THE PHILOSOPHY OF THE FUGUE

A Personal View

By Robert Temple

Fugues touch upon universal principles in a way which often does not occur to people who simply like listening to them or who enjoy playing them. Perhaps the essence of the fugue which is most profound could be described as *orderly recurrence.* This is like death and rebirth: a subject is stated and is then finished, but suddenly it is reborn and it lives on after all. It then lives a rich, new life of interaction. Or is the fugal process better described as one of *reflection*? Is a fugue more like looking in a mirror? You have a face, but you can only appreciate it and study it properly when a second version of it appears in the mirror, and you can then look at that. The recurrence, the reiteration of the face, adds an additional dimension which enables one to study the statement of the original subject: one's identity!

My friend Stefano Greco says that from the time he was a child he wondered why fugues were called fugues, for the Italian word *fuga* means 'escape'. Why would fugues want to escape? Escape to where? And what is it which escapes in a fugue? He now concludes that it is the *subject* of the fugue 'which is escaping from one voice to another. The listener should follow the theme while it is escaping.' Those are his words, uttered with the same charm of his smiling and delighted expression of discovery which always appears as he discusses these things. He takes a high view of fugues, especially those of Bach. He likes to stress to me that Bach never indicated instruments in his compositions unless they had been commissioned. So, for instance, 'The Art of the Fugue' specifies no instrument. It is pure music, the kind of music which one can *think* when alone in a room. Stefano says of Bach: 'Bach believed he was transcribing music from heaven. He was writing *absolute music.*'

I think we should consider these insights more carefully, especially in the light of fugues, for fugues are the 'most absolute' of all absolute music. What is it about them which makes them so mesmerising and which gives them their unique character?

I am tempted at this point to think of a wonderfully amusing book which I once read (and reviewed) by Anita Loos, famous for writing *Gentlemen Prefer Blondes.* Miss Loos was a delightful woman, whom I knew as an elderly woman when I was in my teens. She invented a 'dumb blonde' character called Lorelei Lee, and Lorelei was always blurting out hilarious stupidities which, after a moment of reflection, had something genuinely clever about them. One of these remarks was made into the title of the book to which I refer: *Fate Keeps on*

Happening. **Yes, it does. And after one has stopped chuckling at the inanity of saying so, one realizes that there is more to this than meets the funnybone. Take a step back for a moment and think about it: things happen, and then they keep on happening. That pretty well sums things up, doesn't it? But if we formalize this and express it as music, what do we have? We have the basis for a fugue. After all, in a fugue, a theme ('subject') is stated, and then it just keeps on happening.**

A fugal subject needs to resemble a 'soundbite'. That is, it must not be too long to be remembered by those of us who have feeble memories, it should be striking (otherwise why bother to have it 'go on happening'?), and it should be straightforward rather than over-complicated. Ideally, it should be as captivating and haunting as Proust's *petit phrase*, which he just could not get out of his mind. A perfect example of a fugal subject is the initial subject of Bach's *Art of the Fugue.* Who can forget it once he has heard it? 'Please,' we say of that, '*do please keep on happening!*'

In a fugue, after the initial subject has been stated, the composer then says it again. But the initial subject does not cease. Instead, it goes on wending its way forward in time, side by side with the re-statement. And from then on we have the delightful interplay of similarities and differences as the two voices move forward, generally joined by yet other voices, so that a magnificent polyphony can emerge and enthral us.

