritus" scattered around the world, or else (especially in Theosophical doctrine) from elementals masquerading as spirits of the dead. As for performing mediums like Mérovak, their "marvels" are due either to the activation of unconscious potential or to "possession" (however that may be defined). Their achievement falls far short of that of professional performers, who at their best are not unconscious but hyper-conscious of every detail.

Towards 1897 the well-known occultist Paul Sédir (real name, Yvon Leloup) obtained very strange results from a medium plunged into magnetic sleep, i.e., hypnotized.⁴⁷ Like Rochas and Hughes, Sédir entered on his experiments in a scientific spirit. He thought of them as involving three elements: (1) a sound producer; (2) a receptive medium; (3) a recording apparatus. What he did was to play musical tones (first element) that were supposedly inscribed on the "astral light" (second element), then perceived clairvoyantly by a medium (third element).

Sédir used two sorts of tones: notes on the piano, and Hindu mantras. His report is illustrated with drawings, with some indications of color, temperature and movement. The Buddhist mantram *Om Mani Padme Hum*, translated into four pale-green interlaced circles, with a sensation of cold. The "mantra of the element of ether" was a B-minor arpeggio, visible as a green ring with its circumference ornamented with blue arrows. The "Forms of the Latin Alphabet in the solar astral realm" are made of disks and squares. The lowest C of the piano gave a form like a bright-red helmet, while C-flat was a blue rectangle with a green point at the center.

These experiments preceded by several years the better-known ones of Annie Besant and C.W. Leadbeater, whose results were published as *Thought Forms* (1905).⁴⁸ Recent art-historians admit that these colored illustrations of the human aura had a direct effect on the first abstract painters (Mondrian, Kandinsky, etc.).⁴⁹ *Thought Forms* had the advantage over Sédir's re-

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port of being an attractive book illustrated in color by skilled artists, who interpreted the visions described

to them by the clairvoyant authors. But this kind of "inspired" abstraction goes back at least to the drawings by Victor Hennequin (see page 87) of his "astral clarinet," arabesques inspired by the World-Soul, and even "atoms" with spiky points that prefigure Besant and Leadbeater's illustrations of "occult chemistry." 50

The Synthetists: Swiecianowski; Guyot; Griveau; Azbel

One could write a whole dissertation on the theorists of universal harmony around 1900. Here I will concentrate on some significant and little-known examples. In 1881, a little before the Theosophical era in France, the Polish architect Jules (or Julius) Swiecianowski published at Warsaw a work in French dedicated to King Victor Emanuel: *Essai sur l'échelle musicale comme loi de l'harmonie dans l'univers et dans l'art*.⁵¹ Swiecianowski also believed that the harmony of the arts resembles that of nature, and that the revelation of its secrets is a sacred mission. One of the "secrets" is the triangle with sides of 3:4:5, the key to the harmony of nature and the gravitation of the planets something, he says, of which the Greeks were already aware. The seven planets contain the germs of all beings; their elliptical orbits, with their solstitial and equinoctial points, suggest the symbolic dimension of the Christian cross. Everything is symbolic for this Hermetic architect. He draws up a great table of correspondences, crowned with a keyboard of seven octaves, each octave colored with the seven colors of the spectrum from violet (F) to red (E). Fifteen rows of correspondences show that Swiecianowski had a somewhat Fourierist view of evolution. There are seven periods of the earth, from the mineral to the human, reflected in seven types of harmony among men, seven stages of development of man and of plants, seven types of voice (tears, efforts to speak, soprano, alto, tenor, baritone, and bass). But unlike Fourier, for whom the scale of evolution was a rising one, the development here is from above downwards. Drawing on his own profession, Swiecianowski provides a scale of calculations similar to the ones used by classical architects for the esthetic control of their buildings and he proposes that a building on these principles should be erected in Rome. As we have seen with Charles Henry, and as we will see several times again, the idea of a harmonic canon as artistic yardstick is a leitmotif of the epoch.

Another leitmotif, that of universal harmony, was expressed in more satisfying terms by another former pupil of the Ecole polytechnique, Paul Flambart (died 1940). Under the name of Paul Choisnard, he wrote several works of scientific astrology. Choisnard had learned from his friend August Sérieyx the musical law of the infinite series of fifths, which he developed in a highly original way in two articles of 1900. He submitted his work before publication to Colonel Rochas and to the occultist F.-Ch. Barlet.⁵² Choisnard's thesis is as follows: (1) In musical practice, the spiral of fifths becomes a closed

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circle, the first term, C, being taken as identical to the thirteenth, B#. This operation gives us a circle of fifths that spans seven octaves, from the lowest C of the piano keyboard to the very topmost C. (2) Assuming that one turn of the circle is the equivalent of seven octaves, what would happen if we were to extend the same musical progression both upwards and down? Evidently we would soon be out of the audible frequency range. But faster and slower vibrations do not for that reason cease to exist: the slower ones are perceived as rhythms, the faster ones in the form of electricity, heat, infrared rays, light, ultraviolet rays, X-rays, etc. (3) Suppose that there is an uninterrupted spiral of vibrations, of which every turn represents seven octaves or in mathematical terms the seventh power of two. Our senses give us access only to a few regions of this spiral; our scientific instruments, to a few others. But we cannot imagine that the unknown regions are empty of vibrations. No: all of nature is in vibration, and harmony exists at every level just as it does in the acoustical circle of seven musical octaves. 53

Scientific discoveries soon filled in some more of these "unknown regions": those of long and short radio waves, gamma rays, cosmic rays, etc., leading physicists of the between-wars period to describe the matter-energy universe as nothing but vibrations.

Several people were having ideas similar to Choisnard's, without having any intercommunication. We find

them, for example, in the lawyer E. Guyot, "retired Division Chief, President or Member of several Societies and of the Jury of the Philharmonic Competitions," of whom I know only the single work *La Boussole de l'harmonie universelle, esthétique applicable aux arts des sons, de la couleur et de la forme*.⁵⁴ Guyot follows Wronski's analogy between the generation of the circle and that of the scale, signified by Gauss's "rhythmic" numbers. He is interested in the irrational property of the circle, marked by the irrational number π , and by its incommensurability with the square. He compares it to the year, which does not divide into a whole number of days, and to the scale, which always requires some kind of temperament. The only definite thing in the geometry of the circle, Guyot says, is the series of inscribed regular polygons, whose dimensions

measure exactly the divisions of the duration and pitch of tones, for the same numbers provide them. They also give the dimensions of the rhythmic line that should enter into the composition of every architectonic order, under the straight or even the curved form. Calculations based on these harmonic numbers will have a precision that one can declare *a priori* to be absolute.⁵⁵

Given that "everything in this world is nothing but a more or less sensible vibratory movement," in every field one simply needs to "look for the scale."⁵⁶ His "compass of universal harmony," like Charles Henry's "chromatic circle" and "esthetic protractor," is supposed to be a scientific instru-

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ment, serving as a standard for all the fine arts, and even for philosophy and politics. It consists of eight concentric circles, each divided into 32 parts. Around each circle goes the series of fifths; along the radii, the diatonic series of thirds. This enables the diagram to show the relations of every tone with its neighbors. Guyot suggests parallels with color-harmony, the triad C-E-G being the equivalent of the three primary colors, and with the angles and proportions that give the eye an impression of harmony. If one compares him to the Wronskians of Chapter Five, this retired lawyer is only an amateur in the field of universal explanation. One could say the same of the architect Swiecianowski. But their aspirations and beliefs place them well within the currents of 1900. They have had a fugitive vision of the truths that all our authors hold, and have developed them as far as their philosophy and erudition permits.

A third amateur, Maurice Griveau (born 1851), the author of several popular works on natural history, suggested in 1896 a *Programme d'une science idéaliste*.⁵⁷ He was keen on Charles Henry's ideas, and joined in the quest for an "objective esthetics." Griveau claimed to have invented a new science, called *eurhythmie*. (I note in passing that he preceded in this the two more eminent inventors of eurhythmie, Jacques Dalcroze and Rudolf Steiner.) With this in mind, he drew up an "esthetic Pythagorean table." The "Pythagorean table" was a name often given in France and Italy to the multiplication table set out in horizontal and vertical columns. One axis of Griveau's version has the "categories of impressions or of facts": temperature, odor, taste, sound, light, color, movement, form, temperament, etc. The other has the "successive degrees from weak to strong, from minimum to maximum, which the quality may assume."⁵⁸ It is a direct descendant of the correspondence-tables of Cornelius Agrippa and other Renaissance magi.

Griveau had a highly systematic mind. He gave a series of four lectures on the esthetics of fire, water, air, and earth, then on flora, fauna, and man. His lectures of 1895 were given in various places; out of doors, at the Musée des Arts et Métiers, the Louvre, etc. In 1897 he promised to "let fall the veil which hides the statue of Isis" by revealing to us "the supreme law of beauty," namely that "effort is felt less in proportion as the work is more perfect."⁵⁹ The reader of Chapter Six will recognize this as Charles Henry's principle of dynamogeny; Griveau presents it as an unheard-of revelation, mixing it with echoes of Theosophy ("Isis Unveiled") and of Wronski ("Supreme Law").

Maurice Griveau supposedly lifted the veil with the appearance in 1901 of *La Sphère de beauté*, a work of 980 pages.⁶⁰ His "esthetic Pythagorean table" has grown in proportion to embrace every possible "epithet" and to retrace the whole of human history. In the musical sections of the work,⁶¹ the point of departure is universal polarity, expressed as the octave. This space encloses variously the fixed-tone systems (e.g., C,F,G,C'), the modes, the harmonic series, the scales of Pythagoras and of the physicists, the three Greek

genera. Griveau is more original when he comes to colors and their correspondences with tones. Instead of assigning a tone to each color, he gives it an interval, the intervals of the warm colors being the inversions of those of the cold ones: 62

warm colors

red	orange	yellow
fifth	major third	twelfth

neutral colors

yellow-green	green
minor seventh	minor third

cold colors

blue-green	blue	indigo	violet/purple
fourth	minor sixth	eleventh	whole-tone/nothing

Griveau also brings the intervals into correspondence with the regular polygons. Kepler had proposed this is his early work *Mysterium cosmographicum* (Linz, 1596), but with different results.⁶³ Griveau takes the circumference of a circle as the length of a string, such that its equal divisions made by the inscription of regular polygons are equivalent to the harmonic divisions of the string, and give the series of intervals well known from the harmonic series. Griveau reduces them all within the same octave, so that the diameter, square, octagon, etc. (divisions into 2, 4, 8), all produce the same tone; the pentagon gives the major third (fifth harmonic), the enneagon the major second (ninth harmonic), etc.

One cannot suppress a certain admiration for Griveau's tenacity in undertaking and completing such an enormous work. This omnivorous scholar brings into his system the Gothic rose-windows, historical costume, the harmonious simplicity of sailing-ships, embryology so many things, that his "reasoned cult of Analogy" indeed embraces the whole world.

The last of these universal minds is that of Emile Chizat (born 1855), who also wrote under the names of Azbel, Hizcat, and Athénus. A pupil of Jules Massenet, he was a popular composer whose *Chants de la maison* had sold 100,000 copies by 1908.⁶⁴ Chizat's music is forgotten, but he holds a small place in the history of the public concert for the *Auditions voilées* ("veiled hearings") that he staged at the Galerie Georges-Petit in 1891 and 1893.⁶⁵ Following in the footsteps of Wagner, Chizat was both poet and composer of the pieces that were performed by a small ensemble⁶⁶ almost invisible behind a mound of flowers or a curtain. An actor from the Comédie-Française de-

claimed the words, written in a new genre of "rhymed prose" that was also Chizat's invention. The audience sat on sofas, crowded and a little too warm, but moved to exclaim "This isn't a theater, it's a temple!" In 1891, this was only a passing curiosity, serving to distract newspaper readers from the attacks of anarchists. No one imagined that a hundred years later, most listening would be "veiled," thanks to radio and recording. Nor can many of the listeners have been aware that they were participating in a movement of the synthesis of the arts whose roots were in the Hermetic principles of universal correspondance.

The exoteric inspiration of these invisible concerts was of course Wagner's Festival Theater in Bayreuth, which was the first opera-house to suppress the lighting in the auditorium (thanks to the progress of electricity), the first to hide the musicians beneath the stage and the first to elevate the theater to the status of a temple.

The year 1891 saw several performances in the same spirit. On March 19 and 20 the Théâtre d'Art staged Paul Fort's production of *La Fille aux mains coupées* by Pierre Quillard, the first "symbolist theater" enriched by music, a painting exhibition, and perfumes. In April, Edouard Dujardin tried to start a Wagnerian-style theater in Paris, with the first play of his trilogy, *La Légende d'Antonia*, another example of the darkened auditorium. On December 11 was given the "total art" of Paul-Napoléon Roinard's *Cantique des cantiques*, "Symphony of spiritual love in eight mystical emblems and three paraphrases, with music." This fusion of poetry, colors, music, drama, and perfumes was rapturously received. It had everything: Wagner's *Gesamtkunstwerk*, the synesthesia of Baudelaire (and Des Esseintes), and erotic mysticism. I will return at the end of this chapter to the developments of this kind of performance in the subsequent years.

As for Emile Chizat, he was far from limited to music, or even to the mere synthesis of the arts. In 1893 his alter ego "Hizcat" began a new series of 110 rhymed proses, *La Légende de l'être Althéus*.⁶⁷ Althéus is none other than Man, and his legend is the legend of the world. This work of 500 almost unreadable pages much resembles the *Tradition cosmique* of Max Théon:⁶⁸ it teaches a cosmogony through the adventures of barbarically-named beings. Beneath the surface one senses the influences of Wronski (in the cosmogony of contraries which unite in syntheses in order to manifest on a further level); of Fourier (development of the earth, its Saturn-type ring, and its multiple moons); and of Theosophy (evolution of successive humanities on earth).

The motive-force of Chizat's universe is naturally vibration, which acts on the ideal as well as the actual plane. In his next work, *La Beau et sa loi*, Chizat, now calling himself "Azbel," gives two definitions:

Idea. Vibration presenting itself to the intelligence which resolves it into a sensible image (bound Idea) or into sentiment (unbound Idea).⁶⁹

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Vibration. Phenomenon of simultaneous unbinding and binding, of a universal order, provoked by an agent of relation, itself vibrating. There is no phenomenon more important than vibration. Nothing is simpler, nor more complex. None is more general. In fact, life is an absolute phenomenon, which the dialtheic can at first only define by the definition of the Universe itself in these terms:

The Universe is the Vibration of a composite quality (Well-Being), in the simple quality (Being).

Hence, by relative application:

Vibration is the active (or passive) manifestation of a more or less composite quantity, in a more or less simple quantity.

Which inevitably comes back to the definition of the Idea itself.⁷⁰

One can classify all these theorists of universal harmony according to whether they choose the line or the circle as their archetypal figure. The votaries of the line (which implies polarity) include Fourier, Lacuria, and Swiecianowski, all of whom see the musical scale as the symbol of a spiritual or material evolution. Wronski, Henry, and Britt see the principle of all things, including the scale, in the circle. Saint-Yves d'Alveydre, syntheist of syntheses, will use both figures: the circle for his "Archéomètre," the line for his "Règle musicale" (see next chapter).

Azbel belongs to the first class. He prefers a system based on the two complementary relations of "Intention" and "Execution," which become the coordinates of a sort graph. Here is one consequence of this system. Azbel has convinced himself that the language of Beethoven is the purest example of the masculine esthetic, while that of Wagner exemplifies the feminine esthetic. He demonstrates this in the very curious fashion of plotting melodies by each composer on his graph, and analyzing them in the language of his system. The melodies he chooses are the opening theme of the second movement of the "Pathétique" Sonata, and the Prize Song from *Die Meistersinger*. Beethoven's melody is written from right to left, proceeding from the side of "Intention" to that of "Execution," from "the Idea of Being (unbound)" to "the Idea of Well-Being (unbound)."⁷¹ Wagner's tune, written from left to right, goes in the inverse direction.⁷² It does seem extremely naive to treat Beethoven and Wagner in this fashion, but one has to credit Azbel with being the only one of our speculative musicians to have tested his theories against "real" music by great composers. The rest of his book treats the synthesis of harmony with colors, planets, politics, the family, the homeland, death, etc.

Azbel published a supplement to *Le Beau et sa loi* the following year: *Le Son et la lumière et leurs rapports communs*.⁷² It is a two-page flyer with two hand-colored plates, intended to publicize the ideas of his large book and to propose a new correlation of tones with colors, based not on poetic or Hermetic correspondences, but on the speed of vibrations as calculated by mod-

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ern physics. Red, as the bass of the visible spectrum, vibrates at 333 trillion per second. Violet, at the other limit, is 780 trillion. The visible spectrum thus covers the interval of 333:780, i.e., an octave less a minor third. Here, Azbel announces triumphantly, is the origin of the minor mode!

Emile Chizat, for all the discoveries of his alter ego, was well aware that 1900 was the year of the Universal Exposition. He had prepared for the occasion a *Cantique des nations*, a solemn ode for choruses, recitation, and orchestra, which he submitted to the organizers. His universal ambitions also applied to practical matters. The *Cantique* was to be preceded by a solemn processional of 500 symbolic personages carrying the flags of the nations, etc., then the music would be performed by 3000 performers, including 300 violins, 50 harps, 800 wind players, an invisible choir, and reciters with megaphones. The work begins in D and modulates downwards by fifths, during its five episodes, to E. It is astonishing to learn that Chizat did succeed in getting the fifth part of it, *Prière à la patrie*, performed at the Salle des Fêtes on November 3, by 100 voices and 200 instruments. The seven pages of the score show an absolute banality of invention.

