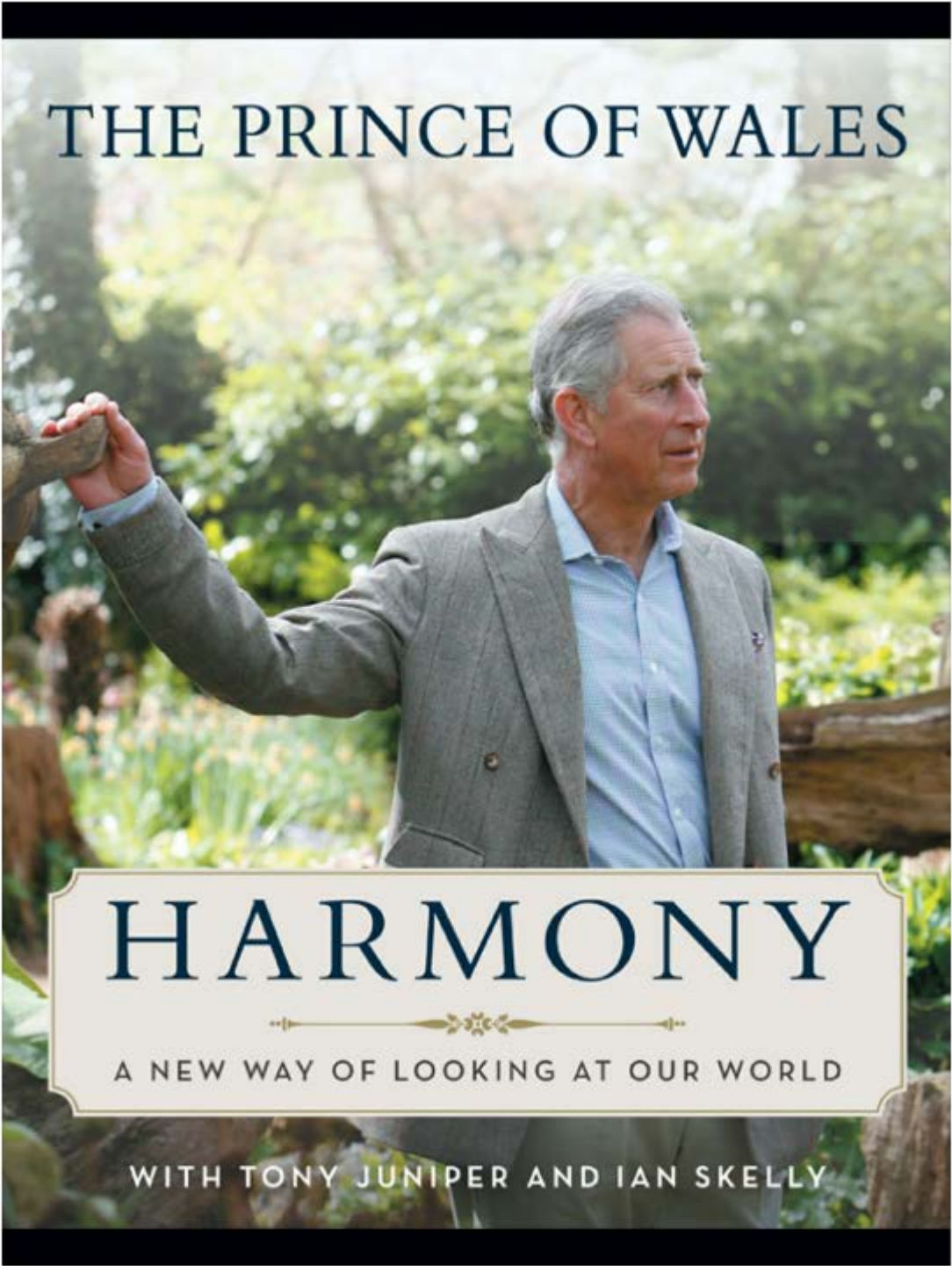


A photograph of the Prince of Wales, Charles III, standing in a lush garden. He is wearing a grey tweed jacket over a light blue shirt. He is holding a small branch or twig in his right hand and looking off to the side. The background is filled with green foliage and flowers.