In speaking of fugues, I wish to make it clear that what I say is partially applicable to musical canons as well. But a fugue requires the full statement of the musical subject to occur before it can be repeated, whereas a canon allows the second statement of the subject to commence at any point, perhaps after even a few notes: a round such as those sung by children is a canon. In addition, canons do not follow rules of ratio and proportion which must be used in the composition of fugues. The entrance of the second voice of a fugue should commence on a note which is one musical fifth distant from the initial note of the fugue, whereas no such rule applies to a canon. One of the intriguing things about this curious rule of the fugue is that the ratio of greatest consonance is applied in the fugue in a 'time-delay' mode, for the two notes separated by one fifth are not simultaneous, but are separated by the duration of the statement of the subject. This means that in order to perceive the marvellous consonance, the faculties of the subconscious must be employed for all except musical professionals, as the time lag between the two elements of the consonance is too great for any but the untrained ear to detect consciously. This 'hidden harmony' is like a generational echo, or like the genetic descent of families through time. One might say that the most beautiful consonances to the divine ear would be those which are sufficiently subtle and evanescent to be detectable only by a listener capable of transcending the very time interval needed to say something: by this means, time passage is abolished and replaced by a species of eternity. It is like the last sentence of Knut Hamsun's novel *Mysteries*, where the entire meaning of the story is transformed by a final comment, which thus expires in the faint but conclusive breath of a coda which alters the meaning of the whole tale which has gone before.

We all know that the method of a fugue is counterpoint, which is what happens when you play more than one melody together properly. When making a fugue, you state a subject and wait until you finish, before you state that subject again and the resulting melodies then go along together, combining through the process and the laws of counterpoint. In a technical discussion of fugues, which is not what is intended here, distinctions are made between strict fugues and loose fugues, between compressed fugues (known as 'fugettes') and full-length fugues, and so on. None of these technical issues is particularly important to what I wish to convey in discussing the wider significance and universal value and appeal of fugues. Many musicians know the famous story of the professor of music who told his students, when teaching them fugues, to ignore those composed by Bach 'because Bach broke all the rules'. Well, in that case, breaking the rules must be a really good thing, and I certainly do not intend to discuss any rules myself.

However, in saying all of these things I have only suggested a few intimations of something deeper, which requires a bit more careful thought. If we consider the nature of form, we come closer to the essence of the fugue and what it really means. What is form? All philosophers have struggled with this question. Plato took 'form' so seriously that he said that forms existed separately from matter in a world of their own, a kind of parallel universe which he called the 'world of form'; material shapes 'participated' in these ideal forms, or *ideas*, but did so imperfectly, since perfection was reserved for the nonmaterial world. Aristotle, Plato's pupil, was a far more practical man and did not believe in this sort of thing at all. He took a more robust and earthy view of form. He said: 'By form I mean the essence or very nature of the thing.' And he added: 'It is according to form that we know all things.' In other words, he believed that forms were within material things, not floating about in some dreamland outside. He said: 'The form of man always appears in flesh and bones …' The way forms came about was by virtue of what he called The Formal Cause, which was only one of four Causes, the most important of which was The Final Cause, in other words, the reason *why* something existed. Take a hammer, for instance. It has the form of a hammer, which is why it is called a hammer. That is its Formal Cause. But its purpose is to be used to hammer a nail, which is *why* it has been made, and hence is its Final Cause.

Whether we assume with Aristotle that forms are within matter, or take the more spiritual approach and say that they are outside matter but can nevertheless somehow be contacted by radio, as it were, and used remotely to shape matter, really makes no difference in the end. What is most important about forms, and which relates to fugues, is their similarities and their differences. Aristotle's entire edifice of scientific thought was based upon a study of similarities and differences, which he considered fundamental to an understanding of the world around us. And the way in which forms are compared thus becomes the crucial issue. The simplest forms are lines drawn on a surface. If we compare one line to another line, we have a ratio. If one line is twenty inches long and another line is only ten inches long, we have a ratio of twenty to ten, or in other words, *double*: a ratio of two to one. Even though most of us have forgotten the mathematics that we learned at school, that much at

least is remembered by everybody and is perfectly obvious. Now, it is when we begin to think of ratios that we really begin to make some progress. The universal significance of *ratio* was well appreciated by Aristotle, who actually went so far as to say: 'Always that which is higher is to that which is under it as form to matter.' In other words, he conceived of the relationship between form and matter as itself a ratio!