In the following years it was the cosmic aspect of his work that most concerned Chizat. In 1903 he published *Harmonie des mondes: Loi des distances et des harmonies planétaires*,⁷³ in which he looks for harmonies in the well-worn numbers of Bode's Law:

Sun	Mercury	Venus	Earth	Mars
1,2,3	4	7	10	16
C,C,G	C	B _♭	E	C
Ceres	Jupiter	Saturn	Uranus	Neptune
28	52	100	196	388
B _♭	A	G(♯)	G	G

Azbel admits that this law is "of a procreating order," essential and elementary, and needing to be completed by practice: in other words, it is approximative. The real distances of the planets from the sun require a much more complicated system. The sun takes the first three harmonics of C, octave C, and G, to which Mercury adds the fourth harmonic of another C. This is the basis of the great major chord to which

all the planets are subject in one way or another. The B_{\flat} of Venus should have been another C. Its present tone is not a wrong note, says Azbel, but a "passing tone beside its real harmonic C, which continues to exist as a harmonic wave."⁷⁴ Thus one should understand there to be a "*trille d'aviation*" (his term) between the two tones. Earth, for its part, "tends to move away from the sun in order to approach the planetary harmonies of the beyond that are more advanced, 'more intellectual'";⁷⁵ but currently it tends towards the sun. So he gives it an "aviation trill" from F to G. Below Mars, he is aware of a small planet,

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Eros, which takes the B_{\flat} . Mars is at the correct station. Next, a series of asteroids or "telescopic planets" gives a chromatic scale between the two Es. The three major planets have a centrifugal tendency towards "the universe of the beyond," the ultimate C. Therefore they all sound trills: Jupiter, G-A; Saturn, G- G^{\sharp} ; Uranus, G- G^{\sharp} . The outermost planet known before the discovery of Pluto in 1930 was Neptune. Its real distance should have given the number 300, not 388, so that it completes the universal chord with an E. Thus the entire solar system sounds a magnificent chord of C major or at least it will be fit to do so when the cosmic harmony is established.

There are echoes here of Kepler, of Fourier, and perhaps of Edmond Bailly, whose adaptation of Bode's Law, if Azbel knew it, must have seemed much too simplistic. My comments on Bailly (page 144) apply here, too.

Azbel reappeared in 1909, writing on the esthetic aspects [!] of the Dreyfus case. A few years later, in 1914, he announced a forthcoming work with a leaflet, *La Musique et la voix des nombres dans la vibration*.⁷⁶ Now he has become a pure harmonist, devoted to the "harmonic Science of Numbers" and following the tradition of "Pythagoras, Eratosthenes, Euler, Rameau, Helmholtz, etc." This leaflet has as its particular theme an adaptation of the Sieve of Eratosthenes, an ancient method for finding prime numbers, to the musical system: each prime number starts a new series of tones. But the war intervened, and the promised work never appeared.

If Azbel could consider the Dreyfus Affair from the esthetic point of view, the problems of a world war gave him even more exercise for his theory. In 1915 there appeared his *La Guerre et l'harmonie devant l'esthétique et l'idée de Dieu*.⁷⁷ It is an artist's protest against events that are totally incomprehensible to him. "War," he says, "reveals an ACTION of an order exclusively male, but not virile that of Adolescents [. . .] it is unjust, ugly, unintelligent."⁷⁸ A few months later he assumed another name, "Athénus," to analyze the war within the only framework available to him:⁷⁹

the *Universa* consent of admiration [for Germanic music] seems to have stopped with Beethoven (who was of Dutch origin, besides, and whose mind was universal in its tendency), just as its truly harmonious literature stopped with Goethe (whose mind was equally *universa*, and conspicuously French in culture), and these at virtually the same moment. This was the very moment when Prussian pan-Germanism took root, from which in the course of time was born the musical pan-Germanism of Wagner, which caused everything to deviate. Wagner INVENTED nothing in the way of method, any more than Bismarck or Moltke. These three drove to excess, or to colossalism (in any case, to abnormality) the application of the strategic unifications of art, politics, and war; they brought in the laws of *quantity* above those of *quality*, to the extent of suppressing the latter in the leading *bond*, producing strength through number, dimension through thickness, greatness through mass [. . .] the

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German military action seems to perform the most boring and noisy passages of his barbaric

tetralogy [i.e., Wagner's *Ring*], one after another. 80

I now leave this complex and multiple personality, to whom the jealous gods refused even so slight a talent as Edmond Bailly's, and turn for the first time in this study to real composers, namely to Satie and Debussy. To what extent can one give in to the temptation to class them with the esotericists?

Were Satie and Debussy Occultists?

Erik Satie (1866-1925) met Joséphin Péladan in the period when the latter was announcing the creation of his "Ordre de la Rose+Croix Catholique" (otherwise called "Ordre de la Rose+Croix du Temple et du Graal") in rivalry to the "Ordre de la Rose+Croix Kabbalistique" of Stanislas de Guaita. Péladan's three *mandements* or bulls (in the papal sense), dated May 14, 1890, also announced an artistic exhibition. This would be the "Salon de la Rose+Croix," an annual event from 1892 to 1897.

Satie is known to have been the official composer of this order, but it is as well to be precise about his collaboration with Péladan. It was limited, in fact, to the first Salon in 1892, where we should distinguish three separate events:

(1) On March 10, 1892, at 10 in the morning, a solemn Mass of the Holy Spirit was celebrated at the church of Saint-Germain d'Auxerrois. The mass was preluded by the three *Sonneries de l'Ordre* composed by Satie for harp and trumpet. Also performed (presumably on the organ) were four extracts from Wagner's *Parsifal*: the Prelude, the Grail Supper, the Good Friday Spell, and the Finale.⁸¹

(2) After the mass, Péladan opened the exhibition at the Galerie Durand-Ruel, at 11 rue Le Peletier. Overtly inspired by Bayreuth ritual, the great salon, full of flowers and incense, opened to the sound of the same *Sonneries* of Satie and the Prelude to *Parsifal* played by brass instruments.⁸²

(3) On March 17, 1892, at 8:30 p.m., the first of five "Soirées de la Rose+Croix" was held in the same gallery. These are the programs as announced:

1. Palestrina's "Pope Marcellus" Mass, sung a capella by 40 voices under Bihn Grallon; *Sonate au clair de lune*, sung fragments from an opera by Benedictus [i.e., Judith Gautier]; *Le Fils des étoiles*, "wagnérie kaldéenne" in three acts by Sâr Péladan, with a *Suite harmonique* by Erik Satie.

2. Second soirée, called "Wagnerian," on March 21: Acts I and II of *The Flying Dutchman*; Grail speech from *Lohengrin*; Sachs' soliloquy

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from *Meistersinger*; death of Isolde from *Tristan*; Act III of *Parsifal*, almost complete, never before given in Paris (conducted by Benedictus). A second hearing of Palestrina's Mass followed.

3. Third soirée, called "César Franck's," on March 24, conducted by Vincent d'Indy, with a second performance of *Le Fils des étoiles*.

4. Fourth soirée, called "Beethoven's" [undated], with a third performance of *Le Fils des étoiles*.

5. Fifth soirée, dedicated to Franck's pupils, conducted by d'Indy, with a third hearing of Palestrina's Mass.

One can see that Satie's music played quite a minor role in Péladan's productions, although *Le Fils des étoiles* was revived for the second Salon in 1893. The three *Sonneries de la Rose+Croix* were magnificently printed by Rouart Lerolle, with illustrations from paintings by Puvis de Chavannes, thanks to the support of Count Antoine de La Rochefoucauld, patron of the first Salon.

The Salon closed on April 11. La Rochefoucauld broke with Péladan in the same month, to the

accompaniment of much journalistic noise. On August 14, 1892, Satie issued his own declaration of independence from Péladan in the journal *Gil Blas*. The following year, Satie and the Count collaborated with Jules Bois (1871-1943), whom La Rochefoucauld helped to launch a new journal, *Le Coeur*. Bois, for his part, set himself up as a rival to Péladan by giving in 1893 an ambitious lecture-series on the mysteries of all times.

In the nine numbers of *Le Coeur*, we find a certain Henry de Malvest contributing some dull articles on "Les évolutions du langage musical." Ferdinand de Croze sets a poem of Jules Bois, *Dieu m'a pris dans ses bras*, illustrated by the "Nabi" painter Paul Ranson, by the horrendous device of adding a melody to the E-flat major fugue of *The Well-Tempered Clavier*, Book II. Edmond Bailly offers a vision of his anima, "Cellefragment d'un journal." Bois prints the text of *La Porte héroïque du Ciel*, an "esoteric drama." Satie writes an "Epistle to Catholic artists" from his new invention, the Metropolitan Church of Art, followed by the score of his sixth *Gnossienne*, dedicated to La Rochefoucauld. The last number (December 1894) presents an article by Emile Bernard on Paul Cézanneas yet almost unknownand extracts from Blavatsky's *Secret Doctrine*.

This journal much resembles Bailly's bookshop, as a rendezvous where esthetes and progressive musicians mingled with esotericists of every kind. It shows the milieu in which Satie was moving in the early 1890s, while he earned his living playing the piano in a café and pursued his love-affair with the painter Suzanne Valadon.

I have already mentioned Paul Fort's productions at the Théâtre d'Art. His last one was of Jules Bois' play *Les Noces de Sathan*, on March 30, 1892 (while Péladan's Salon was showing), which the audience found so esoteric as to be absurd. Symbolist theatre continued with Lugné-Poë, whose Théâtre

de l'Oeuvre gave the first performance of Maurice Maeterlinck's *Pelléas et Mélisande* (May 17, 1893). Bois' second esoteric drama, *La Porte héroïque du ciel*, was given there in 1894, with music by Satie, of which only the beautiful Prelude has survived. Finally in May and June, 1895 Satie published the two numbers of his *Cartulaire de l'église métropolitaine d'art de Jésus conducteur*.⁸³ If Satie had had any real taste for esotericism, this would have been the moment to show it, in his own "Church" founded in imitation (or mockery) of Péladan's Rose+Croix order. But there is nothing of the kind there. The *Cartulaire* offers only insults to Satie's enemies, and some obviously fictitious "church news," all expressed in a mood of exalted Catholic piety. Satie and esotericism had separated in 1894, although to the end of his days the composer still remembered with affection Edmond Bailly and his bookshop.⁸⁴

The question remains of whether Claude Debussy (1862-1918) had any links with esotericism. A little journal, *La Saint-Graal*, announced on March 8, 1892, that the Théâtre d'Art would be giving at the end of the month *Les Noces de Sathan* by Jules Bois, with music by Debussy. M. Léon Guichard, who made this surprising discovery, also unearthed a letter from the composer to the playwright in which Debussy politely excuses himself, declining the invitation on the grounds that the orchestra promised for the play was inadequate. (The music was eventually written by Henri Quittard.⁸⁵) It is very likely that Debussy met Jules Bois in Bailly's bookshop. But this was not his first approach to esotericism.⁸⁶ As early as 1885-87, during his tenure of the Prix de Rome, Debussy had written to Baron's bookshop in Paris to ask for *Rose+croix* by Albert Jounet and *Le Chemin de la croix* by Charles Morice.⁸⁷ Much later, in 1912, Debussy signed a contract with Morice for a three-act version of Verlaine's *Crimen amoris*, which was to be given at the Opera. Verlaine had spoken of this "mystery" in 1881 with his brother-in-law Charles de Sivry, whose mother, Mme. Meauté, cared for the young Claude-Achille "like a grandmother" and prepared him for a musical career. This led the English musicologist Robin Orledge to wonder if Debussy might have been the originator of the abortive project. Charles de Sivry was a Bohemian character: he played the piano at the "Chat Noir" before Satie, and was soaked in occultism, Kabbalah, and alchemy. Thus it is quite likely that Debussy had access to the esoteric world from his youth. He certainly continued to show sympathy for it, to judge by the subjects that he considered for musical setting: Villiers de l'Isle-Adam's *Axël*, Mme. Forain's *Le Chevalier d'Or*, Victor-Emile Michelet's *Le Pèlerin d'amour*, Victor

Segalen's *Siddartha* and *Orphée-ro*, and a *Drame cosmogonique* in collaboration with Jacques-Emile Blanche.

Another aspect of Debussy's work appeared with Dr. Roy Howat's studies of the composer's use of the Golden Section as a formal determinant of his works, beginning with *Ariettes oubliées* (1885-88). In trying to find what could have inspired this choice, Howat mentions Charles Henry's *Introduc-*

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tion à une esthétique scientifique (1885), in which there is mention of Leonardo da Vinci, Pacioli, Rameau, Poe, the arabesque, the correspondences of the arts, and the "Divine Proportion," i.e., the Golden Section. 88 No one was more curious, intelligent, and open-minded than Debussy. From the 1880s onward he admired Jules Laforgue, the great friend of Charles Henry. The use of the Golden Section indicates that Debussy was also familiar with the works, or at least the ideas, of the esthetician, and that he chose deliberately to undergird his compositions with a formula that went back to Pythagoras and to Egypt.⁸⁹

It is clear that Debussy was much closer to *fin-de-siècle* esotericism than the "Rosicrucian" Satie. There is a last association that should be mentioned, however dubious it is. Debussy's name appears between those of Victor Hugo and Jean Cocteau on the list of "Grand Masters of the Priory of Sion."⁹⁰ Since Victor Hugo died in May, 1885, and Debussy had left for Rome on January 27, one is expected to believe that the old poet, following the laws of this secret society, had already appointed the twenty-two-year-old composer as his successor. True, there were musicians among the enthusiasts for the restoration of the "Great Monarch" in the 1900s (e.g., Ricardo Viñes and Déodat de Séverac), but can one seriously imagine Debussy, scarcely out of adolescence and robed in white, presiding over a conclave of some of the wealthiest and most distinguished people in Europe (for so the Priory presents itself)? Such an image increases my suspicion that the list of Grand Masters is the work of an ingenious myth-maker.

Even so, the occultist atmosphere of the *fin-de-siècle* is nowhere more palpable than in the music of Debussy. The notorious Debussian "mystery," on which the philosopher Vladimir Jankélévitch has written such eloquent pages,⁹¹ is that of another world, hidden from the uninitiated; it is the mystery of the astral world which Rudolf Steiner or Charles Leadbeater describe with the assurance of long familiarity. The explicit and implicit images evoked in Debussy's music come from that world where the fauns, tritons, and temples of Antiquity still exist in a super-temporal state. The sylphs, the undines, and the other personified natural forces arise before the inner eye like a clairvoyant vision. And those marvelous harmonies occupy exactly the frontier between the known and the unknown, that is, between the harmonic conventions of three centuries and the half-seductive, half-terrifying void of a world of tone unknown to European "laws," a world in which the composer himself felt "the delicious plight of having everything to choose from."

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Notes

1. Bailly was an "ancien communard" according to Guénon 1978, 77. His "visage de souriant sourcier" is from the description in Michelet 1937, 65.
2. "L'Art indépendant" was at 11, rue de la Chaussée-d'Antin.
3. Michelet 1937, 65.
4. See the Introduction by C. Boumendil and G. Tappa to Bailly 1912, ii.
5. Michelet 1937, 73. These regular visits must have taken place between 1892, when Debussy met Satie, and 1898, when the latter moved from Montmartre to the suburb of Arcueil.

6. See Bailly 1909, 43f. Ray is not to be confused with Hazrat Inayat Khan, the Indian musician and founder of the Sufi Order, who was friends with Bailly between 1911 and 1914.

7. See Colquhoun 1975, 55.

8. Published by "L'Art indépendant" in 1909.

9. Bailly 1912, 23f.

10. For this program, see *Libres Etudes* 8 (May 19, 1910).

11. Three promised titles did not appear: (1) *Les Avatars de la gamme moderne d'après l'histoire, la science et la symbologie*, announced in *Le Son dans la nature* and again in *La Légende du diamant*, (2) *Les Vibrations du son et la Vie universelle*, announced in 1900; (3) *Du merveilleux dans la musique et de la thérapeutique musicale*, announced in 1900, of which *La Magie du son* (published in *Libres Etudes*⁹ [1910]) was the first and only published part.

12. Bailly 1900. From this year onwards, Bailly's bookshop was situated at 10, rue Saint-Lazare.

13. Bailly 1900, 6.

14. Bailly 1900, 11.

15. In changing the asteroids' placement to 32, from Bode's 28, Bailly says that a planet would have formed at 32.7 if it had not been prevented by the powerful influence of Jupiter. Bailly 1900, 32.

16. Bailly 1900, 34.

17. Bailly 1900, 35.

18. Bailly 1900, 36.

19. Bailly 1900, 36f.

20. Bailly 1900, 92n, cites Benjamin Silliman's *Principles of Physics*, after Blavatsky 1889, 111, n.10, according to which the sound of a distant city or a great forest is perceptibly the middle F of the piano.

21. See Godwin 1991, which amplifies Bailly's work while preserving the most important parts of it, including Bailly's own *Chant des voyelles*.

22. Bailly 1910.

23. Bailly 1910, 100.

24. Bailly 1910, 131f.

25. Bailly 1910, 131.

26. D'Arsonval, beside collaborating with Rochas and Henry, gave a communication on "inferior harmonics" to the Académie des Sciences (Arsonval 1906) which also interested Ernest Britt, according to manuscript notes of the latter in the University of Texas Library.