THE PRINCE OF WALES

HARMONY

A NEW WAY OF LOOKING AT OUR WORLD

WITH TONY JUNIPER AND IAN SKELLY

The Golden Thread 3



The Egyptian goddess Ma'at, tomb of Queen Nefertari 1300-1255 BC. Ancient Egypt harboured a profound wisdom. The Egyptians

considered the realm of myth to be where spiritual forces assume objective shapes to teach humanity universal realities.

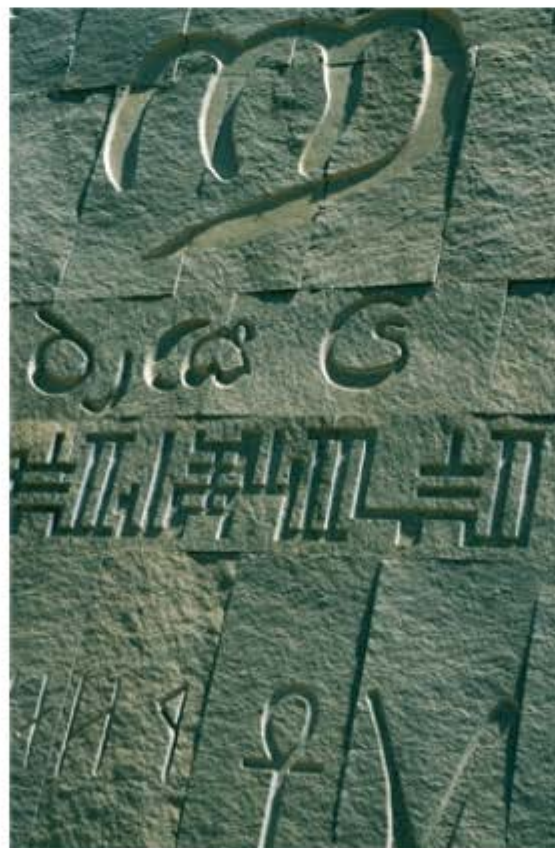


The ninth century Buddhist Monument, Borobudur, Indonesia. The entire monument charts the pilgrim's path from the lower world of desire to the highest one of formlessness and every element of it conforms precisely to the geometry described by Plato and found in many of the world's sacred structures.

artists and scholars, deeply alert to the foundation principles of harmony that have become so neglected in our own age with such devastating results. Eventually the Egyptian civilization sank into the sand, but not its wisdom which, in time, found itself forming the basis of a world view promoted by one of the founding fathers of Western civilization.

We know very little about the life of Pythagoras. He was born on the tiny island of Samos, one of the most fertile of all the Greek islands in the Aegean Sea. He supposedly travelled to Egypt in the sixth century BC and stayed there for twenty-two years, studying with and being initiated by the Egyptian priestly scholars. When he returned to his island home it is said he brought a remarkable understanding of mathematics and a profound philosophical insight, but he did not stay long. Samos was ruled by a tyrant whose intolerance forced Pythagoras to go in search of a better home and so it was that he eventually settled in Croton, the present-day Italian city of Crotone, in Calabria, where he set about creating political reforms and in effect establishing a religious teaching community.

Pythagoras's teaching was based upon the essential kinship of all living things. He is said to have insisted that his followers should be, like him, vegetarians. His disciplined approach to diet and nutrition surely qualify him to be one of the earliest known dieticians because he linked healthy eating with a healthy mind, body and spirit. However, it is the central cosmic importance he gave to number which has always fascinated me – a scheme which is not difficult to understand, but one which states quite clearly that we live in an integrated and harmonious universe.



A detail of the facade of the new library at Alexandria, built to commemorate the great library lost in antiquity.