A ratio is really a quantitative comparison between two things of the same species: we might say that four hands are better than two, i.e., that two people can do the work quicker. That is a ratio of two to one, and two in this case is judged to be superior because the work gets done faster. On the other hand, eight hoodlums are worse than four hoodlums, which is again a ratio of two to one, but in this case judged to be worse because the more hoodlums there are, the less comfortable one is! So whether something is better or worse is a separate issue, the ratio is in either case the same, whether it be double-quick in terms of work or double-trouble in terms of louts, the ratio remains two to one. So we can see that ratios merely express quantitative difference.

In order to get to grips with ratios on a more profound level, we really need to step outside the problem and see it within a larger context. And this we can do if we consider the nature of *proportion.* A proportion is essentially a *comparison of ratios.* If we take two ratios which we judge to be positive and compare them, we can see how it works. I might say, for instance, that twice as many hoodlums is as bad as twice as many murderers: there are eight hoodlums instead of four, but there are also sixteen murderers instead of eight. We compare these two ratios, which are both of two to one, and we say they are as bad as one another. That is expressing a proportion, when we compare ratios. Or we could say that two kisses are better than one and four caresses are better than two, and both are *twice as good*, hence a comparison of the two ratios and therefore a proportion.

If we turn to music, we can consider the octave. The frequency of a note is twice as high as a note an octave lower, hence is in a ratio of two to one. A fifth in music has a ratio of three to two in terms of the frequencies of its two notes. Now, it is a remarkable fact that if we take the proportion of these two ratios (three to two and two to one), we discover that they do not fit precisely together, and the proportion leaves a very tiny difference known as the Comma of Pythagoras, named after the ancient Greek philosopher who discussed it. As I have shown in my book *The Crystal Sun*, the Comma of Pythagoras was known to the ancient Egyptians long before the time of Pythagoras, and it occurs in the calendar as well as in music. It is thus one of the most important proportional discrepancies in Nature, and it is in an attempt to reconcile its occurrence on a keyboard that the Chinese invention of a string instrument tuning technique known to us as Equal Temperament (the original invention and nature, and transmission to Europe, of which are discussed in my book *The Genius of China*) was so enthusiastically adopted by J. S. Bach, who wrote *The Well-Tempered Clavier* in order to advocate and demonstrate its use. Hence, this intrusion of *proportion* in such a fundamental way into the domains of music, especially as it was only this system which allowed modulation between keys and thus rendered possible the whole of Romantic music, not to mention the richness of fugues themselves when

they modulate between keys, should act as a warning to us of the importance of proportion in general in the musical field, so that we should also look for it in other forms as well.

As it happens, there is one proportion which is superior to all others in its elegance, simplicity, beauty, and universality as a criterion of artistic perfection, and that is the Golden Section. The name 'Golden Section' first appeared in print as late as 1844 (in a German mathematical journal), and prior to that this proportion was called 'the Divine Proportion' from the time of the Renaissance, when the term was apparently originated by Luca Pacioli, who wrote a book about it which was illustrated by Leonardo da Vinci. Da Vinci used the 'Divine Proportion' as the basis for the design of his painting *The Last Supper,* as well as most of his other works of art. In ancient Greek times, this proportion was known simply as 'the Section', which is how Plato, Euclid, and countless other ancient authors referred to it. The adjectives of 'divine' and 'golden' were therefore added many centuries later through a desire to honour it. But as the name of The Golden Section is now so well established, it is probably best to use that name when discussing it today. The Golden Section may be expressed simply like this, if a line is divided into two portions called *a* and *b*: the ratio of line segment *a* to line segment *b* is the same as the ratio of line segment *b* to '*a* plus *b*' (in other words, to the whole line). In other words, the whole is to the larger part as the larger part is to the smaller part. There is only one point on any line where you can divide the line in this way. It has been found through many experiments that when applied to art, the human eye responds most favourably to this proportion, and it is subconsciously preferred to all others. It is the ultimate criterion of beauty, because it is grounded in the cosmic design and is at the heart of Nature. That is why we feel such a sense of satisfaction when looking at a painting like *The Last Supper*, which uses it as the basis of its construction. The Golden Section appears spontaneously in Nature, and is at the basis of countless natural forms such as shells and flowers. Many books have been written about this. In fact, the Golden Section even appears to specify the shape of the human body!

