

CHAPTER 1



Pythagoras and the search for meaning

Human beings are meaning-seeking creatures. We attach value to people, things and places like a shopkeeper who knows the price of every product in the shop. Significance is central to living. Without it the human animal dies. We cannot tell whether a whale finds the song of its fellows beautiful, or if the bee perceives the exquisite nature of the flower as it buzzes in. We immediately sense both. It's part and parcel of our being in the world. Meaning is basic. Without it, there would be little point in proceeding any further with our guide.

And yet, much in modern life calls that search for meaning into question, even mocks it. Are we just the playthings of selfish genes? Is love no more than a rush of hormones to the head? Are the patterns and order we detect in the cosmos just illusions, a purposefulness that we read into nature that is not objectively there? That they may be a trick of appearance is sometimes referred to as the disenchantment of the world. Nietzsche spotted this loss of value when, at the turn of the twentieth century, he declared the death of God. He did not

literally mean that a divinity had died, for he did not believe that any divinity previously existed. Rather, he said, we have 'unchained this earth from its sun'; we are now 'straying as through an infinite nothing'; life feels as if it has become 'colder'.

Something of the same melancholia was in the air at the birth of ancient philosophy. The sophist Protagoras summed it up when he declared that he could not be sure the gods exist and so man himself must be the 'measure of things', if things were still to be thought valuable. Alternatively the playwright Euripides puts the following prayer into the mouth of Hecuba, in *The Women of Troy*: 'Zeus, whoever thou art, upholding the earth, throned above the earth, whether human intelligence or natural law, mysterious and unknown ...'. Replace 'Zeus' with 'God' and that could be the prayer of a modern agnostic.

Others, such as Plato, objected. Life has meaning because life is indeed meaningful, they insisted. The very fact of our existence in the world is amazing, or at least it is for most people. But can that be shown or proven? For that, Plato and others turned to someone who had lived before them all. This individual and his followers had argued that science itself is a meaning-revealing exercise. In fact, the purer the science, the more potent its insights – which is why they loved maths. The individual was called Pythagoras.

Of all the strange things that are remembered about ancient philosophers, none are weirder than those associated with Pythagoras. He is a man of mystery, indeed a man of pure myth, some scholars have said – but then scholars are in the doubting business. For example, his inner thigh was said to be made of gold. Rivers were heard speaking to him. He reportedly had a photographic memory, and could recall the details of everything that had ever happened to him in this life – and in past lives too, for he believed in the

transmigration of souls. This retention was a gift from the god Hermes.

Talking of retention, he was remarkably anal about food. Red mullet was a particular loathing, along with eggs. He advised that one should only have sex in winter, and never in summer. And yet, if you wanted to follow him, such abstinence would have been the least of your worries. First, potential disciples had to keep silent for five years. Then, they had to listen to his discourses without actually seeing him: like a bat, he only came out at night.

Travelling to the Ionian island of Samos today, the birthplace of Pythagoras, you would not think to doubt his historical existence. The main town is called Pythagorio. Greeting visitors on the jetty is an inspiring, geometric statue of the (presumably) sixth-century BCE philosopher, mathematician and musician. It reflects the theorem to which the name of Pythagoras is given, the sage's hand reaching to the top corner of a triangle, thereby



Figure 3 Pythagoras as a symbol for Arithmetic, from Palazzo Ducale in Venice (Photo: Giovanni Dall'Orto)

completing the three sides. On the coppery base are quotations celebrating the harmony of the universe, also known as the music of the spheres.

Once one of the wealthiest islands in the Aegean Sea, and close to the Asia Minor mainland that is modern day Turkey, the story goes that the youthful Pythagoras travelled around the Mediterranean – ‘journeying amongst the Chaldeans and Magi,’ as Diogenes Laertius puts it – and found his way to Egypt, land of the sun god Ra. Here he discovered a mix of mysticism and geometry, as supremely symbolised in the Great Pyramids of Giza. It was to fascinate him for the rest of his life. He came to believe that orbs and circles are the most beautiful objects, and that the earth and heavens must be spherical too, not cylindrical or flat as was also proposed at the time. He came to believe that even numbers can be thought of as female, rounded, warm; and that odd numbers are male, angular, anomalous. It sounds mad until you notice that odd numbers are indeed often quite ‘odd’, as in ‘peculiar’. For example, all the prime numbers, bar 2, are odd, and prime numbers – those numbers that are only divisible by themselves and the unity one – are peculiar indeed.