27. Bailly 1910, 114.

28. Among the words used by Rochas (see below) to describe the states of the medium Lina are *envoûtement*, *extériorisation*, *dédoublement*, *endormie*, and *hypnose*. One might add *transe*, *somnambule*, and *magnétisée*, to complete this list of terms expressive of the different theories that were current.
29. A communication from Marius Decrespé in *Le Voile d'Isis* 143 (January 10, 1894), 3, says that: "un ordre, que je me contenterai de qualifier de soldatesque, est venu suspendre suspendre ses passionnantes recherches sur l'extériorisation."
30. The suggestion was made by Edmond Roy in *Le Petit Bleu*, cited in *L'Echo du merveilleux* 46 (December 1, 1898), 456. Roy says that Jules Bois had suggested using Lina's powers to recreate the ancient Greek dances.
31. Rochas 1900.
32. Rochas 1900, 264.
33. Rochas 1900, 260f.
34. Rochas 1900, lxvi-lxx. Margaret Watts Hughes's book was *Voice Figures* (London, 1891).
35. Gauthier 1894, cited in Guyot 1894, 92f.
36. See Britten 1870, 1884.
37. For a semi-fictitious description of this "Orphic Circle," see *Ghost Lana*. For an evaluation of it and its context, see Godwin 1994.
38. See E.J. Dingwall's Introduction to the reprint of Britten 1870.
39. Britten 1884, 75, citing *La Gazette de France*, 1855.
40. *La Haute Science* II (1894), 254.
41. "Sâr" Péladan's Babylonian pseudonym was Mérodak.
42. Méry 1897, 1898. The latter includes the music of Mérovak's *Chant des immortels*. Hamel 1962 is a moving tribute to Mérovak, illustrated with his drawings.
43. Méry 1897, 225.
44. *L'Echo du merveilleux* V (1901), 431.
45. Vautier 1899, 1. We will meet Claire Vautier again in Chapter Eight.
46. Gounod 1900.
47. See Sédir 1897, 179-195, on "Les sons et la lumière astrale." The dedication of the book to F.-Ch. Barlet is dated December 8, 1895.
48. Besant and Leadbeater 1905, 78-84 discusses the forms built by music in the

49. See Sixten Ringbom, "Transcending the Visible: The Generation of the Abstract Pioneers," in *The Spiritual in Art* . . . , 131-154.
50. See the illustrations in Hennequin 1854, 478, 520, 626; Besant and Leadbeater 1909.
51. Swiecianowski 1881. His first work (Swiecianowski 1877) is a sketch of his theory in eight pages, deriving the numbers 3, 4, and 5 from the scale. Most of Swiecianowski's works are missing from the Bibliothèque Nationale, while several of the British Library's copies were destroyed in wartime. Through the courtesy of Mr. Jean-Pierre Laurant and of Editions Traditionnelles I was able to consult some of them in the collection of the late Paul Chacornac, now unavailable to researchers. Swiecianowski published works in Polish, German, English, and French, while working as an architect at Warsaw and Florence. I know of no study of this interesting personage, who for all his cosmic theories could also write on earthly problems, like sewers.
52. Choisnard 1901 includes two articles: "Harmonies et dissonances en astrologie et musique," and "Correspondances entre les influences astrales et la théorie dynamique des ondulations," which appeared in *Revue du monde invisible* on April 15 and October 15, 1900. These also reappear in the first three chapters of Choisnard 1926, where this bibliographical information is given (p.25).
53. Choisnard 1926, 63, giving the harmonic spiral of 9 turns and 63 octaves.
54. Guyot 1894. The figures in the text date from June 18, 1887.
55. Guyot 1894, 14.
56. Guyot 1894, 18-20.
57. Griveau 1896. The work is dedicated to the author's uncle, Comte Leopold Hugo.
58. Griveau 1896, 16.
59. Griveau 1897.
60. Griveau 1901. The prospectus promises: "Lois d'évolution, de rythme et d'harmonie dans les phénomènes esthétiques [. . .] La Nature et l'Homme Art monumental Arts industriels et décoratifs Peinture et Sculpture Choréographie, Musique, Art littéraire."
61. Griveau 1901, 186-198; 221-233; 298.
62. Griveau 1901, 233.
63. See Godwin 1989, 229-236, for a translation of the passage from Kepler.
64. See Azbel 1914, list of Chizat's works dated January 1914.
65. See the program of the *Auditions voilées*, 1893. Many of Chizat's compositions, he tells us here, were dedicated "to my dear master J. Massenet."
66. On July 9, 10, 11, 1891, there were two reciters, four voices, piano, organ, and two violins. From January 24 to 29, 1893, the ensemble included four reciters, twelve voices (several being members of the Opera), piano, organ, harp, string

67. Hizcat 1897.
68. Théon 1903.
69. Azbel 1899, viii.
70. Azbel 1899, xii.
71. Azbel 1899, 91.
72. Azbel 1899, 106.
73. Azbel 1903. The work is "offered to the Institut de France," and dedicated to the Académie des Sciences et des Beaux-arts. See Godwin 1993, 400f., for a transcription of the plate illustrating the cosmic harmonies.
74. Azbel 1903, 23.
75. Azbel 1903, 26.
76. Azbel 1914, dated March 1914, announces for publication the same year: *Harmonie des nombres dans la vibration. Loi et fonction des nombres premiers, par l'analyse des vibrations sonores. Avec harpe de nombres de 1 à 50 (table des harmoniques de cinq octaves 1/2). Ordonnés et rapports des notations et des nombres, par M. Emile Chizai*. The work never appeared.
77. Azbel 1915. The work is dated January 1915.
78. Azbel 1915, 27.
79. Athénus 1915.
80. Athénus 1915, 5-7.
81. Péladan 1891, Rule XXVII.
82. Rudorff 1973, 190; Pincus-Witten 1976, 105.
83. Among the other pamphlets associated with Satie's church, *Intende votis supplicium* (Satie 1895), a polemic with music directed against Lugné-Poë and others, was published by the Librairie de l'Art indépendant.
84. Satie states this in his interview: Satie 1922.
85. See Guichard 1974, 10-14.
86. This paragraph and the next are based on Orledge 1982 and Howat 1983.
87. Ambrière 1934.
88. Howat 1983, 165f.
89. See Argüelles 1972, 149, on the group of artists and poets who called themselves the *Section d'oi*, and their connection with Henry.
90. Baigent, Leigh and Lincoln 1982, 123-126. The list of purported Grand Masters (in Schidlof 1967) was not published until after the death of Cocteau (1889-1963).

Saint-Yves d'Alveydre

Chapter Eight

Saint-Yves d'Alveydre and His "Archéomètre"

Saint-Yves as Composer

As we have seen in the preceding chapters, the *fin de siècle* was a most fertile period for the inventors of universal systems. This chapter treats a figure who was arguably the most distinguished, and certainly the most enigmatic, of them all. He was Joseph Alexandre Saint-Yves d'Alveydre (1842-1909), creator of the "Archéomètre," which, as he himself entitles it, was a "Key of All the Religions and All the Sciences of Antiquity; Synthetic Reformation of All Contemporary Arts." ¹ The leading motives of our study are all here: religion and science, antiquity and modernity, the key to lost knowledge; the need for reform.

When one reads the esoteric and occultist periodicals of the late nineteenth and early twentieth century, the figure of Saint-Yves seems to hover in the background, regarded with respectful awe but never clearly delineated. As the "intellectual master" of Papus, the most active publicist of the occultist movement, Saint-Yves was as it were the power behind the throne—perhaps literally so, during Papus's mission to the court of Russia in 1901. But he himself is extremely difficult to classify. A great esotericist beyond all doubt, he was also the most consummate egomaniac and snob, and credulous to the last degree when it came to his own clairvoyant visions.

Music is a field in which incompetence and pretension very soon give themselves away, which is something one cannot say of astral travel, for example, or even of political theory, to name two other fields of Saint-Yves' activity. There is no question that Saint-Yves knew music better, both in theory and practice, than any of our musical esotericists except the professional Ernest Britt.

Saint-Yves attracted attention as a schoolboy with his organ-playing, according to Abbé Pierre Calixte Rousseau, the curé of Ingrandes-sur-Loire, with whom he spent the year 1856.² During his voluntary exile in Jersey (c.1866-70), Saint-Yves earned his living by giving music and French lessons. Even his worst enemy, Claire Vautier, who poured into a *roman à clef*, *Mon-*

sieur le marquis, all the fury of an abandoned lover, allowed that he was uncommonly gifted. "Saint-Emme," as she calls him, possessed,

without ever having studied them, the principles of all the arts. Poetry and music had no secrets from him, and this inner knowledge almost justified his arrogant claims. ³

These were not an amateur's opinions, but those of a singer at the Opera. Later in her book, Vautier gives

the following descriptions of Saint-Yves's playing:

He opened the piano and started to play some fragments of ancient music, and poetic and savage by turns. He had the secret of bizarre harmonies, unheard-of modulations, songs that were triumphant or desperate, which produced on Martha [the heroine] the effect he expected.⁴

[Saint-Emme] sat down at the piano and played some religious hymns in a archaic style, simple and grandiose. He had composed them, he said, following the musical system of Orpheus, a work that has not been preserved and which tradition attributes to that perhaps legendary genius.⁵

We are fortunate to possess examples of both these styles. During 1901-02, Saint-Yves had a number of his compositions engraved and published by Delanchy, faubourg Saint-Denis, of which the following seems to be a complete list:

1a *Salutation angélique* [i.e., *Ave Maria*] in Slavonic, for tenor and organ or piano

1b. The same, transposed for bass voice

2a. *Salutation angélique* [different music] in Latin, for baritone, bells or harp, organ or piano

2b. The same, transposed for bass voice⁶

3. *Salutation angélique* [different music again] in Syrio-Chaldean, for low baritone and organ or piano

4. *Kyrie eleison* in Greek, for tenor and organ or piano

5. *Pater noster*, for tenor and organ or piano

6. *Amrita* for piano

7. *L'Etoile des mages* for piano

8. *Isola Bella* for piano.

The songs (nos.1-5) are part of a "musical archéomètre of the Liturgical Languages," and need to be considered in the context of the Archéomètre (see below). The piano pieces (nos.6-8) are in a freer and more ambitious style, being virtual symphonic poems evidently written by a capable pianist. Saint-Yves's training at the organ bench shows in the correct counterpoints,

changes of register, and atmosphere of inspired extemporization. *Amrita* is the shortest and the most hieratic in style, with a title referring to the potion of immortality in the Vedas; ⁷ it would fit equally well on the organ, or on the harmonium that we know Saint-Yves to have had in his home. Its solemnity and "noble" harmonies are evocative of Elgar. *L'Etoile des mages* is much more pianistic, showing the double influence of Wagner's *Parsifal* and of Liszt's fantasies, with perhaps a touch of Puccini. Saint-Yves manages the chromatic harmonies and the pianistic idiom with complete assurance. *Isola Bella* (see Appendix for score), by far the best of the three pieces, resembles a Chopin ballade with its many episodes, the variety of its themes, and an overall dramatic development from start to finish, though its textural and harmonic complexity does not exceed that of a Mendelssohn *Song without Words*. By comparing Saint-Yves with these composers, I do not mean to place him at their level, but merely to situate his music as to style and form.

Those influences are entirely absent from the remaining compositions, which are based on the principles discovered, or invented, in the course of Saint-Yves' work on the Archéomètre. Besides the five liturgical

songs, he composed a body of almost abstract music that comprises one of the strangest efforts of his period:

9. *Diatonie archéométrique: les heptachords; Conjugaisons modales binaires*. Copyright 1906, printed by Dupré, 18 pages.

10. *L'Archéomètre musical: modes mélodiques et harmoniques*. Copyright 1909 [same printer?], 138 pages.

11. *Chants de lumière*. Unpublished manuscript in the Bibliothèque de la Sorbonne, Ms. Carton 42.

The Genesis of the Archéomètre

We now have to understand the nature of the Archéomètre, this universal key described with such pride by Saint-Yves, venerated by Papus, and commented on by the young René Guénon.⁸

The story begins in 1885, when Saint-Yves was forty-three. He had already written a mystical book on life, death, and the sexes,⁹ a long historical study,¹⁰ and several other books of politics and poetry.¹¹ Thanks to the fortune of his wife Marie-Victoire (née de Riznitch, widow of Count Keller), his elder by fourteen years, he was able to live up to his title of "Marquis d'Alveydre," mysteriously acquired during his honeymoon in Italy. He spent his time planning an ideal government which he called "Synarchy," and studying Sanskrit. The Archéomètre came to him in the course of six "revelations"¹² that, at least, is how they seemed to him that were given him by more or less mysterious Indians, by the soul of his wife, and through his own prayers and meditations.

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The first revelation was of an otherwise unknown alphabet, "Vattan" or "Vattanian," which he learned in 1885 from his Sanskrit teacher, Haji Sharif. According to Haji, the language of Vattan is the original source of all the world's languages. It has a 22-letter alphabet corresponding to Hebrew, which is derived from it. What is more, the Vattanian letters are the exact transcription of the "astral alphabet" and the origins of the traditional signs of the zodiac and planets. My study of the manuscripts of Saint-Yves and Haji Sharif has convinced me that the Vattanian alphabet was not invented by Saint-Yves, and really has an Indian origin.¹³ But there is no corroborating evidence for it, and no orientalist has yet supplied the slightest information on its origins or authenticity.

The second revelation, dating from 1885 or 1886, is a "secret teaching of the Brahmins" communicated to Saint-Yves by a certain "Rishi Bagwandas-Raji-Shrin." It consists of a cosmogonic explanation of the Sanskrit word *Aum*, with the correspondances of the primordial sounds of the human voice and the primordial signs of Vattan: a symbolic link between ear and eye. This teaching summarizes the two principles of Indian musical esotericism: (1) creation through the breath, hence the word, of Brahma; (2) the power of certain words or mantras when spoken by initiates. The two principles relate to one another as macrocosm to microcosm. That which man may do with his breath, his voice, or his word, is an imitation at its own level of the creative work of God. And this sounding breath is not so distant from the *fiat* of Genesis, or the Word of Saint John's Gospel.

The third revelation was that of the cosmic correspondences of the Vattanian alphabet, discovered in the same years 1885-86. Saint-Yves came to this on his own, after studying the classic of Kabbalism, *Sepher Yetzirah*. This text gives the correspondences of the Hebrew alphabet to the twelve signs of the zodiac and the seven planets, which Saint-Yves compared to an alternative version published in P. Christian's *Histoire de la magie*.¹⁴

Saint-Yves set these studies aside for nearly ten years. It was only after the death of his wife Marie (June 7, 1895) that he returned to the notebooks in which he had recorded them. The event that prompted this truly deserves the name of revelation. As a widower, Saint-Yves had moved from Paris to an apartment facing

the Palace of Versailles and installed there a Roman Catholic oratory. On June 6, 1896, he had a mass said to commemorate the first anniversary of Marie's death. During the days following, he had a series of ecstatic experiences of communion with her, whom he henceforth called his "Angel." This sent him back to his Hermetic researches of the 1880s. On July 21, 1896, he wrote: "My wife showed me a definition of life, and inspired me to find it in the groupings of sacred letters." These were combinations of two or three Hebrew letters, to which he added cosmogonic interpretations that were mostly derived from Fabre D'Olivet's *La Langue hébraïque restituée*. For Saint-Yves, this grouping confirmed his cosmogony of 1886, while Marie's visit was direct proof that life continues beyond death.

The fifth revelation, and the most important, took the form of a diagram entitled *Coeli enarram* ("The heavens are telling [the glory of God]," Psalm 19), "made with my Angel" at Easter, 1897. Saint-Yves found his arrangement of the signs and planets with the Hebrew alphabet confirmed by adding up the numerical values of the letters. The sum of the letters corresponding to the twelve signs of the zodiac was 565. Saint-Yves noticed instantly a reference to the significant name of Eve, made with the letters He (5), Vav (6), He (5). The sum of the letters corresponding to the seven planets gave 469, which he contrived to interpret as the name of Jesus. Adding $4+6+9 = 19$; $1+9 = 10$, the number of Yod, the first letter of "Jesus." He gave reasons, too involved to explain here, 15 for the other letters, then pointed out that the letters of the planets and signs together spell JHVH or the four-lettered name of God.

The idea of the heavenly bodies singing the glory of God naturally led Saint-Yves to think of music, well aware as he was of the tradition of cosmic music and planet-tone correspondences. No subject gave him more difficulty than integrating music into his system. During the succeeding years, he filled hundreds of pages of notes, most of them with efforts to find a tuning-system for the scale that would agree with "sacred numbers." First, in 1897, he used the same system as Fabre d'Olivet, generally attributed to the Egyptians on the authority of Dion Cassius:

Moon A, Mercury G, Venus F, Sun E, Mars D, Jupiter C, Saturn B

A little after this fifth revelation, Saint-Yves took the crucial decision to work with a sixfold, rather than a sevenfold system of correspondences. Symbolically, this amounted to setting the 6 days of Creation over the 7 Chaldean planets. In the field of color, he abandoned the 7 colors of Newton's spectrum for the 6 primary and secondary colors of the painters. Adding 6 intermediary colors gave him 12, which he placed alongside the 12 signs of the zodiac, as one can see in the beautiful colored plates of his book *L'Archéomètre*. In order to accommodate the diatonic scale to the new scheme, he extracted the E of the sun and placed it in the middle of the circle, leaving the other planets with their 6 traditional tones.

Now the greater part of the Archéomètre was complete, consisting of the following elements:

- (1) the 12 signs of the zodiac, placed in a circle
- (2) the 7 planets, placed in the signs which they rule
- (3) the 12 Hebrew and Vattanian letters corresponding to the signs of the zodiac
- (4) the 7 letters corresponding to the planets
- (5) the numerical values of all the letters
- (6) the 7 tones

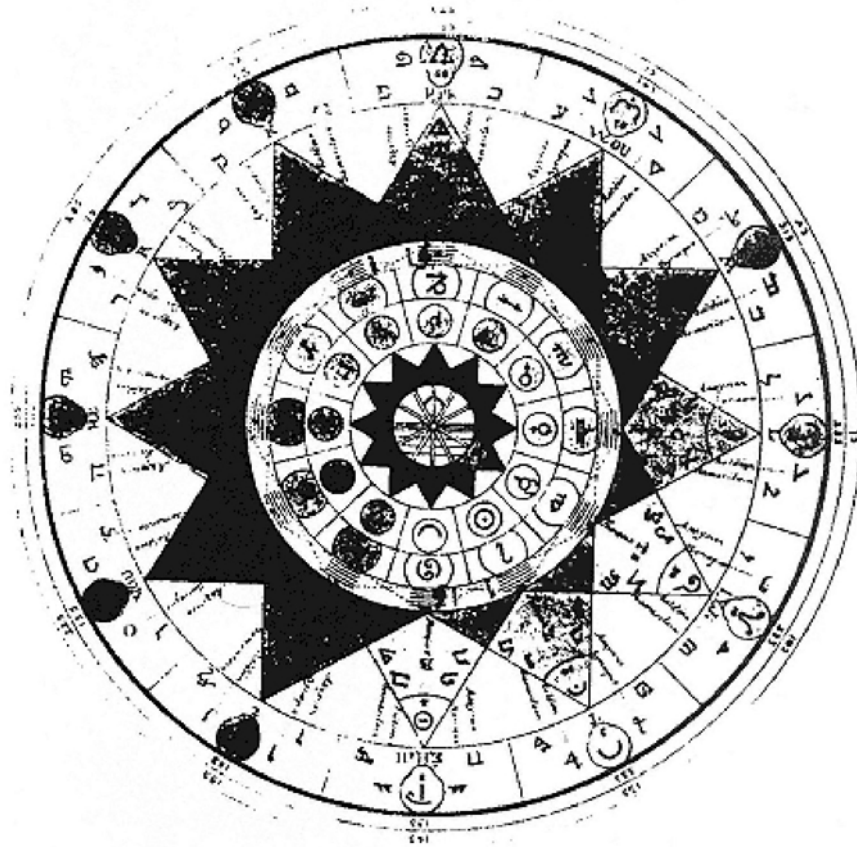
(7) the 6 colors in two intersecting triangles (a star of David), with the 6 intermediary colors.