The seminal two volume work *Le Nombre d'Or* (*The Golden Number*) by the Romanian author, Prince Matila Ghyka (first published 1931 by Gallimard, Paris), is being translated into English, expanded, annotated and extra-illustrated under my general editorship as a project of the Prodan Romanian Cultural Foundation, which has sponsored this recital by Stefano Greco. The book is probably the most significant work on the Golden Section published in the 20th century. It will be published by Inner Traditions International Inc. of the USA in 2007, and will be followed by Ghyka's related work, *Esthétique des Proportions dans la Nature et dans les Arts* (*The Aesthetics of Proportions in Nature and the Arts*), and subsequently by Ghyka's other works. It should be noted that Le Corbusier adopted the Golden Section in his architecture as a result of the influence of his friend Ghyka, and that Paul Valéry was one of Ghyka's most enthusiastic champions. Ghyka's works are still in print in France, but largely unknown in other languages.

Many people have speculated that J. S. Bach used the Golden Section in the construction of all of his fugues. Stefano Greco has now discovered the proof

of this, by finding the extraordinary method actually used by Bach. This shows all the more how crucial proportion, and especially the most beautiful of all proportions, are to music, and especially to fugues. Stefano intends to publish an account of the details of Bach's method. He points out that Chopin used the Golden Section in all of his Études, Monteverdi used it in every one of his compositions, Mozart used it a great deal, as did Scriabin and Liszt. In addition, Beethoven occasionally used it, but Stefano is not certain whether he did this consciously or by instinct. In the meantime, Stefano uses the insights he has gained by these means to create the interpretations which we hear in his recitals and recordings.

What is not widely realized about the Golden Section is that it was at the basis of all the art and sacred architecture of ancient Egypt. Also, when this knowledge passed to the Greeks during the 26th (Saite) Dynasty in the 7th century BC (as recorded by the historian Diodorus Siculus and proved by numerous analyses), Classical Greek sculpture and architecture was born. The Parthenon at Athens, for instance, is entirely based upon the Golden Section and the related design technique known as 'dynamic symmetry', as detailed architectural analyses have proved beyond all doubt. And the Great Pyramid of Egypt contains so many multiple occurrences of the Golden Section in its design that it is as if the architect had run amok on the subject. These matters are discussed at length in my book *The Crystal Sun*, where I also show that the shadow of the Pyramid of Chephren which is cast upon the south face of the Great Pyramid at sunset on the winter solstice forms a Golden Triangle (a unique triangle defined by the Golden Section), the angle of its hypotenuse being identical to that of both the ascending and descending passages within the same structure (known as 'the Golden Angle').

In using the Golden Section as the basis of their art and sacred architecture, the ancient Egyptians believed that they were showing honour to the cosmos, according to the principles of what they called Maat ('cosmic order'). It was the duty of the Pharaoh to uphold Maat, and Maat must be reflected in all art and sacred architecture. The Egyptians had no words in their language for either 'religion' or 'belief'. The underlying principle of their religious tradition was far more rational than those of later times, and was an observance and honouring of the natural structure of the Universe and its most sacred proportion through the practice of Maat. The ancient Egyptians in fact had the ultimate ecological religion, since they did not really worship the many gods of their pantheon in the sense that we imagine today. It would be more correct to say that they merely honoured and revered them as symbols, in rituals which were meant to enact aspects of cosmic process and creation: it was *the cosmos as an ordered entity* which they actually worshipped, the multiplicity of gods being understood as merely facets of it. (Or at least this was true of the priests, and what the common people did was clearly less sophisticated. For them, the worship of Isis, Osiris, or Amun might be enough.) These mathematical proportions of Maat were observed from the Prehistoric period until the time of Cleopatra, when the Romans took over Egypt and the traditions were finally extinguished, a period of 3,500 years! The use of the proportions at this time was also extinguished in Greece, as the Greek artisans refused to pass over their trade secrets of the Golden Section and 'dynamic symmetry' to the