Pythagoras taught that there is a precise relationship between the arithmetic of number and the geometry of the physical space around us. In his view, chaos is ordered by number and Nature is made up of precise numerical patterns. For Pythagoras, that meant the nature of number went far beyond being simply a means of calculating quantity. He held that the nearest the human mind could get to the Divine Mind was through number and, thereby, the principles of proportion and harmony. In this way we should guard against treating the Pythagorean teachings as merely technical matters. They give insight into both the practical world and the immortality of the soul. Number had a living, qualitative value and was symbolic of the higher realms of reality, those levels of reality that lie beyond the touchable, 'actual' world. It may seem an odd thing to say in this day and age, but Pythagoras taught that number expressed a divine quality. Not only is the natural world constructed according to a precise mathematics, Pythagoras suggested that if we contemplate its patterns deeply we are led into communion with the very source of number itself,

which is unity. This makes the study of number as much a meditative process as a 'scientific' one – which is an aspect of mathematics the modern maths class certainly does not explore.

Before we look specifically at how the grammar of harmony works and then go on to see it in action in so many splendid ways once it was rediscovered 1,000 years after Pythagoras, it is just worth reflecting on what he meant by these patterns leading to a deeper meaning. It will make the symbolism of the geometry we are about to immerse ourselves in all the more comprehensible. Pythagoras considered that the first number represents the ultimate principle of unity. The universal symbol of unity is not the numerical figure 1. It is the sphere or the circle, which is made of a single, unbroken line that loops on itself eternally – 'eternity' in the strictest sense of the word means beginning-less and endless. In Pythagoras's scheme, the second number is what happens once unity becomes more dynamic, once we get 'duality'. This defines the difference between one thing and the other. And that instantly brings about the necessity for the third number which, for Pythagoras, was a most important number. In fact he called it the first 'real' number.

Pythagoras is describing here the traditional view, still alive today in the surviving primary cultures of the world, of how life 'becomes' – how it unfolds from an indivisible unity – its Oneness – into a multiplicity of many, all of which can only be connected by there being a third element of relatedness. In other words, for the one thing to be *known* by another there must be a linking relationship, a ratio or 'joining together'. The Greek word that means 'joining together' is *harmonia*. Just like the ancient Egyptians and their concern for the goddess Ma'at, Pythagoras and much of the ancient Greek world that followed him knew very well that without *harmonia* there is no possibility of relationship between the one and the many and therefore no possibility of unity and wholeness. I am no astrophysicist, but these terms ring with a certain familiarity these days. They could surely all be applied to what has so recently been discovered from quantum physics about the very nature of matter, as I will explore in the next chapter.



The double ouroboros, originally made up of two interlocking serpents, each one consuming its own tail and symbolizing the renewal that creates the unity of creation. This is used as our modern symbol for the endless loop of infinity.

Hearing and seeing the grammar of harmony

Pythagoras would no doubt have been pleased had he been able to see what we can see with our electron microscopes, but he explained his insight best with his study of music. Musicians in his own day had known for a long time that if strings of different lengths are plucked together they make pleasing harmonies, but it was supposedly Pythagoras who worked out why. According to a famous Middle Eastern folk tale, Pythagoras was one day walking past a blacksmith's workshop when he heard the sounds of different hammers pounding the anvil. Mostly they just made a noise, but every so often he noticed they fell into a sequence that produced something special. When he went inside he discovered that the hammers were all of different sizes and when he measured them, all but one had a particular mathematical relationship. If these hammers struck the anvil in sequence, the notes they produced had a harmony to them. This was

because one turned out to be half the weight of the biggest, another was two-thirds the weight and the next was four-fifths the size of the largest hammer. In this way Pythagoras is thought to have defined the octave and how it relates to the third and the perfect fifth. These are the key musical intervals that, for centuries, dictated the entire grammar of Western tonality.

Today music, like everything else, has been subjected to the influence of twentieth-century thinking. Modernism pervades music as much as it does everything else. It is perhaps more than coincidence that just as the twentieth-century ideology of Modernism began to sweep away so much traditional thinking in art and architecture, so the likes of Schoenberg and his Second Viennese School began pioneering the idea in music of abandoning traditional tonal harmony, creating instead an 'atonal' approach to musical structure – that is, a system of notes where there is no controlling primary foundation tone or key. Many composers followed suit and produced some very interesting and moving pieces of music but inevitably their efforts led to more and more extremes of experimentation, particularly in the 1960s and 1970s. Composers like Stockhausen and the Darmstadt School, for

example, produced music that is so unmelodic and so intellectually taxing that it remains completely incomprehensible to the majority of people. Like much of the cutting-edge architecture of the time, it is 'clever'. It tends to appeal to the head and, more often than not, only the cleverest of heads, so it carries with every dissonant turn it takes the implication that we have to be just as clever as its composer to understand it. This is an idea entirely at odds with the root chord of the traditional approach to harmony, which recognizes that we do not 'think' music, we resonate with it and 'feel' it.