The sixth and last revelation, received in 1898, was that of the Triangle or Trine of Jesus. While searching for organizing principles within the zodiac, Saint-Yves had already thought of the four equilateral triangles which join the signs according to the four elements. Here is his version of their corresponding letters and numbers:

Fire Trine:	Aries E 5 +	Leo T 9 +	Sagittarius Ou 70	=84
Water Trine:	Cancer H 8 +	Scorpio M 40 +	Pisces R 200	=248
Air Trine:	Libra L 3 +	Aquarius K 100 +	Gemini Z 7	=137
Earth Trine:	Capricorn P 80 +	Taurus V 6 +	Virgo Y 10	=96

Saint-Yves began by treating each of the four sums as the limiting number of a scale. He found that one cannot make a diatonic scale from the numbers 137 or 84, but that the other two trines can provide limiting numbers for tuning-systems, as we shall see below. He was equally concerned to fit the letters of each trine into meaningful words, and found that the Water Trine, H,M,R, can be interpreted as "MRHa," i.e., the Virgin Mary as well as his own wife. With a little fudging (substituting the Sh of Saturn for the P of Capricorn), the Earth Trine could be made to render "YShV," i.e., Jesus. This satisfied his great goal of finding the names of Jesus and Mary as two intersecting triangles, archetypally inscribed in Vattanian in the heavens.

Saint-Yves regarded his invention as a scientific instrument, giving access to the experimental science of the "ante-Hebraic Patriarchs," lost by their successors, and rediscovered by himself. It was essentially a science of correspondences. To find the exact correspondences is the Hermeticist's key to comprehending the universal plan. To possess this key is to be able to insert it into the plan and turn it: an action that is no more or less than magic. The Archéomètre was ready for Papus to present it on September 26, 1900, at the International Spiritist and Spiritualist Congress in Paris. 16 For this purpose, the circular diagram of the Archéomètre was made into a simple machine: a box with a transparent panel through which the colored diagram was visible, turned by a handle.17 The purpose of spinning the Archéomètre was to dem-



onstrate the blending of its colors, and to confirm the wisdom of choosing six (or twelve), rather than Newton's seven. Saint-Yves explains:

If one spins on its center the color-circle of Chevreul, it will show the same as Newton's disk, namely the mutual canceling of all the colors in favor of a greyish white.

On the contrary, if one spins the archeometric color-circle, one will see the colors composing themselves musically and mutually enlivening themselves; and on this background, the photogenic ray of yellow affirms itself with a power that it seems to lack when the archeometric circle is at rest.
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Just as Charles Henry offered his *cercle chromatique* to painters, and his *rapporteur esthétique* to designers, so the Archéomètre provides guidance

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according to its own principles. Papus told his audience that one could use it to make one's furniture, wall-paper, etc. match one's wife's name! 19 Saint-Yves designed a supplementary *double rapporteur des degrés* (double protractor of degrees) to facilitate this,20 such that the colors could be coordinated with proportions, tones, and letters. The name of Jesus unites the three primary colors (I=blue, Sh [for P] =yellow, U=red), that of Maria the three secondaries (M=green, R=orange, H=purple). Angles, too, can be read off as harmonious or inharmonious, just as with Henry's protractor, thus enabling lines and curves to be incorporated into the general harmonic scheme.

Essay on Music: The Search for Sacred Scales

It would be hard to exaggerate the patience with which Saint-Yves worked on his musical system. Especially between 1898 and 1900, he filled page after page, sometimes with careful calligraphy, sometimes scrawled all but illegibly, with tables of scales and their numbers. He then gave them very simple harmonizations, absolutely repetitive (the *Chants de lumière*), beginning on each note and transposing it unchanged to each of the 21 tones (7 natural, 7 flat, 7 sharp). Although the manuscript notebook that Saint-Yves devoted entirely to music is lost, being known only by his summary of its contents, it is possible to reconstruct his musical thought almost step by step by referring to other notebooks.

In one of these is a sketch for an article entitled simply. "La Musique,"²¹ of which I have published a translation in *The Harmony of the Spheres*.²² It is a disconcerting mixture of music theory and sacred history, mentioning in the same breath those who have falsified the scale and crucified Jesus Christ. The most concrete statement concerns the triple correspondences underlying the musical system:

Twenty-two letters of the solar Alphabets of the Word [i.e., the Vattanian and Hebrew alphabets], twelve zodiacal letters, seven planetary letters; twenty-two enharmonic tones, twelve chromatic, seven diatonic: such is the correspondence of music and of the Word in the living Principle.²³

Saint-Yves differs from several of our authorities, notably Fabre d'Olivet, in choosing Ptolemy's tuning and rejecting that of Pythagoras. All his life, Saint-Yves had an uneasy relationship with the earlier illuminate, whom he resembled in so many respects. He was almost like a son who felt obliged to rebel against an over-dominating father. He owed to Fabre d'Olivet his initiation into philosophy, philology, and meta-history: he had read his books, and perhaps also some of his manuscripts, during his time on the island of Jersey. It was Virginie Faure, formerly a disciple of Fabre d'Olivet, who lent these materials to the young Saint-Yves, and there is reason to believe that some lost chapters of *La Musique expliquée comme science et comme art* were among them.²⁴

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In his longest book, *Mission des juifs*, Saint-Yves borrowed several passages from Fabre d'Olivet's *Histoire philosophique du genre humain*, and showed a certain ingratitude by giving their author only a passing mention, and not stating clearly what he had borrowed. His punishment was severe: the reviewers gave him a permanent reputation as a plagiarist. As time went on, and as Saint-Yves became more and more Christian in his theosophy, he took pains to distance himself from his pagan preceptor. "It is sad to say, and I would only say it to you," he wrote to Papus in August, 1897: "F. d'O. is nothing but a serious Renan." ²⁵ (Ernest Renan was the author of the de-mythologizing *Vie de Jésus*.)

As a student of Père Amiot, Abbé Roussier, and J.-B. de Laborde, Saint-Yves knew their predilection, and Fabre d'Olivet's, for the Pythagorean tuning that was also the ancient Chinese scale and the scale of Guido d'Arezzo. But he condemned it as a despicable "dualist system," as opposed to the "trinitary" system of Ptolemy. Here are the tunings of the C major scale given by the respective systems:²⁶

Pythagoras (also Chinese):

C	D	E	F	G	A	B	C'
1	9/8	81/64	4/3	3/2	27/16	243/128	2

Ptolemy (also Zarlino, "physicists"):

C	D	E	F	G	A	B	C'
1	9/8	5/4	4/3	3/2	5/3	15/8	2

Why should these be called "dualist" and "trinitary"? The answer lies in the dual construction of the scale that Fabre d'Olivet found so important symbolically, in which the diatonic scale can be formed equally from the rising series of fifths F,C,G,D,A,E,B, or from the falling series B,E,A,D,G,C,F. It is this duality that Saint-Yves rejects. By the "trinitary system" he probably means the tuning derived from the triangles

of the Archéomètre.

The "Trine of Jesus" or of Earth, with the sum of 96, served as his primary model. If one takes the numbers as vibrations per second (the procedure that Saint-Yves calls "physical"), the scale which can be constructed with numbers between 48 and 96 is the rising major mode from C to C'. If one takes the same values as representing string-lengths (called by Saint-Yves the "verbal series"), they give a descending scale from E' to E. However, there is a slight difference between the two scales in the tuning of D:

Physical scale	Verbal scale
E 60	E 48
10/9 (minor tone)	8/9 (major tone)
D 54	D 54
9/8 (major tone)	9/10 (minor tone)
C 48	C 60

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Only in the Physical tuning do the tones C,D,E relate as 1/8, 1/9, and 1/10, thus coinciding with the 8th, 9th, and 10th harmonics of the harmonic series. This is the cause of the "major" whole-tone C-D being larger, at 9/8, than the "minor" whole-tone of 10/9. Tuning the two C's identically would give the "verbal" D the "physical" value not of 54 but of 53.333. I have no intention of adding to all the ink that has been spilt by music theorists about this problem. It is enough to say that for Saint-Yves, the scale with the limiting number of 96 became the archetype of the "physical series" of diatonic modes, and the justification for accepting the Ptolemaic, Zarlilian, or physicists' tuning in preference to the Pythagorean. Here is the scale, with its planetary correspondences:

Physical series		
C	96	Jupiter
B	90	Saturn
A	80	Moon
G	72	Mercury
F	64	Venus
E	60	Sun
D	54	Mars
C	48	Jupiter

To find a satisfying "verbal" scale, he had to choose a different limiting number. Ideally this should have come from the "Trine of Mary," whose three letters added up to 248. But this is not a "musical" number. Saint-Yves was forced to use only two of the letters of Mary's name, either 200+40 or 40+8, as the numerical basis for scales. The number 48 correlates with the scale of Jesus, above. The number 240, derived from taking the letters M and R alone, gives a tuning for the G-mode:

G	120	Mercury
F	135	Venus
E	144	Sun
D	160	Mars
C	180	Jupiter
B	192	Saturn
A	216	Moon
G	240	Mercury

Thus, to Saint-Yves' satisfaction, a link is forged between the musical system, the planetary system, and the names of the divine beings, male and female.

The Musical Archéomètre

L'Archéomètre musical, published in 1907, is based on these two scales. The work consists of 201 little pieces for piano, almost totally diatonic,

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classified according to their modes. At the head of the first group, for example, stands the symbol of Mercury and the numbers "240-120" denoting the above mode. The mode of Venus, from F to F, requires the scale to be extended to a low F with the string-length of 270; therefore the numbers of the Venus mode are 270 and 135, those of Mars (the D mode), 320-160, etc.

A striking feature of *L'Archéomètre musical* is that it is written almost wholly with a key-signature of seven flats. Consequently the seven modes are actually those of C-flat, D-flat, E-flat, etc. The collection of the same year entitled *Diatonie archéométrique* explains this disconcerting fact. *Diatonie archéométrique* consists of very simple harmonizations of the seven modal scales, beginning with a key-signature of seven flats. Then the seven modes are transposed a fifth higher and given a signature of the flats; then 5, 4, 3, etc. After passing through the empty key-signature of the natural modes, the sharp series begins, from 1 to 7 sharps. Thus the seven modal scales are all given in every one of the possible 15 key-signatures and transpositions. Evidently the *Archéomètre musical* was to have been only the first stage of an immense edifice on the same ground plan. In view of this, it would be fully justifiable to ignore the seven flats and to play the whole collection in C major. Incidentally, in his introduction to the work, Saint-Yves proposes and illustrates a new notational system that does away with clefs and accidentals, each chromatic tone having its own line or space.

The *Archéomètre musical* contains a further dimension than *Diatonie archéométrique*, because the section devoted to each mode contains at least seven pieces, based on simple melodies that feature each interval in turn. Moreover, in each scale, every interval can appear in eight different positions. This leads to the conclusion that a diatonic Archéomètre, if it were ever completed, would consist of:

15 key-signatures, each containing
7 modes, each featuring
7 intervals, each in
8 different positions

The collection as it stands thus fulfils one-fifteenth of the whole project, namely the section in the key-signature of seven flats.

One piece will serve to illustrate this (see page 178). It belongs in the scheme as follows:

key-signature: 7 flats
mode: A (Moon)
intervals: "conjugal" or sixths

In the last paragraph of the essay on music translated above, Saint-Yves objects to the current names of the intervals: tones, thirds, fourths, etc. He

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hesitated long before choosing the terms that appear in the *Archéomètre musica*, where all the seconds (both tones and semitones) are called *tonales*, the major and minor thirds *modales*, the fourths *chronales*, the fifths *verbales*, the sixths *conjugales*, the sevenths *amplexales*. He did not come to these names easily. For the fifth alone, his notebooks contain the terms *organale*, *verbale*, *verbe*, *cohérent*, *cohérale*, *émotale*, *consonance*, *ensonance*, and *adsonance*. He was looking for terms that would express the emotive qualities of the intervals, in addition to the simple numbering of their tones.

Between the strict style of the *Archéomètre musica* and the free fantasies for piano are the five liturgical songs (nos. 1-5 in the list above). I find these the least satisfying of Saint-Yves' compositions, tainted with a sugary chromaticism and the kind of Catholic piety that the French associate with the religious kitsch sold near Saint-Sulpice. They are the musical counterpart of the cathedrals and liturgical vessels designed by Charles Gougy to illustrate *L'Archéomètre*.²⁷ But this is perhaps a matter of taste.

The collective title of these songs, "*Archéomètre musical des langues liturgiques*," refers to the correspondences of their languages with the Archéomètre. For example, in the Latin *Ave Maria*, the three syllables of Maria are set to the tones D,C,A, which are those of the "Trine of Mary," while the

name of Jesus is set to G,B,F, the tones of the "Trine of Jesus." The mathematical proportions of the same tones appear in the architectural plans for chapels with their respective dedications.

This must suffice as an Ariadne's thread through the labyrinth of the *Archéomètre musica*, whose hieratic and severe music is the prime example of occult philosophy put to practical use. The only work comparable to it, to my knowledge, is Michael Maier's *Atalanta fugiens* (1617), the handiwork of another gifted amateur composer, which is likewise unique in style and thoroughly occult in inspiration.²⁸

Saint-Yves, with his multiple gifts, incarnates to perfection the great problem of musical esotericism, namely the reconciliation of principles with practice. He insisted on the scale of Ptolemy, not only with the arguments of a theorist but with the decree of a hierophant. But this scale, however satisfying it may be for the Archéomètre, is no use for modern music requiring modulation. I do not imagine for a moment that Saint-Yves's Bechstein and his harmonium were tuned to anything but equal temperament, like all the instruments of his time, nor that Fabre d'Olivet's fortepiano was tuned much differently. If Saint-Yves had

played his *Archéomètre musical* on an instrument tuned strictly to Ptolemy's scale, he could have revelled in the pure thirds and a few of the fifths, but very soon he would have discovered that the fifth D-A, for example, is a comma too small. Whatever Wronski thought about the ear's tolerance of such an "insignificant" fraction as 80/81, Claire Vautier could not have put up with a piano mistuned to that extent! I have to conclude that these musicians who pretend to restore the principles of music are prepared to set their dogmas aside when seized by the Muse.

Artistic Applications: Charles Gougy

Saint-Yves did not want for friends to continue his work after his death in 1909, and his stepson, Count Alexandre Keller, was willing to devote part of Marie's legacy to underwriting its publication. The master was scarcely cold in his grave when Papus published the suppressed *Mission de l'Inde*, with its startling revelations of Agartha and the King of the World. *L'Archéomètre* appeared in 1912, thanks to the "Amis de Saint-Yves." One of them was a minor composer, J. Jemain, who was supposed to have been the "valued collaborator of the Master in all his musical adaptations."²⁹ René Guénon and his friends published a long analysis of the *Archéomètre* in their periodical, *La Gnose*, in 1911-1912.³⁰

The most practical of the "Amis de Saint-Yves" was Charles Gougy, a professional architect, who was responsible for the part of *L'Archéomètre* dealing with its applications to architecture and design. He made use of the *Etalon-archéométrique* ("archeometric standard") which Saint-Yves had patented on June 26, 1903.³¹ It is a meter-stick calibrated like a monochord with the diatonic, chromatic, and enharmonic tones of the G mode. The dia-

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tonic tones are those of the Marian octave of 240/120. To obtain whole numbers for the intervening tones, the limiting number is multiplied to the biblically significant 144,000. Gougy shows how the measurements of the Hebrew Tabernacle and Temple given in the books of Exodus, Kings, and Ezekiel can all be interpreted as tones, by means of this standard. Contrarily, he offers designs for architecture and goldsmith's work based on the same musical proportions.

After World War I, Gougy continued to follow Saint-Yves's principles. In a small folio of 1925, ³² *L'Harmonie des proportions*, he opens with a quotation from Camille Durutte: "In the different branches of human knowledge, empirical systems, i.e., those founded on experience alone, are multiple. Every rational and rigorously demonstrated system is unique." The base of Gougy's rational system lies, he says, in the "great harmonic standard in C-major of M. de Saint-Yves," from which he draws all the proportions necessary for coordinating the dimensions of a building into a harmonic whole.

The Archéomètre is surely the most complete of these attempts at a universal synthesis. It is only through the analysis of the stages by which Saint-Yves came to invent it that one realizes how shaky and arbitrary some of its foundations were. But the same can be said of every effort of this kind, if one is not a believer in the divine inspiration of its inventor. Saint-Yves, for all his faults, stands as a prime exemplar of a Hermetic way of life, and as one of the bravest attempts to integrate the levels of aesthetic, intellectual, and spiritual being.

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Notes

1. Subtitle of *L'Archéomètre* (1912). The latest reprint of the work is by Guy Trédaniel, Paris, 1987. The best is that of Gutenberg Reprints, Paris, 1979, which includes *L'Archéomètre musical* and *La Théogonie des Patriarches*.