hated conquerors, which explains why Roman sculpture looks so dead and lifeless compared to Classical Greek sculpture. All the life went out of it, because the sacred design traditions went out of it, and the secrets of proportion were lost, for the Romans never learned of their existence in either art or architecture.

We can now return to the fugue. The first thing I would say in the light of all this is that we can now postulate two new categories of fugue: Golden Fugues, i.e., those such as the ones composed by Bach which are based mathematically upon the Golden Section and which are more aesthetically satisfying, and ordinary fugues, which are not constructed in that way. The difference between these is analogous to the difference between Classical Greek and Roman sculpture: the ones which are most alive and vital are the ones which are based upon that basic proportion which is found in Nature, throughout the cosmos, and by incorporating which in any work of art, whether sculpture, painting, architecture, or music, gives a universal quality to the work which would otherwise be lacking. I look forward to the time when Stefano Greco can publish his detailed mathematical analyses of the Bach fugues, so that a full comprehension of these important discoveries of his, and their method of application by Bach, can become widely known. I am fortunate to have had him show me the details, so that I can assure the reader that his analyses are sound.

Another lesson which we can draw from all of this is the importance of classical form in a general sense, as applied to all the arts. In our times, it is fashionable to abandon form altogether and go for 'free form', which is presumed to be in some mysterious way an expression of the individual's psyche. (How many psyches there are which, when expressed, are considerably less than edifying!) But as we have sadly seen in countless examples, what we often get is merely a mess. It is rare to find a teacher in a British art school today who knows how to draw, and hence they cannot ground their students in this basic and fundamental necessity. Instead, to excuse their ignorance and inability, they scoff at the elements of drawing technique as old-fashioned, meaningless, and a waste of time. They pretend that they are in the finest traditions of the avant garde as it existed in the twentieth century. But they neglect to observe that those painters who were furthest to the forefront of abstraction in the inter-war years had been firmly and soundly grounded in the fundamentals of their craft, as Man Ray describes at length in his autobiography, for instance. If they were to go to the Dada Exhibition which is currently to be seen at the Pompidou Centre in Paris, they would see side by side with the wildest and most 'free form' paintings by Francis Picabia, portrait drawings by him which show a great mastery of drawing technique and have an astonishing power through their purely classical form. In fact, both 'ways' are good, but the point is that you have to have the classical ability before you can safely go beyond it. Picasso is perhaps the most notable of the avant garde painters of his century, and his classical training is well known, and it provided the foundation for his transgressions or transcendence of it. You can't abandon something if you haven't got it in the first place. You can't go beyond a place if you have not yet reached it. But the avant garde of today often cannot draw at all, appear to have no basic skills whatever, and their substitute for this is scoffing and sneering, combined with a systematic persecution and intolerance of anyone who shows even a glimmer of inclination to want to draw a recognizable form. Over the years I heard blow by

blow descriptions of the decline of values in the British art schools from my very dear friend, the late Cecil Collins, who fought a rearguard action heroically for decades, making his living as a teacher while barely able to sell a painting. The other day one of his canvasses went for £55,000, a sum possibly surpassing his total earnings from the sales of his own paintings in his entire lifetime, and he has only been dead a few years. But then we all know that the vultures wait for death, in order to inflate the prices of canvasses, when the artist is safely out of the way and beyond all hope of enjoying the fruits of his labours. It has always been thus, and that at least is not a phenomenon only of our time.