A drop of mercury subjected to a stable soundwave. It is forced to form one of the basic geometric shapes known as the Platonic solids. If a different modulation is used, so the drop changes its shape but it always conforms to the same grammar of harmony.

Plato's One and the Many

Two thousand five hundred years ago much of Pythagoras's legacy was inherited by another of the great pillars of Western civilization. His work is of such importance that there are still many scholars today who will tell you all subsequent philosophers have offered little more than a set of footnotes to his great learning. This was Plato, who was born around 428 BC, some seventy years after the death of Pythagoras. Plato became a student of Socrates in Athens and immersed himself in the study of timeless truth, his aim being to seek a clear view of the relationship between a particular thing and its existence in the world as a whole. He held that there was an essential relationship between all of the multiplicity of life that buzzes and whirls around us and the unity of the entire universe that supports it. As he put it, 'the ancients who were superior to us and dwelt nearer to the gods have handed down a tradition that all things are said to consist of a One and a Many and contain in themselves the principles of Limit and Unlimitedness'. This is why he claimed that the highest study of all is the study of the harmonies of music and the ratios

of geometry because they represent the pattern *within* humanity. He taught that through a strict geometric code there is scope for unlimited variety and many profound expressions of beauty, but only so long as they keep within the limits of the unity of the whole. Without the whole in balance, neither a work of art nor life itself can sustain itself in a durable and healthy fashion. In Plato's scheme, the more out of balance a system becomes, the more radical the compensations, until the entire system cannot hold its centre and it falls apart. Geometry was so important to Plato that he is said to have erected a sign over the entrance to his academy in Athens that warned students not to enter unless they knew geometry.

This was the foundation principle behind what we call the 'classical tradition' and it went on to be the bedrock of learning throughout the high points of Western civilization. Take this observation made by Marcus Aurelius, the first-century Roman emperor who became one of the most important of all the so-called Stoic philosophers: 'All things are linked with each other and bound together with a sacred bond. Scarce is there one thing that is foreign to another. They are all arranged together in their proper places and jointly adorn the same

world. There is one orderly, graceful disposition of the whole. There is one God in the whole. There is one substance, one law and one reason common to all intelligent beings and one truth, as there must be one sort of perfection of all beings who are of the same nature and partake of the same rational power.'

This is little more than a pen sketch of the foundations of ancient thought as I have come to understand it, but I wanted to give this little snapshot of how the ancient world saw things from a philosophical point of view because, although it all happened a very long time ago, it is far from 'ancient history'. Fashions may have changed and standards of behaviour and human sensibilities may have become more acute, but the world itself and the way in which life manifests itself in the universe has not changed at all. The ancient deep contemplation of what life reveals itself to be is extraordinarily precise and, in my view, what they considered their experience to be rooted to is as relevant to our experience today as it always has been.

Each culture and tradition characterizes the spiritual dimension of our existence in a slightly different way but, as the Sufis say, although there

are many lamps it is all the same light. What I hope is that what we have explored here gives sufficient context to what follows, which is not just the vivid demonstration of how the grammar of harmony and the geometry of the universe fit together, but how our ancestors took this understanding and expressed it so brilliantly in their greatest works of sacred architecture. I want to show the critical importance of harmony to the health of the human condition and the sustainability of the natural world upon which that human condition depends.

The grammar of harmony

In 1957, in Turkey, the explorer, James Melaart, discovered the remains of one of the oldest cities in the world. Çatalhöyük dates from 7500 BC and among the oldest artefacts he found there was a Neolithic series of murals that had lain undiscovered for nearly 10,000 years. These murals contain the self-same patterns that are still woven today into kilims, the small carpets that are made in the region. It is astonishing to watch these rugs being woven in places like Silifke in Turkey, where people are still semi-nomadic. They carry their little looms as they travel and the patterns they weave are not writ-