2. Letter in Saint-Yves 1887.
3. Vautier 1886, 11f. I follow the example of Saint-Yves' biographer Jean Saunier in allowing that much of Vautier's "novel" is a factual account of her relationship with Saint-Yves. See Saunier 1981.
4. Vautier 1886, 70.
5. Vautier 1886, 98.
6. Included in Saint-Yves 1979, 275-277.
7. *Amrita* and *L'Etoile des mages* are parts of a strange production entitled *Souvenir du jeudi* . . . (Saint-Yves 1978), published by Saint-Yves at Versailles. It contains four poems, of which two have the same titles as the compositions. The reprinted score of *Amrita*, announced in Saunier 1981 to appear in *Bélisane* 1980, never appeared, as *Bélisane* ceased to appear after two annual numbers, 1978 and 1979.
8. Papus showed a constant admiration for Saint-Yves from his early article (Papus 1888) to the edition of the *Archéomètre* in 1912. On Guénon's relationship to Saint-Yves, see Séd 1985.
9. Saint-Yves 1877.
10. Saint-Yves 1884.
11. For a complete bibliography, see Saunier 1981.
12. For a more detailed analysis, with important texts from Saint-Yves' manuscripts, see Godwin 1988.
13. On the other things that Haji introduced Saint-Yves to, see Godwin 1986.
14. Christian 1871.
15. This brief summary is taken from Saint-Yves' essay, "Le Verbe," transcribed in full in Godwin 1988.
16. See Amadou 1983, 28-32.
17. I am grateful to Mr. Amadou for a photograph of this machine, whose whereabouts were not revealed to me. Wronski's system was likewise mechanized in an apparatus called the "*prognomètre*," which was inherited by Eliphas Lévi but is now lost (see McIntosh 1972, 96ff.).
18. Saint-Yves 1979, 298.
19. Amadou 1983, 30.
20. See illustration, Saint-Yves 1979, 301.
21. Bibliothèque de la Sorbonne, Ms. 1823 E., ff. 214-216.
22. Godwin 1993, 396-398.
23. Godwin 1993, 396.
24. The evidence is as follows: in a note on the musical system of the Hindus, Saint-Yves prefaces it by writing "*Suivant d'C* . . . " and later "*Selon d'C*" (Bib-

liothèque de la Sorbonne, Ms. 1823, f.63). The surviving writings of Fabre d'Olivet include nothing on Hindu music, which he undoubtedly studied in the *Asiatic Researches* and the writings of Sir William Jones.

25. Letter in the dossier Saint-Yves d'Alveydre of the Bibliothèque Municipale de Lyon.

26. Bibliothèque de la Sorbonne, Ms. Carton 42, bundle entitled "L'Archéomètre."

27. See Saint-Yves 1979, 308ff., for chalices and chapels proportioned as the tones A,C,E.

28. See Maier 1989 for a transcription into modern notation.

29. Saint-Yves 1979, 131.

30. See Séd 1985.

31. The full text of the patent is in Saint-Yves 1979, 280-283.

32. Gougy 1925. The work comprises 25 pages and 15 plates.

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Paul Vulliaud From Vulliaud's *Histoires
et portraits des Rose-Croix*, Paris:
Archè, 1987. by permission of Laszlo Toth.

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Chapter Nine

Speculative Music Encounters Modernity

The Musical Esthetics of Two Journals: Emile Bernard's *La Rénovation* and Paul Vulliaud's *Les Entretiens idéalistes*

The French love-affair with Wagner did not end with the nineteenth century. Forgiving the misfortunes of 1870, over which Wagner had exulted so vilely, 1 the French persisted in the Bayreuth cult until the First World War. Nothing suited the aspirants to a "spiritual" music better than the mixture of metaphysics and synesthesia that was the Wagnerian *Gesamtkunstwerk*. According to the painter and theorist Emile Bernard, the composer far surpassed Baudelaire, and even [!] Puvis de Chavannes: "He was much more a hierarch, officiating for God before the Mysteries and Symbols, than an entertainer of the crowds. His art was the preaching of our redemption by the Redeemer."²

There is nothing more tedious than to read the praises of Wagner and the analyses of his operas in the idealist press of the *belle époque*. This was the exoteric side of the Wagner cult, wallowing in sentimentality and void of any intellectual rigor, though it has to be said that its devotees were highly ingenious in their interpretations, their excesses resembling those of medieval commentators on the Bible. I am thinking especially of two journals, actually very rich in content, that appeared simultaneously: *La Rénovation: Revue de l'art le meilleur*, edited from 1905 to 1909 by Emile Bernard, and *Les Entretiens idéalistes*, edited from 1906 to 1914 by Paul Vulliaud.

Most of the authors we have met so far in this study have been optimists. The most modern of them, such as Colonel Rochas and the Theosophists, believed in an imminent renovation of civilization thanks to modern science, given that this science would include the fields formerly excluded as "magic." Pessimism entered with the new century, and with it a deliberate elitism. In February 1909, for instance, *La Rénovation* presented a miniature manifesto in which the readers were apprised of which artists were "spiritually correct":

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OUR PANTHEON

For the glorification of those who have not flattered the deplorable taste of Democracy, and whose magnificent genius the latter has seen fit to ignore, we inscribe here, at the head of this Review dedicated to Pure Art, the sacred names of: Joseph de Maistre, Lamartine, Châteaubriand, Ballanche, Vigny, Baudelaire, Poe, Delacroix, Leconte de l'Isle, Villiers de L'Isle Adam, Puvis de Chavannes, Mallarmé, Wagner, Barbey d'Aurevilly, Ernest Hello. And we invoke in the Past as our Masters: Praxiteles, Phidias, Michelangelo, Leonardo da Vinci, Raphael, Giorgione, Titian. Finally we acclaim, ABOVE ALL, without depreciating any genius, THE ART OF THE GREEKS, revealer of the Beautiful. 3

If this pantheon were extended to the living, it would have to include Joséphin Péladan, who first set up this canon for the use of Catholic artists and who propagated, in several hundred articles, the cult of Greece, the Italian Renaissance, and an art that was unashamedly aristocratic.

Among musicians, only Wagner is admitted. But *La Rénovation* was not hostile to its contemporaries. We find mention there of Edgar Varèse, who already in 1905 was showing, as he played his own music on the piano, "a breath of genius [which] exhales from this intellectual, vibrant, and forceful music."⁴ Madame de Polignac, who wrote this, was also an admirer of Isadora Duncan, who elaborated on the style of Loïe Fuller and cultivated the atmosphere we have encountered in the idealist theater of the 1890s and the *auditions voilées* of Emile Chizat. Duncan danced in an aura of veils, accompanied by an unseen orchestra and by wordless song. De Polignac thought she could discern in her performance the path towards the supreme art of the future. There was nothing vulgar in it, she said, nothing resembling the "literary distractions" of common ballet. "These choirs or solo voices might sing either with closed mouths, or else on one of the vowels, chosen according to its number of harmonics for the desired timbre or degree of intensity."⁵ The interest in vowels may have arisen after the performance of Edmond Bailly's *Chant des voyelles* at the Theosophical Congress six months earlier (June 1906 see page 144).

Idealistic esthetics saw music as the purest of the arts, which could only suffer from the imposition of precise words or images. Was it, then, a sort of aural architecture, like the "frozen music" of Winckelmann? Not at all, says the *Entretiens idéalistes's* musical spokesman, Albert Trotrot. He takes the opportunity of writing a review of Eugène d'Harcourt's *Symphonie néoclassique* to insert some reflections of wider import, from which I extract two passages. This is the first:

But who would dare to say that music is in essence an architectural representation when, on the contrary, this only enters the field of sound as the depiction of our phenomenal world? To aim at architecture is to

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remain outside the states that constitute the very being of music. It is vain to object that Bach and the early composers [*primitifs*], Beethoven and his successors, and Wagner and César Franck built on the traditions of perfect architectures. Who cannot see that Beethoven surpasses at every

moment the rational data of form, and by adapting them to his vision, smashes the sacred molds?

Trotrot next evokes Wagner and the composer's philosophical inspirer, Schopenhauer, for whom musical form was nothing less than "the revelation in space and time of the formal and static essence [*/en-soi*] of the world." He allows to the subject of his review, Eugène d'Harcourt, the honor of having created a heroic work with his *Symphonie néoclassique*, but heroism is not the whole of art. Then, with a precision verging on cruelty, Trotrot puts his finger on the whole problem of modern art: egotism.

In expressing his ego, [d'Harcourt] is incapable of attaining the contemplative or active states that are in constant contact with the selfless, by which I mean to indicate a single will that makes the being conscious as a part of the whole [. . .] This absence of the metaphysical sentiment is also the great inferiority of the modern musician, and in general of the artist of our time, an individualist caught up in all the suggestions of the sensorium.

Trotrot's point is at the same time very simple and very radical. He believes that the greatest art has its origin in the supra-individual world; it does not come from the ego, nor from the subconscious, but from the supreme Self (the *atman* of the Theosophists) which, in oriental metaphysics, is in contact with the source of all things. Alternatively, to employ Platonic terms, the beauty incarnated by the arts is a reflection of the beauty of the archetypal Ideas, which is known through the *nous* or supra-rational intellect. In modern esthetics such an idea is a heresy, or worse, an esthetic *faux pas* unworthy of serious consideration. But it has the advantage of not having altered from decade to decade, like fashions in critical theory, nor even from one millenium to another.

Paul Vulliaud, the editor of the *Entretiens idéalistes*, was a Catholic theosopher with extensive knowledge of the Hebrew Kabbalah and of Pythagoreanism. In our field of interest, he presented important articles on Lacuria (by Joseph Serre) and on Villoteau (by René Martineau). 7 An amusing consequence of Vulliaud's Catholic prejudice was the necessity he felt to purge Mozart of his adherence to Freemasonry. As an admirer of *The Magic Flute*, Vulliaud assures his readers that "Mozart was never a Freemason, because Mozart was all Love, and the odious sect has only one ideal, Hatred! and only one bond of 'solidarity,' that of Vengeance!" 8 Thus, he concludes, the composer, along with the masons Fénélon and the Chevalier Ramsay,

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must have belonged to the accursed society out of simple ignorance. In connection with this article of 1908 on "Mozart franc-maçon," it is worth pointing out that in the same year Vulliaud had written down the most complete history of the "Ordre du Temple rénové." 9 His manuscript tells of how, in the course of some spiritualist seances, the "spirit" of Jacques de Molay demanded vengeance for the massacre of the Knights Templar (of which he was the last Grand Master); and of how the young René Guénon was named Grand Master of the new Order. Vulliaud believed in occult conspiracies as the mainspring of history, and in the necessity to assert the Christian tradition against them. He was even suspicious of the very Catholic Saint-Yves d'Alveydre, calling him "the patriarch of a dying school of pretended Magi, that school whose theorems cannot allow one to test them." 10

On the positive side, Vulliaud enriches our subject with an article entitled "Première Mystagogique: principes généraux et applications; Cosmosophie musicale." 11 He starts with the familiar theme of the existence in the most ancient times of a sacred tradition that supposedly embraced every field of human existence, including the arts. In this epoch, Vulliaud says, music was an arcanum reserved for initiates alone. One survival of this arcanum is the secret method of pronouncing certain sacred words, preserved in the Church of Lyon. This church, he says, is very mystical, having been founded by disciples of Saint John, and its ceremonies preserved an esoteric side; this was the reason that the Chapter of Lyon never allowed their pontifical to be published. 12 (Readers of René Guénon will recognize here his guiding idea of the transmission of primordial knowledge across the centuries, under the veil of exoteric myth and ritual.) Music, Vulliaud goes on, was formerly a synonym for wisdom: according to Philo Judaeus, Moses was initiated into the *music* of the Egyptians, whereas in the Bible it says the *wisdom* [Acts 7.222]. What

mystery was taught there? Vulliaud answers this question by expounding the doctrine of the nine planetary and stellar spheres, that give forth seven different tones.¹³ They correspond, he says, to the seven vowels, whose resultant chord is "*La Parole, le Verbe, en un mot*" that Divinity which, by the organ of Apollo, is the imperishable Heptachord, ruler of the melodious concert of the celestial movements."¹⁴ In the Hebrew Scriptures, he continues, the name of God comprised seven vowels, corresponding to the Greek heptachord. For the Egyptians, the goddess Isis was a Muse who synthesized and incorporated the nine spheres, personifying wisdom and science. For the Hindus, it was Saraswati, goddess of the Word, who invented music. Vulliaud also explains the tradition of the harmonic intervals between the planetary spheres, apparently known to the Atlanteans as well as to Plato and to Hermes Trismegistus. In sum, he concludes, "Music reveals immediately the essence of the world."

Vulliaud drew a large part of his musical erudition from the forgotten work of Villoteau, but he was bolder, more esoterically inclined, and far

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more esthetic than the Egyptologist. Here is his description of the "cosmic concert" of the world's creation:

Six times the absolute power of God has developed its eternal thought; in other words, this power has manifested under the six forms with which its intelligence has clothed it. The unique divine essence has projected the six rays of Wisdom; its six supreme energies symbolize the deployment of its luminous effusions following the six directions, of which the Kabbalah speaks. The world is subject to the six principles, summarized in a seventh that brings them back to Unity; and boundless Time manifests itself according to these intelligible proportions; six cosmogonic epochs, summarized by a seventh, are the days needed for constructing the Building that Wisdom wished to dwell in; a correspondence to the six millenaries through which man passes before he realizes himself in integral Humanity, that is, the divine Humanity formed by the Christ and his members. Thus the divine manifestation produces itself in space by creating the planes of the world; on the substantial plane appears the first or undeveloped matter, which will develop in accordance with the natural laws of evolution to which all things are subject, including man. ¹⁵

Vulliaud, like Saint-Yves, felt strongly the tension between the septenary of the planets, perfectly expressed by the seven tones of the scale and crowned by the eighth tone the start of a new octave, as the eighth sphere of the fixed stars is the gateway to Heaven and the senary of the biblical creation myth, crowned by the seventh day, which does not fit any normal scale. In the *Archéomètre*, Saint-Yves made his own ingenious solution to this tension. Vulliaud was not prepared, musically or otherwise, to do so. If either of them had actually read Zarlino, they might have been delighted to find a perfect symbol for their purposes in Zarlino's use of the first six harmonic divisions of the string as the basis for all theory.

Vulliaud, as I have said, mistrusted the illuminist tradition. He asks whether Fabre d'Olivet, Saint-Yves, Edouard Schuré, Court de Gébelin, Stanislas de Guaita, Louis-Claude de Saint-Martin, and Papus are really the heirs to the esoteric tradition of Antiquity. Is there a single one of them who was attached by filiation to ancient initiation?¹⁶ To these Vulliaud prefers the traditional filiations of the Catholic Church and the Jewish Kabbalah, though he does admit that Pythagoreanism has continued to our day.

The last number of the *Entretiens idéalistes* contains two articles on this subject: "La Tradition pythagoricienne" by Vulliaud, and "Théorie des correspondances" by Emile Bernard. The first of these¹⁷ is an excellent summary of what scholars have discovered of ancient Pythagoreanism. The key ideas of this tradition, Vulliaud says, are Unity and Analogy. One modern example he cites is the so-called "Magical Calendar of Tycho Brahe," a great synthesis

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of the magical theory of correspondences, destroyed by official decree but rescued and completed two centuries later by Duchanteauth the eighteenth-century magus who converted to Judaism in order to learn the "High Science." This is the only example Vulliaud gives of the so-called living Pythagorean tradition, and he does not adduce any musical details. In this book, I have given sufficient examples to support his contention that this tradition, understood as a certain way of thought, has never disappeared in the West.

The painter and esthetician Emile Bernard supplies the musical element lacking in Vulliaud's exposition with a "keyboard" of colors and tones:

low octaves			middle		higher octaves		
	Black				White		
1	2	3	4		5	6	7
Violet	Purple	Red	Orange		Yellow	Green	Blue
C	D	E	F		G	A	B

This is Bernard's explanation of his arrangement: 18 yellow is essential, corresponding to G because this is the tone of the treble clef. The three primary colors form a triad, E-G-B; the secondary colors another one, D-F-A. The first fundamental chord is C-E-G (violet-red-yellow). He recommends that painters consider these harmonies, in which they will see a symbolism of colors. Consider the "scale" of the color blue, the symbol of ideality, he says: B C# D# E F# G# A#. Here the yellow (pure yellow being G) is pushed towards green, orange towards yellow, violet towards purple, purple towards red, and green towards blue. Several of the pure colors will be absent from this scale.

This system of correspondence may seem artificial and arbitrary. But at least Bernard was a real painter, familiar with the subtleties of half-tints and nuances. Perhaps his color-scales offer a clue to the early work of his good friend Paul Gauguin, with its harmonization of all the colors of the spectrum.

Riciotto Canudo: Beethoven, Nietzsche, and the Cosmic Orgasm

Wagner was not the only German master to incarnate for the *belle époque* the idea of music elevated to the status of a religion. A new cult arrived in 1903 with the publication of Romain Rolland's panegyrique, *Beethoven*, and lasted until the war. The musicologist Leo Schrade has studied this enthusiasm in detail.¹⁹ Although Rolland did not hesitate to cross the border into mysticism, he was not a real "esotericist" in the sense of possessing, or claiming to possess, a particular knowledge. The apostle of the new religion was Riciotto Canudo (1879-1923), a highly interesting figure whose career can only be sketched here. Canudo had discovered Theosophy in Florence in Lady Paget's circle, to which Mabel Dodge also belonged. He came to Paris in 1902 and was soon integrated into artistic circles as a critic and poet.

We can tell that we have reached the modern age when, in 1911, Canudo announces to the readers of *Les Entretiens idéalistes* the birth of a new Muse, presiding over the Sixth Art: she is none other than the Muse of the Cinema.²⁰ This is the theme of his manifesto:

We are living between two twilights: the evening of one world, and the dawn of another. This twilight is imprecise, and the contours of all things are confused. Only eyes made keen by the desire to discover invisible and original gestures of beings and things can orient themselves in the midst of the befogged vision of the *anima mundi*. But the Sixth Art announces itself to the unquiet and vigilant spirit. And it shall be the magnificent conciliation of the Rhythms of Space (the plastic arts) and the Rhythms of Time (music and poetry).

One thinks again of the artistic syntheses of the 1890s, such as Loïe Fuller dancing "like a sculpture developing in time": this new art would be their apotheosis. But why should Beethoven, rather than Wagner or even Debussy, have become the idol of this esthetic?