Stefano has told me of a conversation he once had with a leading contemporary composer, who told him that he had never studied Bach, Mozart, Beethoven, or any other classical composer, because his goal was to compose contemporary music! The fantastic idiocy and arrogance of this attitude truly defies comment.

But finally to come back again to the central point of the fugue: the fugue is a classical form, a relatively strict one in fact, and it is in a sense the apotheosis in music of ratio and proportion. The sections and crucial points of a fugue (especially the ones mathematically designed by Bach, but often also through the sound instincts of a composer who is only feeling his way without the aid of mathematics, so that the mathematics comes from his soul like juice from a sweet fruit) are determined in this way, whether the composer knows it or not. A fugue that works is a fugue that for whatever reason follows this path. Counterpoint also has its laws, and they guarantee a startling and satisfying result when properly applied, or occasionally even more so when *intelligently and sparingly broken*. In all of this, the composer must respect Maat. If unaware of the Golden Section, and composing a fugue without its aid, a successful composer of a fugue will nevertheless be walking in the way of Maat by adhering to that underlying sense of classical and cosmic form which inheres in every good fugue. This may be far from today's formless fashions, it may be laughed at by scoffers, it may be ridiculed as an exercise which they make you do at music school, to be abandoned as soon as you have graduated. But nevertheless, it is a worthy and divine form, which lifts up the spirit in a way which pays reverence to the underlying orderly principles of the universe. Mankind may be disordered, but the cosmos is not. We do ourselves no favours by being out of step with the order of Nature. Any ecologist or environmentalist knows that all too well!

All processes in the Universe are cyclical, and *recurrence* is a deep theme underlying all order. The fugue is the only musical form which is wholly based upon *recurrence* as a necessity of its structure and essence. Of course we have recurrent themes in many other kinds of music, and the history of music is amply supplied with magnificent sets of variations. All musicians take the greatest pleasure in thematic recurrences of a conventional kind; this is one of the chief pleasures of music, after all. We say, for instance: 'the theme initially suggested in the first movement recurs in the third movement in all its glory.' But the art of the fugue raises this to a higher plane: a fugue *is* recurrence; it does not merely contain it. When the voice recurs and comes back, or when it makes its trembling entrance at the threshold of the piece, and enters, whether on tiptoe or with the roar of a lion, taking part in the riot of polyphony which

gives every good fugue its rich texture and breathtaking combinations, it is like watching all the grand masters of the world play chess at once. For a process has been set in motion which is a replica of the world, a microcosm of natural process, - it is a recurrence of eternal themes, interwoven with all the miraculous connections of real life. We see the unexpected at every turn, we *meet the marvellous* head on, in the finest traditions of Surrealism. Within the confines of the tightest classical form, the unconscious speaks, the unpredictable happens, doors open and close in the strangest corners of the composition. It is the cosmos in miniature. For this is life. We all live by the strictest of formal rules: we eat a certain amount every day to keep alive, we move a certain amount to remain vigorous, we excrete a required amount depending upon what we have eaten, we sleep a minimum number of hours. These are all recurrent phenomena, interacting and interweaving all day and all night, threaded through with our dreams. We are fugues, our lives are fugues. Many of us do not get our lives together, and the counterpoint falls apart, so that disharmonies and discords take the ascendancy and overwhelm the consonances. But even disordered lives, hopeless failures, and despairing souls nevertheless live a fugue until their day of death. And after that – who knows? Perhaps some Harmony of the Spheres calls us? If so, we can be sure it follows the strictest adherence to the classical proportions, has a mastery of the laws of counterpoint, and achieves fugue structures which surpass those which we can even imagine.

All hail the fugue. I say, fugues shall never die, for they compose themselves all around us, as far as our telescopes can see and then beyond, and this process will never end.