Canudo's words, which Professor Schrade found surprising, even shocking, are quite at home in the abnormal or supernormal world of this study. Here is an extract from the "Eloge de Beethoven" with which Canudo begins his work on the composer, and which is titled shamelessly *Le Livre de la genèse*:²¹

In Beethoven, matter makes that effort to vibrate in light that enchanted the paradisaal dream of Dante, absorbed in his God: the state that Christians symbolically call Paradise.

[. . .] Music represents the maximum of vibrations in matter before it turns into light. In the perpetual effort of *subtilization*, which comes out of the bowels of the earth and takes on its surface the various aspects of minerals, vegetables, animals, sentiments and thoughts, Music is at the summit of man's sentiment and intelligence. As matter in vibration, it masks the last limit between thought and fire. Music is the grand ardent halo of the invisible but sonorous flame that is the human will. In the hierarchy of "densities" of matter, it represents the beginning of fire, just as the sentiment that follows sensation represents the beginning of thought. Beethoven *subtilized* in it a thousand confused essences of nature, to which he gave a rhythm, an unbending Law, so that men might recognize them. He was the first to fix this Law, which in fact men had always glimpsed and which Bach had almost determined in the immense theistical shouts of his Cantatas, and above all in his Fugues.²²

Canudo is an evolutionist, for whom Beethoven is a key figure in the development of modern and future consciousness, because his music already

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contains the plan of the work that science will be obliged to undertake on the material plane:

In his attitude of epitomizer, Beethoven revealed himself as the father of the civilization to come, in the sense that he could exteriorize a quantity of music through which we, today, have become more profound and more alert to certain grand truths; he has presented to our "conscience" certain great harmonies of which Music gives us the confused vision and nostalgia. We can say that science will have to work long and indefatigably in order to bring to our sensorial "ego" all the "truths" that Music has deposited in anguished confusion at the depths of every modern soul. ²³

This conception of the prophetic power of music is rooted in the fundamental principle of Hermeticism: the correspondence of that which is above (in this case music, native to the world of archetypal ideas) with that which is below (here the material world). Canudo himself subtitles his work, of which this book is the first part, "Essay of metaphysical determinism." He again shows himself to be a Hermeticist in the course of this "*éloge de Beethoven*" when he evokes the principle of the twin poles of existence: compression or the centripetal force, and expansion or the centrifugal force. To the first, he says, belong coherence, attraction, love, and life; in music, it is harmony. To the pole of expansion belong the qualities of repulsion, dispersion, hatred, and death, whose musical reflection is melody. The parallel might be a little forced, and it certainly contradicts the traditional version that associates compression with death and expansion with life.²⁴ But this does not trouble Canudo in the midst of his poetical rhapsodizing. What is important to him is the lively impression of a struggle between two antagonistic forces, which he hears in every work of Beethoven. He calls these works a veritable battlefield between "the grand, calm synthesis of things" and the composer's "untamed and melancholic personality."²⁵

As in the case of Lacuria, it is Beethoven's Ninth Symphony that realizes for Canudo the goal of the composer's tormented quest. He can scarcely find words sufficiently elevated to describe it: "Vision of the spiritual Pyramid of the West," he says in his dedication; and "The Ninth Symphony with its choir is the voice of the Absolute-God made Art, the sonorous and profoundly metaphysical vision of the creation of our universe, the book of the great Genesis."²⁶ There follows a description of each movement: I. "The Cosmic Mist (Formation of Worlds)"; II. "The March of Worlds (Birth of the Earth)"; III. "The Sacred Night (Birth of Man)"; IV. "The Triumph of Man." At the end of the symphony, he says, "our Universe

was born. It was born for Love and for Death; for Death, so that other Universes might be born. And thus for all eternity."²⁷

The second part of Canudo's "Essai de déterminisme métaphysique" ap-

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peared two years later, with *Le Livre de l'évolution*.²⁸ This book is a historical outline of the spiritual evolution of the Western soul, from its primitive origins in dance and song up modern music (apparently meaning Debussy, Richard Strauss, and Paul Dukas). The stages of this evolution are illustrated by the great composers: the "Autumn of Christianity" by Luther and Palestrina; the human passion by Monteverdi; the animistic idea by Debussy, etc. But the work as a whole is dedicated to Beethoven, "the Master of my Philosophy." Canudo was obsessed by Beethoven and Napoleon alike: in brief, by the cult of the hero. The truth is that this author was not a Beethovenian, but a Nietzschean. In a third book on music, *La Musique comme religion du futur*, Canudo announces himself as against sentimentality, against morality, and finally against any religion that is not a handmaid to art. He wishes for a religion without rituals, formless, and abstract, such as music alone would be capable of creating.²⁹

It is clear what sort of religion inspires this *Livre de l'évolution*: it is the Dionysian orgy that Christianity rejected. To Nietzsche's "Dionysian," Canudo prefers the term "*uranique*," which "expresses more exactly the intoxication of the Primordial One, manifested not particularly by Bacchic exaltation, but by every joy derived from the contact of men with nature, Uranus better expressing the idea of unity in the cosmos."³⁰

Canudo's arguments are wanting in exact knowledge of music history: he relies on popular clichés for his impressions of Palestrina, Monteverdi, and even J.S. Bach.³¹ His approach to Beethoven is "poetic," but in the worst sense:³² music is nothing to him but a fluctuating world of images, which as a poet he tries to capture in a net of evocative words. His metaphysics is reduced to a cosmic orgasm. Canudo's is an occult philosophy, certainly, but as far removed as possible from the Pythagorean variety.

Fidèle Amy-Sage: From the Pyrenees to the Pharaoh's Tomb

Was it still possible to be a Pythagorean in the twentieth century, and especially after 1918? Surveying the postwar field, we find a notable absence of major figures such as Fourier, Fabre d'Olivet, Wronski, Lacuria, and Saint-Yves d'Alveydre. There is no want of theorists of speculative music, but none of them succeeded in founding a school. However, we should not forget that Ernest Britt and Charles Henry made their presence felt in the between-wars period, prolonging the Wronskian school, at least, into modern times.

This want of original thinkers allows, or compels, our attention to alight on someone who made his appearance in esoteric circles during the 1920s: Fidèle Amy-Sage (surely the pseudonym of a person I have not been able to identify). Here is what little is known of his own life. In 1913, Fidèle and his wife settled at Argelès-Gazost, in the Pyrenees, "to pursue in common some initiatic researches on the manifestation of spiritual life in the lower realms of Nature"³³ (one thinks of the *Son de la nature* of Edmond

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Bailly, and of the scholars around 1900). Together with Robert Buchère, who died in 1918, the Amy-Sage couple made "Hermetic" discoveries which they considered of immense importance. All three belonged "to the same Christic Initiation, in a purely Evangelical Fraternity, [. . .] attached to the Messianic Initiation."³⁴

Amy-Sage does not share with his readers the exact nature of these Hermetic researches, except that they concern harmony. His collaborator Buchère believed that this "restitution of Harmony to its celestial

diapason" would be a "capital event [. . .] by which the Temple of Solomon would be rebuilt and the New Jerusalem created. For, from the laws of this rediscovered Harmony, one will be able to reconstruct the Lost City."³⁵ Evidently this is yet another of those rediscoveries of ancient principles, of which we have seen so many. But Amy-Sage had no respect for other illuminates, living or recently deceased. He wanted to dominate the field of occultism, and to fill the gap left by the death of Papus.

When *Le Voile d'Isis* reappeared after the war (February 1920), Amy-Sage contributed an article on "La Musique de l'esprit: Demonstration de huit modes parfaits et de l'harmonie prototype de la MUSURGIE."³⁶ It is an explanation of the system he uses for his own compositions, which reputedly work marvels impossible to ordinary music. The difference, he says, is that this new music is not "passional," but "spiritual." Expressed in technical terms, Amy-Sage's originality consists in using: (1) a kind of parallel harmony, each note of the melody being accompanied by a consonant triad and replicated in the bass-line, as sometimes found in Debussy, Puccini, and Vaughan Williams; (2) a modal system that dictates which of these parallel chords are major and which minor. The resulting pieces are very simple in rhythm, with an absolute lack of dissonance, resembling some "New Age" music of today. One can imagine that in certain circumstances they might bring about the peace and calmness that the composer promises. The great artists, he admits, like to compose with "passional chords"; but is theirs a beneficent art when it causes unease, agitation, and disorder of sentiments and thoughts? "Know that every crude dissonance is of the purely passional order; while every consonance, by disposing to Repose, opens the door to Spirituality."³⁷

Amy-Sage's description of this music would give the improviser sufficient direction in itself, without the need for a score:

On the piano (or harp), the right hand plays in succession a determined number of notes, whose last rejoins the first in a continual return of the same psycho-musical formula.

The left hand plays simultaneously with the upper part a lesser number of notes that join up successively, forming a strongly-marked rhythmic figure. The bass notes are in a relationship either of octaves or of

perfect consonances with the corresponding notes of the upper part, and the whole is intended to produce, through the continuous repetition of the same formula, a PSYCHIC IMPRESSION purely determined by the constitution of an atmosphere of concordant sonorities, of a particular type for each SONORIL [=formula]".³⁸

This description puts me in mind of the music that was to be played not long afterwards at Fontainebleau, where George Ivanovitch Gurdjieff installed in 1922 what Amy-Sage calls "a curious mystical community,"³⁹ and Gurdjieff the "Institute for the Harmonious Development of Man." There the composer Thomas de Hartmann played on the piano obsessive melodies dictated by the Master, accompanied by drones or solemn chords. If we are to believe Amy-Sage, his *musurgie* was no less effective than Gurdjieff's: women claimed that it had healed them, and that they had been plunged through its influence into ecstatic states.⁴⁰

More interesting than his modal system, and much more esoteric, is an article by Amy-Sage entitled "Le Secret de la sépulture d'un pharaon,"⁴¹ inspired by the discovery of Tutankhamen's tomb in 1922. He describes the reasons and the methods of Egyptian royal burial practices. The purpose was to avoid the "astral dissolution" that normally follows physical death, so that the king could continue to live and act in his astral body. In another work, *The Mystery of the Seven Vowels*, I have given a translation of Amy-Sage's description of the musical ritual, using the seven vowels, which he imagines to have brought about the desired result.⁴² After the ritual was completed, "the marvelous existence of the Pharaoh's double was to have lasted as long as the land of Egypt."⁴³ But its effects could be destroyed if the tomb was violated and the magical objects removed. In this context, Amy-Sage reminds us of the sudden death of Lord Carnarvon, the organizer of the Tutankhamen Expedition, not long after the discovery and unwrapping of

the mummy.⁴⁴

Amy-Sage's scenario of the ceremonial magic worked by means of music on the Pharaoh resembles some episodes of the *Mission de l'Inde* of Saint-Yves d'Alveydre. Such coincidences do not necessarily indicate plagiarism, but are common among occultists. The essence of Amy-Sage's magic is that it puts the Hermetic law of correspondences into action a law whose application, he assures us, was known to all the peoples of Antiquity. He gives the name of *astrophonie* to this "science of the magical correspondences that exist between musical sounds, the articulate sounds of words, the lines of astral forces, and efficacious numbers."⁴⁵ Almost all of our authors were searching for these lost laws, which are the foundation-myth of speculative music. All their wrestling with planet-tone or color-tone correspondences had its practical counterpart in the ceremonial magic that never ceased to be performed in Europe during this period, though not often by the same people.

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Le Voile d'Isis and the Collapse of Universalism

In April 1928, the year when Fabre d'Olivet's work on music was re-is-sued, the journal *Le Voile d'Isis* dedicated a special number to "La Musique dans ses rapports avec l'ésotérisme."⁴⁶ It united all the esoteric currents of the time, leading one to anticipate that here, at last, the subject would be given its definitive presentation. Here is a summary of the articles:

[1] Ian-Mongoï, "Les nobles lamentations d'une humble servante" (p. 1)
Praises of Guido d'Arezzo; noble sentiments, nothing of substance.

[2] Grillot de Givry, "Du rôle social de la musique" (p. 7)
The secret of the effects of ancient music resided in the way in which it was listened to. Consider how little effect even *Parsifal* would have if the audience consisted only of socialists! Think, too, of the great psychological power of national anthems, which have no musical value.

[3] Fidèle Amy-Sage, "La magie des sonorités impressives" (p. 25)
There exists a "sonic force" as real as the forces of heat, light, and electricity. Magic consists in the application of this force, by virtue of the correspondences existing between it and the human soul. For instance [the only concrete example], cannibals always sing chromatic and hence dissonant melodies.

[4] Dr. Vergnes, "La musique et la médecine" (p. 35)
All the old tales of the curative power of music, and some more recent ones. Dr. Gordon y Arosta has compiled a list of the effects of instruments: the English horn calms anger, etc. There are different theories to explain this, but it certainly works.

[5] G. Tamos, "La musique et l'astrologie" (p. 47)
Chacornac, the publisher of *Le Voile d'Isis*, has asked him to research this subject. He has read Roussier, Bertet, Britt, and Dr. Allendy's *Le Symbolisme des nombres* (1921), which proposes a new correspondence of tones with the days of the week and their planets: Moon=C, Mercury=D, Venus=E, Sun=F (the "tonic of Nature"), Mars=G, Jupiter=A, Saturn=B. Tamos has no personal opinion on the subject.

[6] Auriger, "Alchimie et musique" (p. 53)
Alchemy and music have a common origin, as one can see in the great Hermetic poem of Orpheus, *Argonautica* (14th century BCE). The Greek gamma, the first note of the scale, is identical to the sign of Aries, with which the Great Work begins. A modern correspondence is that of Mendeleiev's periodic table of the chemical elements, with its octaves. "Should we envisage the three octaves as corresponding to the triple repetition of seven different and consecutive alchemical operations, to arrive at the end of the work?"

[7] Paulnord, "La musique et la mathématique" (p. 63)

Music, he says, makes this divine world of mathematics live. No substantial information.

[8] E. Caslant, "Génération de la gamme" (p. 67)

Good summary by Colonel Caslant of Charles Henry's theories, with a rare portrait of Henry, aged about forty.

[9] E. Britt, "La musique chinoise" (p. 79)

Report of the performance of an ancient Chinese "Hymn to the Ancestors" during a conference on Chinese religion, Brussels, 1922. Reproduction of the score (p. 81). Although this hymn is pentatonic, the Chinese had long known the heptatonic scale, but preferred to avoid the difficulties caused by the tritone. The Troubadours were the first in the West not to fear to add the note B to the scale, to form the latter into the major and minor modes.

[10] "Tableau du développement physique et moral des êtres dans la nature de leurs sentiments et de leurs sensations; en concordance avec l'échelle acoustique, le cours de la vie humaine, les diverses modifications du globe terrestre: inspiré de l'Echelle du développement des êtres dans la nature, de J. Swiecianowski et modifiée par Ian-Mongoi" (p. 87)

Deformed version of Swiecianowski's scheme by an editor who does not even understand how the notes fit on the keyboard.

The wealth of articles on the subject exceeded the bounds of a single number of *Le Voile d'Isis*. Consequently, two extra articles appeared in the succeeding numbers:

[11] P. Lastra, "Musique et prophétie" (May 1928, pp. 331-334)

Review of Henriette Wild's *Formation du mode mineur par l'évolution, la transformation et la fixité* (Paris: Fischbacher, 1898). Wild was a composition pupil of Auguste Barbereau [see page 99]. In her book, written in 1889, she began with music and ended with prophecy, associating six sharps, six flats, and six scales with the apocalyptic number 666.

[12] Gaston de Mengel, "L'ésotérisme dans la musique" (July 1928, pp. 482-515)

This attempt at universal correspondence is the most original article of the whole series. Somewhat indebted to Saint-Yves, de Mengel makes the tones of the scale correspond to the vowels, consonants, colors, geometrical forms, psychic states, and gestures, using for the latter a sort of stenography invented by François Del Sarte. "This permits us," he says, "to realize, at least in large part, that synthesis of the arts of which many have dreamed. It is thus that we have been able to regulate dances and ballets in which all gestures, steps, costumes, lighting contributed to reproduce the psychic states evoked by a song of Stradella, a sonata of Beethoven, a nocturne of Chopin, a rhapsody of

Liszt, etc., whose results have been much appreciated." These concerts apparently took place in England. Very differently from other theorists, de Mengel admits that his system is only an attempt, in which some elements do not work as well as desired. He hopes to have contributed to the reconstruction of the traditional arts, "of which the modern world seems to have lost every notion."

In one sense this special number of *Le Voile d'Isis* is a recapitulation of the themes I have been treating in the preceding four chapters. But it is the work of epigones. There is a lack of assurance and an absence of any directing thread. One has the impression that the editor asked all his friends to write something about music, and that they did their best, whether or not they knew anything about the subject. Speculative music seems to have suffered the same dissolution that was affecting all the arts in this period, resulting in "free verse," abstraction in painting, surrealism, and atonal music. Had speculative thought collapsed in the face

of a modernity that wanted to know nothing of the past?

Some people outside the *Voile d'Isis* circle still managed to defend a more serious Pythagoreanism, and to pursue the lost wisdom of music and number. One of these was Alphonse Paviot, Professor at the Institut professionnel de Monaco, who wrote a series of books: *Astral des couleurs*, *Astral des plantes*, and *Astral des sons*. Here I treat only the third of these.⁴⁷ Paviot conceived *Astral des sons* as a reply to the question of why there are different scales in use in the world:

if our ear revolts at hearing certain melodious accents, such as those of Hawaii, it is simply through a want of education, for the Hawaiians are in possession of the traditions of the Atlanteans, who were by no means, inferior to ourselves in the mystic sense. Consequently there is no "barbaric" music, whether that of Japan or Arabia, but only a music as natural as our own, attached to celestial Music by one of the nine points that characterize the divine concerts.⁴⁸

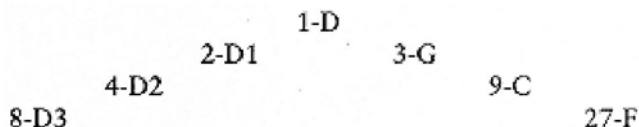
Refreshing sentiments, after the Eurocentrism of the nineteenth century but Paviot was no ethnologist, nor was he able to attach these foreign musics to cosmic principles. He was more concerned with finding the numerical keys to the solar system. In the enormous numbers he drew from calculations of the earth's orbit around the sun, he thought he had discovered the tones of all the scales, including those of Pythagoras and Ptolemy-Zarlino, which in his work still play the part of rivals. Paviot believed his discovery to mark a turning-point in the history of science.

Another giant effort to ascertain the nature of universal harmony led to the masterpiece of Dom Néroman (=M. Rougié⁴⁹), *La Leçon de Platon*.⁵⁰ As an engineer, author of a *Grande Encyclopédie illustrée des sciences occultes*,

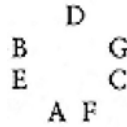
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(Strasburg, 1937), and of several books on astrology, Néroman finished in 1941 this dense commentary on the cosmology of Plato's *Timaeus*: a work of 446 pages crammed with mathematical tables and geometrical diagrams. Reading it is difficult for non-mathematicians, but it is easy enough to define the author's attitude to the musical question. Néroman offers an explanation of the two scales, neatly arranged on the circumference of a circle and a spiral; also a "spatial scale" in three dimensions, of which one gives the powers of 2 (octaves), the second, the powers of 3 (fifths), and the third, the powers of 5 (major thirds). This is nothing but an ingenious expression of the exoteric relationship of music with geometry. But the author also subscribes to the theory of cosmic correspondences, whose explanation he finds in the cosmogonic scale of Plato's Demiurge. According to the Pythagorean philosopher Timaeus of Locris, the Demiurge created the World-Soul with the numbers 1,2,3,4,9,8, and 27. A well-known diagram (already given in Abbé Roussier's version; see page 31) arranges these numbers and their corresponding tones in the form of the Greek letter lambda:



Néroman's originality consists in bending round this lambda to form the circumference of a circle. In so doing, he was troubled by the four repetitions of D in different octaves. They are for him "the unknowns in the problem to be resolved. [. . .] If we want to place the three tones of the scale on the septenary, we will need to replace each of these three Ds with one of the tones A,E,B." 50 Having taken this decision, which he neither explains nor justifies, it is easy to transmogrify Plato's double progression into a "heptagram" of the seven tones:



Once the seven tones are placed in a circle, one can draw many conclusions from them that have nothing to do with the *Timaeus*: correspondences with planets, colors, etc. I draw attention to this revealing detail in Néroman's formidable work because it seems typical of the mentality I have discussed on more than one occasion. Néroman's mathematical virtuosity almost succeeds in convincing us that he has discovered something new or immensely old and that his developments of it are the unveiling of Plato's secret. There are indeed many wise observations in *La Leçon de Platon*, which is an ad-

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vanced course in four of the five traditional subjects enumerated in Plato's *Republic*: mathematics, geometry, stereometry, astronomy. But it adds nothing to our understanding of the fifth subject: harmony, which to Plato was the crown of the whole syllabus.

Another theorist of cosmic harmony, Prince Matila Ghyka, had the imagination and the urbanity to avoid the short-sightedness of those obsessed with their own systems. Although Ghyka did not have much musical knowledge, his two-volume work, *Le Nombre d'or*, 51 shows an esthetic intuition far above the norm. He saw in the arts of Antiquity a transmission of secret knowledge. Taking as his guiding thread the Golden Section, he is much more successful in the plastic arts than in music. One reason for this is the irrationality of the Golden Section, which cannot be expressed in whole numbers although the Fibonacci Series (1, 2, 3, 5, 8, 13, 21, 34, 55 . . .) progressively approximates it. The proportion of approximately 0.618:1 gives a musical interval in between the major and minor sixths, which has never had any melodic, harmonic, or rhythmic function. The only place the Golden Section does seem to operate in music is in the parameter of form. Analysis of pieces from widely different periods has revealed the instinctive use of the Golden Section, for instance in making the two sections of a movement proportionate as 1:0.618. Among modern composers, Debussy and Bela Bartók used it consciously, the former probably under the influence of Charles Henry's theories (see page 160). Unfortunately these discoveries postdate Ghyka's work, so that he did not have the pleasure of learning of them and perhaps of completing the musical portion of his wide-ranging study.

Jean Thamar: The Guénonian Challenge and the Rejection of History

One could continue by treating several other works of the 1930s and 1940s, each of which treats a particular aspect of our subject. Some examples are: Prudent Pruvost, *La Musique rénovée selon la synthèse acoustique* (Paris: Société française d'éditions littéraires et techniques, 1931), which reconstructs many scales on the basis of the harmonic series; Alexandre Dénéreaz (of the University of Lausanne), *Cours d'harmonie* (Paris: Foetisch, 1987), which includes an original version of the planetary harmonies; Hélène de Callias, *Magie sonore* (Paris: Vega, 1938), a brief summary with new anecdotes; Anne Osmond, *Le Rythme, créateur de forces et de formes* (Paris: Editions des Champs-Élysées, 1942), an excellent survey of the subject by an admirer of Ghyka; Petrus Talemarianus, *L'Architecture naturelle* (Paris: Vega, 1949), a Hermetic synthesis in elephant-folio format, influenced by Warrain, where music occupies a surprisingly small part.

None of these works, for all their virtues, dispel the impression of the between-wars period that we have already received from the *Voile d'Isis* collection. The reason seems to be that all the elements that once nourished

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speculative music have now died. The general public, having at last digested scientific materialism, has rejected the occultism with which it flirted at the turn of the century. At a higher level, the efforts to reconcile modern science with occultism have failed: psychical research is no longer a respectable field for Polytechnicians and Fellows of the Royal Society. The idealism of the prewar period has vanished along with its esthetics. Does any way remain open that can avoid the triple impasse of scientific materialism, dogmatic religion, and low-grade occultism?

It was the advantage of René Guénon (1886-1951) that he responded to this deep-felt need, taking in hand the moribund *Voile d'Isis* and transforming it into *Les Etudes traditionnelles*, a mouthpiece for his own philosophy. 52 Guénon's program was the creation (which he regarded as a re-creation) of a world-view based not on the recent enthusiasms of occultism but on the esoteric doctrines of all religions. These he supposed to be identical, whatever the differences on the exoteric level, and to derive from a "primordial tradition" revealed to mankind in prehistoric times. Guénon's "traditionalist" philosophy necessarily embraced every conceivable field: religious practice, philosophy, politics, history, arts, crafts, and of course music.

Guénon himself was singularly insensitive to the arts, though his first wife, Berthe, was an amateur pianist. His copious writings contain nothing on the subject of music. Nevertheless, his oeuvre supplies the intellectual scaffolding for the reinterpretation of every domain of human activity. He himself had found in Hindu metaphysics the best framework for understanding the various manifestations of universal and eternal wisdom, each situated at its proper level in the hierarchy. His early works *Introduction générale aux doctrines hindoues* and *L'Homme et son devenir selon le Védantâ* first present the principles of "tradition" as he conceived it.

Among the disciples whose writings filled the renovated *Voile d'Isis*, Jean Thamar was the first to formulate a "Notion de la musique traditionnelle." 53 He was fortunate in having available the work of another French savant, Alain Daniélou (1907-1994), who had done for Indian music what Guénon had done for its philosophy, namely interpreted it to the West in a context of respect and belief in its supreme value. Daniélou's study of the scales 54 was written not in the spirit of dogmatic traditionalism, but in that of a European who believed that he had found, in the course of his studies of Oriental music and religion, a universal significance that the modern West had lost.

Thamar, combining the Guénonian approach with Daniélou's illustrative materials, touches on all of the themes listed on page 27 as permeating the French movement of musical esotericism: (1) the inferiority of the moderns and their music; (2) the superiority of the ancient nations, especially Egypt, and the degree to which the Greeks are indebted to them; (3) the admiration for Chinese civilization, and the proof it gives of an ancient universal tradition; (4) the correspondence of the planets with tones and with the days of the week; (5) Pythagorean tuning, based on the powers of three, as the true

principle of the scale; (6) the evils of equal temperament; (7) the priority of melody over harmony, and of the voice over instruments.

Taking these one by one as they are treated by Thamar will show how they could be adapted to the twentieth, as to the eighteenth century. Guénonian traditionalism regarded the period since the Renaissance as one of universal decadence, but it could not be denied that the same period had unearthed all the sources necessary for a universal view of human culture. When the history of India was better known, for example, there was no longer any need to wonder, with the savants of 1800, whether the Chinese had given their musical system to the Greeks or vice versa.

Jean Thamar shared Guénon's dismal view of modern Western civilization. He regards as an "excrecence" everything that has taken place since humanism created a gulf, as he says, between the Middle Ages and the Renaissance. The elements of his polemic are the multiplicity, the dispersion, decadence, profanation,

reversal of values, and the deliberately "a-cosmic" quality of modern Western culture. This gives him a generally unsympathetic approach to post-Renaissance music, whose greatest fault he holds to be polyphony. He seems unaware that the Renaissance period was no more polyphonic than the Middle Ages; in fact, that polyphony was cultivated in religious music as early as the tenth century. However, this does not change Thamar's basic rejection of polyphony as the mark of modernity.

His objection to the simultaneous harmony of tones, the obvious result of polyphony, is that it turns the listener's attention away from the successive, hence dynamic "harmonies" of melodic intervals, and on to the static harmonies of chords:

Redundant and at first anodine, to all appearances, harmonization became a virus that would gradually alter the very structure of the musical art. Without entering into technical details, we recall that two conditions are avowedly indispensable to polyphony: the tempered scale and the elimination of the modes. These are the conditions without which it is impossible to transpose a piece freely from one tonality to another, and notably to transfer the so-called "perfect triad" to any pitch. 55

Beside this impoverishment of the musical system, Thamar objects that simultaneous harmony trespasses on the field of architecture, an art that is essentially static and linked to space, whereas music is dynamic and linked to time. The result is harmful to the listener in that he can no longer grasp each interval, the acoustical information contained in a single triad being far too complicated for the ear to perceive them one by one; hence perception becomes altogether "passive and superficial,"⁵⁶ "sensibility softens and [. . .] its 'pleasure' gives way little by little to tedium."⁵⁷

The melodic poverty of modern music, brought about by abolishing the modes and the small intervals of traditional music, was matched, according

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to this severe critic, by the impoverishment of its rhythm. The error in this case was apparently the replacement of long and short notes by strong and weak accents. Thus music lost the subtle nuances of rhythm that it had shared with poetry, in favor of a simple division into groups of two or three beats. Thence came the continual breaking of music's continuity by cadences, destroying the "sensation of eternity" that listening should give. ⁵⁸ Thamar names only two composers of this abominable music: J.S. Bach and Wagner. Of the *fin-de-siècle*'s idol, he only mentions the "plump polyphony." As to Bach, whom Thamar blames a decisive role in for the abolition of the basso continuo, the triumph of polyphony, and the coming of the tempered scale, he remarks that "'geniuses' may, through their dazzling gifts, lend themselves unconsciously to 'gilding the pill' of decadence."⁵⁹ This opinion is not far distant from Fidèle Amy-Sage's mistrust of any music more complex than his own.

When Jean Thamar writes of the music he considers "correct," he has a great advantage over the theorists of the past. Their horizon had been bounded by lost civilizations to which they attributed a music that was magnificent, but impossible to recapture. I have described Fabre d'Olivet's efforts to revive the "Hellenic mode"; it is regrettable that he could not hear recordings of real modal music, such as Indian or Chinese. Thamar had heard not only these, but the traditional musics of the Near-East, Japan, Bali, Africa, and the Americas. He cites them all, following the Guénonian principle that every people still possesses a religion and a culture descended from the "primordial tradition," except where the influence of the modern West has extinguished them. The "superiority of the ancient nations" has now become the superiority of the rest of the world.

The doctrine of correspondences is naturally part of traditional cosmology, but Thamar has the good sense to present only the known schemes, not to try to impose a personal system. He accepts that the archetypes of harmony and rhythm are to be found in the heavenly spheres, and especially in the sun:

Thus one might say that out of the sun come the "legs" of a cosmic "compass," as well as of a

"scale"; while measuring the universe by its rays, it balances its actions and reactions by its alternating movements or invisible "pulsations," that, perpetually provoking and correcting the transitory imbalances, constitute the vital rhythm of the world.⁶⁰

Considering this kind of musicality of the spheres, Thamar rejects the astrological and astronomical hierarchy based on the proportions of their distances in favor of the durations of their revolutions around the earth: another rejection of the static in favor of the dynamic.⁶¹ He says that the planet-tone correspondences have nothing absolute about them, but that in China and India they are generally:

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Moon	Mercury	Venus	Sun	Mars	Jupiter	Saturn
C	D	E	F	G	A	B

The days of the week thus follow the cycle of fifths (which Dr. Allendy had already suggested see page 210):

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
F	C	G	D	A	E	B

while the natural scale of the vowels, running from the lowest, U, through the central, A, to the highest, I, partly coincides with the vowels of the tone-names "Do . . . Fa . . . Si." ⁶² He wonders whether originally the correspondence of vowels with tone-names was exact.

One will notice two differences between this "Oriental scale," which is the same as the modern major mode, and the conjunct Dorian tetrachord which the Greeks regarded as the archetypal and planetary scale. First, one rises, and the other falls. Second, the last step is different.

"Oriental"/major	C	D	E	F	G	A	B
Greek Dorian	A	G	F	E	D	C	B

Thamar's lapidary argument now begins to show some cracks. When he judges the major mode in the context of Western music, he reminds us that in the Christian Middle Ages it was known as the "lascivious mode" and banished from all traditional music.⁶³ To the Greek Lydian (which is our major), which he calls "egocentric, lascivious, and earthbound," with a "'bourgeois' psychological climate," he contrasts his favorite mode, the "austere, virile, and serene" Dorian.⁶⁴ True, he concedes that in India as in the West, the usual mode has "descended" in the course of ages from the noble Dorian to the earthy Lydian; but in that case, why does he seek the cosmic correspondences, which must stem from the most ancient period, in the most modern mode? A scale banished by every traditional civilization can hardly be that of the spheres! I draw attention to this seemingly trivial point as betraying the author's determination to find in musical systems whatever he needs to support his conclusions.

It goes without saying that Thamar detests equal temperament. Even in China, he says, where the twelve chromatic tones were set out on a circle, they are not the same as our equal semitones, for the thirteenth member of the triple progression, B#, is not identical to the first one, C.⁶⁵ This non-closure of the cycle of fifths is symbolic to him: the twelve tones represent the lunar months, which do not always coincide with the solar year.⁶⁶ The foundation of every scalediatonic, chromatic, and enharmoniclies in the series of fifths. But Thamar is not so dogmatic a proponent of the triple progression as some of his predecessors. Having studied Hindu theory, he is

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aware that Indian music has two sizes of tones, major and minor, derived from the harmonic series and accommodated in the scale of 22 shrutis. He credits Daniélou, in the work cited, with having found how the Indian system reconciles the Pythagorean and the Ptolemaic (or Zarlinian) systems in a comprehensible whole.

These facts explain why Tamar places melody above harmony. For the same reasons, "traditional music is essentially sung"; instruments are there in the first place to hold the drone, then to imitate to the best of their ability the expressivity and subtlety of intonation of the human voice. The domination of modern music by instruments, especially the piano the most limited of all is one more mark, for him, of its decadence. But he values this drone, as giving to melody a sense of orientation by always sounding the tonic of the mode. It is in this sense that traditional music does not lack harmony, for every melodic tone sounds an interval with it. Following Daniélou, Tamar advises that the drone should always be used in the one traditional repertory that survives in Western music, namely Gregorian chant. Only thus will the modern listener appreciate the differences between the church modes, which otherwise his ear will always interpret as either major or minor. 67

There is one more music, even superior to pure melody, which "implies a state of consciousness that is supra-terrestrial and 'ineffable'" like that of the Hindu gods as they lift their song to the celestial spheres. In this song, "the words (and with them the thought) are confounded with their metrical rhythm, which in turn dissolves and spreads out in the vibrations of tone." Tamar cites as the sole known example monotone psalmody: "A 'pure tonic,' or all the possible intervals virtually present in the form of harmonics, are only actualized in inaudible mode, that is, in the form of an 'interior song.' This applies especially to the *nada sadhana*, or 'realization by concentration on a musical tone,' and, in a general way, to the invocation *recto tono* of any incantatory formula." 68 One is then listening to the interior tone of the mantra as a microcosmic reflection of the cosmic Word.

Tamar's point of view is a "radical traditionalism," in the sense that it enjoins the overthrow of the whole modern edifice in order to restore continuity with the immeasurable past. In the case of music, this requires that it be rebuilt from its foundations on spiritual and cosmological principles. Tamar seems unmoved by the sacrifice of harmony, counterpoint, tonality, modulation, and everything else that has made Western music what it is. This is because he was a Traditionalist philosopher in the Guénonian mold, which is to say that he was first and foremost a moralist. All the products of culture, civilization, and history pass before the stern eye of such a man, to be divided into the good, "traditional" ones and the bad, "anti-traditional" or "counter-initiatic" ones. Western culture since the birth of humanism in the fifteenth century is by Guénon's definition anti-traditional, therefore its products are to be decried. The only "good" arts are those of the unsullied, non-Western civilizations, and of the medieval West.

Conclusion

Tamar's articles close the period which opened with Castel and Roussier, treating the same themes from the point of view of modernity and its refusal. Practical music in France had in the meantime traversed the distance from the last works of Rameau to the first works of Pierre Boulez. No one, least of all myself, would pretend that the people treated in these pages have made a contribution comparable to that of the composers, great and small, of the same period. The very fact that the speculative theorists have gone virtually unnoticed by scholars is eloquent: perhaps they are not very worthy of notice.

I do, however, draw certain conclusions from this parade of characters that may apply beyond their little world. The study of speculative music makes it plain that the universe is a veritable *speculum*, that is, a mirror, which reflects the constructions of the human mind. To someone who is looking for confirmation of his cosmological beliefs, the universe never fails to furnish the proof desired even if he believes that the earth is flat, and conducts experiments to prove it. But other persons will find that it confirms their beliefs,

which may be contradictory to the first. Efforts to prove the "Harmony of the Spheres," especially, on the basis of astronomical knowledge are invariably crowned with success. The Pythagoreans, Kepler, the followers of Bode's Law, Professor Paviot: they all looked for harmony in the heavens, and all found it to their own satisfaction. One possible conclusion is that the universe is harmonic by nature, but that its harmony is of an unimaginable and incalculable complexity. Each seeker finds only one aspect, as it were a few chords of the whole work, and is satisfied by them, believing himself to have found the master-key.

This satisfaction accounts for the messianic convictions of so many speculative theorists. Fabre d'Olivet, Fourier, Wronski, and Saint-Yves d'Alveydre all believed themselves to be blessed with a special mission to enlighten mankind. Without that, none of them would have stayed the course of their endeavors. Surely they were all "wrong" to some degree, yet I no longer find this a very serious matter. It seems much more important that they were each true to themselves, producing a body of work that can be enjoyed as one enjoys a work of fiction, or a symphony. The truth or falsehood of these is immaterial: their purpose is to nourish the imagination with an alternative reality. While intellectual honesty has prompted me to point out the weaknesses in some of these systems, it is not with the idea of annihilating them. The Archéomètre and the Law of Creation have some truth about them, I am sure, though they are very far from being the whole truth. As for the historical vision of Fabre d'Olivet and the social vision of Fourier, I cherish them as delightful and iconoclastic alternatives to the dryness and the joylessness of more important thinkers.

The study of this current of thought and of occult philosophy in general

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raises questions about what constitutes "importance." There have been some very important people who believed in the doctrine of correspondences and/or the metaphysical basis of the musical scale, for instance Pythagoras, Plato, Boethius, Kepler, Newton, and Goethe. During the period treated in this book, most people had ceased to believe in these and other facets of occult philosophy. Yet those whose beliefs went against the current of their age not only contributed a welcome thread of color to the tapestry of human experience: they remain as a minority opinion that may in some respects be wiser than the majority verdict.

The wisdom in this case concerns a mythic broadness of vision that transcends the here and now. As with the religious myths that give meaning to people's lives, it is not very useful to classify it as true or false. After all, "false" myths are no less powerful than "true" ones to kindle emotions, and even wars. I have tried to appreciate speculative music as one appreciates someone else's religion: as a possible way of constructing one's immaterial reality.

The myth of speculative music is that music has a profound connection with the greater world of human knowledge and experience. This view runs directly counter to the over-specialization that makes academic scientists and humanists (to say nothing of musicians) virtually incapable of transdisciplinary conversation. I say "transdisciplinary" rather than "interdisciplinary," because it is a case of finding a point of view from which disciplinary differences can be transcended. To assume that point of view requires a certain courage, and a sense of the human endeavor as something too important to be viewed from one's own discipline alone. Almost all of our speculative music theorists have done this. They were in search of an integral knowledge, in which music, as the mysterious meeting-point of number and emotion, must surely have a part to play. And as pre-modernists, they were still able to believe that ultimate answers were there for the finding.

We may not believe this any more, but that is no reason to reject their endeavor. The occultism that puzzled and fascinated the nineteenth century has been replaced by the puzzles of modern physics, which show that we do live in a paradoxical universe, however rationally we may image our own lives therein. Practical music, especially that of the period treated in this book, continues to challenge the rationalist and the materialist view as it speaks to us with undiminished eloquence, to the extent that one may well regard it as the doorway to an alternative cosmos. What we have seen in the French speculative theorists is a series of exploratory journeys, made in the hope of penetrating to its source. If the attempts of these old-fashioned cartographers are sometimes comical (if they tend to say "Here be Dragons"), we must still

Notes

1. In his poem *Eine Kapitulation*, a celebration of the Prussian victory.
2. *La Rénovation: Revue de l'art le meilleur*, January 1907, 183.
3. *La Rénovation*, February 1909, 170.
4. Review by Armande de Polignac, in *La Rénovation*, January 1906, 165. Varèse is the only well-known modern musician to have recognized Wronski's ideas and to have quoted his definition of music. Incidentally, Varèse also composed a large orchestral work entitled *Arcana*, whose score was headed with a quotation from Paracelsus.
5. Polignac 1905, 71.
6. *Les Entretiens idéalistes*, 1906, 117-125.
7. Serre 1910; Martineau 1913.
8. *Les Entretiens idéalistes*, 1908, 300-310; article dedicated "à l'écrivain catholique Emile Bernard."
9. See Laurant 1975, 43ff.
10. Vulliaud 1911, 151f.
11. Vulliaud 1909.
12. Vulliaud 1909, 298f.
13. The nine spheres are the Fixed Stars, Saturn, Jupiter, Mars, Sun, Venus, Mercury, Moon, and Earth. There are only seven tones because Venus and Mercury have the same one, and Earth is silent.
14. Vulliaud 1909, 300. I leave the first phrase in French because English translates *verbe*, *parole*, and *moi* alike by "word."
15. Vulliaud 1909, 303-304.
16. Vulliaud, review of Marc Saunier, *La Légende des symboles philosophiques, religieux et maçonniques*, in *Les Entretiens idéalistes*, 1911, 38.
17. Vulliaud 1914.
18. Bernard 1914.
19. Schrade 1942.
20. Canudo 1911.
21. Canudo 1905, illustrated by P. Vulliaud and C. Dalbanne.
22. Canudo 1905, ii-iv.

23. Canudo 1905, xivf.

24. Canudo's scheme reappears in the philosophy of Alain Daniélou; see the very Hermetic introduction to his *Hindu Polytheism* (New York: Bollingen Foundation, 1964). One link between Ghyka, Canudo, and Daniélou is the high value that their philosophies place on the sexual act.

25. Canudo 1905, vif.

26. Canudo 1905, xvii.

27. Canudo 1905, 57 (conclusion of the work).

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28. Canudo 1907/08. The third, unfinished part was to be *Le Livre de la démonstration; la morale dans la nature*.

29. Canudo 1913.

30. Canudo 1907/08, 67n.

31. The same could be said of Cyril Scott, author of *Music, Its Secret Influence Through the Ages* (London, 1933). On this problem, see my review of the French edition of Scott's work in *ARIES* 6 (1987), 21-26.

32. It is not surprising to discover that Canudo wrote a vast *Trilogie méditerranée*, a verse-drama with leitmotifs, written in unrhymed Latin meters resembling the "Eumolpic verses" of Fabre d'Olivet.

33. *Le Voile d'Isis*, 1923, 157.

34. *Le Voile d'Isis*, 1923, 158.

35. *Le Voile d'Isis*, 1923, 158f.

36. Amy-Sage 1920. I cite the pagination of the article as published separately.

37. Amy-Sage 1920, 30.

38. Amy-Sage 1920, 34f.

39. *Le Voile d'Isis*, 1923, 300.

40. *Le Voile d'Isis*, 1923, 306.

41. Amy-Sage 1923a, 317. See the same year, p.692, for a defence of the article by its author.

42. Godwin 1991, 70f.

43. Amy-Sage 1923a, 319.

44. For another Egyptian fantasy of an occult and musical nature, taken from J.-C.-V. Mardrus, *La Toute-puissance de l'adepte. Transcription des hauts textes initiatiques de l'Égypte: le Livre de la vérité de parole* (Paris: Bibliothèque Eudiaeque, 1932), 79-87, see Godwin 1991, 71-74.

45. Amy-Sage 1923b, 636.

46. *Le Voile d'Isis* 1928. I cite the pagination of the special number as published separately.
47. Paviot 1924.
48. Paviot 1924, 15.
49. Néroman 1983, 99, reproduces one of the author's articles published in 1906 under this name.
50. Néroman 1983, 294.
51. Ghyka 1931.
52. Guénon began to contribute to *Le Voile d'Isis* in 1925. The journal changed its name to *Etudes traditionnelles* in 1936.
53. Tamar 1947-49.
54. Daniélou 1959. First published in English (*Introduction to the Study of Musical*

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Scales, London: The India Society, 1943), on account of wartime conditions in France, this work was augmented for the definitive French edition.

55. Tamar 1947-49, no. 263, 284.
56. Tamar 1947-49, no. 263, 283.
57. Tamar 1947-49, no. 263, 286.
58. Tamar 1947-49, no. 266, 63-66.
59. Tamar 1947-49, no. 279, 308. The author is careful to remind us that Johann Sebastian Bach was a Protestant (hence "anti-traditional").
60. Tamar 1947-49, no. 266, 56f.
61. Tamar 1947-49, no. 266, 66.
62. Tamar 1947-49, no. 270, 252n.
63. Tamar 1947-49, no. 263, 284.
64. Tamar 1947-49, no. 272, 350.
65. Tamar 1947-49, no. 270, 252.
66. Tamar 1947-49, no. 277, 225n.
67. Tamar 1947-49, no. 271, 308.
68. Tamar 1947-49, no. 279, 315.

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Appendices

Souvenirs Mélancoliques

2

SOUVENIRS MÉLANCOLIQUES
ROMANSE HÉLLÉNIQUE.

Andantino.

PIANO
ou
HARPE.

The musical score is written for piano or harp. It begins with a treble and bass staff. The treble staff has a key signature of one flat (B-flat) and a 2/4 time signature. The bass staff has a key signature of one flat (B-flat) and a 2/4 time signature. The score is divided into several systems. The first system shows the piano introduction with dynamics p, rinf., and f. The second system shows the vocal melody with the lyrics 'Qu'êtes vous de....ve...'. The third system shows the piano accompaniment with the lyrics '...ous beaux jours de mon en...fan...ce • momens trop tôt pas sés qu'êtes'. The fourth system shows the vocal melody with the lyrics 'vous de....ve....nus qu'é....tes vous de....ve....nus ! doux loi....'. The fifth system shows the piano accompaniment with the lyrics '...sirs jeux ri...ants char...me de l'inno....cen....ce, char...me'. The score ends with a double bar line.

Qu'êtes vous de....ve...

...ous beaux jours de mon en...fan...ce • momens trop tôt pas sés qu'êtes

vous de....ve....nus qu'é....tes vous de....ve....nus ! doux loi....

...sirs jeux ri...ants char...me de l'inno....cen....ce, char...me

Chez DE MONTIGNY au grand magasin de Musique, Boulevard et vis-à-vis la rue Montmartre N° 31.

de l'inno...cen...ce tels que des son...ges vairs vous e.....tes dis pa...

rus vous é...tes dis...pa...rus!

2^e Strophe. { Ou sont ces doux transports, qu'inspiraient à mon âme
Le parfum d'une fleur, le vol d'un Papillon ?
Ils ont fui : d'autres soins ont amorti leur flamme
Et la réalité cède à l'illusion.

3^e Strophe. { Prenez baisers d'amour, que ma jeune maîtresse
Osa prendre et rendit sur mes lèvres de feu ;
Votre charme est passé : l'amour et son ivresse
Ne me font plus qu'amant : par vous j'étais un dieu !

4^e Strophe. { Un regard m'inondait d'une volupté pure ;
Un serrement de main comblait tous mes desirs ;
Mais, loin de mon printemps et loin de la nature,
Avec plus de faveurs j'ai moins de vrais plaisirs.

5^e Strophe. { Ah ! mille fois heureux celui dont la jeunesse
S'écoule lentement dans le même bateau ;
Qui, sous le même ombrage, a la même maîtresse,
Et la même houlette et le même troupeau !

6^e Strophe. { Nul souci, nul chagrin, nul soin qui le dévore ;
Rien ne change pour lui que le nom des saisons,
Et sa vie est un jour dont la tranquille aurore,
Du matin jusqu'au soir prolonge ses rayons.

La Tristesse d'Ulad!

Fiona MacLeod.

Edmond Bailly.

Con Moto.

PIANO. *ben marcato*

piu lento ma non troppo.

Ah! vous, là dans le gîte, n'en, dont le rite

animato, poco a poco. *Tempo, dolce.*

est sur moi com' une flamme de feu. Que di-je de la tristesse

des tristes, ses qui est mienne à cause de mon amour? Vous qui vivez à moi de

. A. 1. 5.



la où les arceaux - ciels sont bâ-tis, Est - ce femme que vous ô - tes, à l'ind qui vi - ra - la -



haut dans le si - len - ce? Plus vive.



Tempo.
Es - tes - je l'ai amou - à tra - vers le tem - pête et la - paix, à tra - vers le jour
Tempo.



et la nuit, Cor - le - s - j'ai trou - vé le chan - teur de chan - s à un - mer - reil - leux chan - t du cy - gne pour

. A. 1. 5

toi. Et j'ai bra-ve le mort, et j'ai bra-ve la vie et la ter-reur

et le tombeau. Et pour - tant ô Dieu, tu jet - tes ton ri - re sur ma pri - ère, sur ma

poi - ne, ô Dieu. *Tempo.* d'ai pro - di - gue tou - tes *Tempo.*

rit. *rit.*

chos ses joyeu - se - ment, rien que pour le conqué - rir Ro - ya - u - té et do - mi - na - ti - on des

. A. F. S.

hommes, la gloire de l'épée, et tous ces choses ex-cel-lentes.

Car en toi, à la fin j'ai ré-vé, en toi, à l'ad-ressé, se point les

poco rall.

Tempo.

hommes, j'avais tenu le tout ce qu'un homme ne peut trou-ver

Tempo.

Et j'étais comme les bœufs qui ne meurent pas.

p

Mais qu'est tout ce-ci pour moi qui suis U-lal le roi de l'air.

U-lal le chanteur de chants qui sont feu dans les cœurs de ceux qui se croient tout.

U-lal, l'air si sain des mers, ciel, les, qui peut se frayer.

rit. Tempo.

les vents et les vagues, béni, der les bûches les plus grises on l'a tiré des grâces d'un côté seif.

rit. Tempo.

A. L. S.

Qu'est tout ce ci pour moi qui suis seulement un homme qui cher - che, qu'il cherche pour tou.

jours et tou-jours l'a - me sœur de la sien-ne, l'a - me que tu es, ô Fand, qui na.

quis des fleurs sous l'arc-en-ciel, Vi-vi-fie-e par mon souffle, réchauf - fe - e sur mon sein, à

rall. Fand que j'aime et a - do - re. *Tempo.*

Car toutes choses sont vaines pour moi, sauf o - ne seule chose, et

cel - le - là n'est pas vain, car. Mon vœ - u se ma - pas - si - on, mon es - p

- ton - ce, ma Faut, que j'ai

con - qui - se de Il y - a - vil;

A 15,

9

Poco più lento.

Où se de ma ri - e, ma gloi - re, à re - se de l'a - ni -

Poco più lento.

riten. Tempo I;

... vers, mon se - re, Vois la mort est pour U - lal le roi

riten. Tempo I;

si tu dé - chois, en - ca - se que je sois des de - soun

qui ne meurent pas.

Mlle De launay 161

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ISOLA BELLA

Marquis de SAINT-YVES d'ALVÉYDRE



S.Y.P. 5755

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The image displays a page of musical notation for a piano piece, consisting of five systems of staves. Each system contains a treble staff and a bass staff, both in a key signature of two flats (B-flat and E-flat). The notation includes various musical elements such as notes, rests, and dynamic markings. The first system shows a continuous flow of eighth and sixteenth notes. The second system begins with the marking "poco rall." (poco rallentando), followed by "a tempo" (return to tempo), and ends with "cresc." (crescendo). The third system continues the melodic and harmonic development. The fourth system features a series of eighth notes in the bass staff. The fifth system concludes with the marking "poco rall." and ends with a final cadence. The notation is clean and professional, typical of a printed musical score.

S. L. P. 5755

a tempo

p *mf* *m.f.*

poco rall.

Andantino

mf *p*

S.V.P. 5755

The image displays a page of musical notation, likely a score for a piano piece. It consists of five systems of staves, each with a treble and bass clef. The key signature is two flats (B-flat and E-flat). The notation includes various musical elements such as notes, rests, and dynamic markings. The first system shows a melodic line in the treble and a more active line in the bass. The second system features a melodic line in the treble and a more active line in the bass. The third system shows a melodic line in the treble and a more active line in the bass. The fourth system features a melodic line in the treble and a more active line in the bass. The fifth system shows a melodic line in the treble and a more active line in the bass. The notation is written in a standard musical notation style, with notes, rests, and dynamic markings.

S. A. P. 2755

Allegretto

p

cresc.

piano

string.

f

Andante

S. Y. P. 5755



S. Y. P. 5755

Moderato

Allegretto

poco rall.

S. Y. P. 5755

The image displays five systems of musical notation for a piano piece, likely in a minor key (three flats in the key signature). The notation includes various musical elements such as dynamics, tempo markings, and articulation.

- System 1:** Starts with the tempo marking *a tempo* and the dynamic *cresc.* (crescendo). It features a series of eighth and sixteenth notes in both hands.
- System 2:** Includes the dynamic *f* (forte) and *dim.* (diminuendo). It features a series of eighth and sixteenth notes in both hands.
- System 3:** Includes the dynamic *mf* (mezzo-forte). It features a series of eighth and sixteenth notes in both hands.
- System 4:** Includes the dynamic *dim.* (diminuendo). It features a series of eighth and sixteenth notes in both hands.
- System 5:** Includes the dynamic *p* (piano). It features a series of eighth and sixteenth notes in both hands, ending with a double bar line.

Tempo markings include *a tempo* and *rall.* (rallentando). Dynamics include *cresc.*, *f*, *dim.*, *mf*, and *p*. Articulation includes slurs and accents.

S. V. P. 7755

stesso tempo

musical score for piano, measures 10-14. The score is in 3/4 time, key of B-flat major. It features a complex melodic line in the right hand and a more rhythmic bass line. Dynamics include *f* (forte) and *mf* (mezzo-forte). The tempo is marked "stesso tempo".

musical score for piano, measures 15-19. The score continues the melodic and rhythmic patterns. Dynamics include *f* (forte) and *mf* (mezzo-forte). The tempo is marked "stesso tempo".

musical score for piano, measures 20-24. The tempo changes to "andantino". The melodic line continues with grace notes. Dynamics include *f* (forte).

musical score for piano, measures 25-29. The melodic line continues with grace notes. Dynamics include *f* (forte).

musical score for piano, measures 30-34. The melodic line continues with grace notes. Dynamics include *p* (piano) and *f* (forte).

S. Y. P. 5755

11

rit.

Andantino

rall.

rall.

largo

pervicaci

pp

L. Pichot, op.

S. Y. P. 5755

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