At some point, he returned to Samos, only to flee to Croton in Italy when he discovered that the island had been seized by the tyrant Polycrates during his absence. In Croton, he founded a community that became known for its strict dietary laws, dedication to mathematics and mystical contemplation of the cosmos.

That there was a real Pythagoras, now lost in time, might actually be supported by the very myths that accrued to him. Consider once again the fixation with food. Beans are a constant feature of these fables, prompting the question: why beans? He is said to have objected to them for practical reasons,

namely as a cause of flatulence; for aesthetic reasons, because they look like testicles; for theological reasons, because they are like the gate of Hades – the ancient Greek underworld that Pythagoras was said to have visited; for political reasons, because beans are used in elections and elections lead to oligarchies; and for medical reasons, because they ‘partake most of the breath of life’. What a wonderful euphemism for breaking wind.

Beans were the undoing of Pythagoras too. According to one account of his end, he was in a house meeting with his followers, when one Cylo, a local autocrat whom Pythagoras had slighted, set fire to the building. Pythagoras’ disciples were nothing if not loyal, perhaps as a result of the hurdles they had to leap during their training to be his followers. They formed a protective barrier for their master, badly burning themselves. He escaped. Almost free, he reached a field in which beans were growing. This he refused to cross. As a result, Cylo’s thugs caught up with him, cut his throat and left him to die. Maybe an obsession with pods and seeds, written in blood, is the most reliable fact we have about him.

Whatever the history, it is clear is that the figure of Pythagoras became an object of fascination for many different groups of people. The ancient Romans celebrated him as a philosopher and claimed him as their own, because he had lived on Italian soil. The aesthetic-loving souls of the Renaissance associated him with the personified *Musica* because he supposedly discovered the link between music and mathematical intervals whilst fiddling around on a monochord: if you halve the length of a string, the note, when plucked, rises by the perfect interval of an octave.

The Pythagoreans thought that mathematics was a necessary step towards unpeeling mere appearances, towards seeing the

value of things. In its symmetries and patterns, calculus conveyed deep truths about reality. Numbers are in some way transcendent: one plus one would equal two regardless of whether we existed or not, or even whether the universe existed. Hence, it was said that when Pythagoras discovered his famous theorem, it seemed obvious to find an altar and sacrifice an ox. A window onto the world of the gods had been granted to humanity. He had seen something of the meaning of things.

Plato himself did much to keep alive the Pythagorean idea that mathematics lies at the basis of everything we can know about the universe. In one of his most Pythagorean moments, writing the dialogue *Timaeus*, Plato averred:

The vision of the day and night and of months and circling years has created the art of number. It has given us not only the notion of time, but also the means of studying the nature of the universe, from which has emerged all philosophy in all its ranges.

In Plato's *Republic*, mathematics is described as kindling an organ in the soul that is worth a thousand 'normal eyes' because it is a deeper way of seeing the truth. It clarifies things. The ancient mathematician might be thought of as like a master carpenter: using mathematical tools – a setsquare and angle guide – to forge something of real beauty.

Such arguments have provided an imaginative and long-lasting impetus in science. The astronomer Johannes Kepler referred to Pythagoras as 'grandfather of all Copernicans'. Galileo believed that the entire universe 'is written in the language of mathematics'. Bertrand Russell said that 'Mathematics, rightly viewed, possesses not only truth, but supreme beauty – a beauty cold and austere, like that of sculpture.' We are all Copernicans now. But are we all Pythagoreans

too? Do we still believe that meaning can be founded upon mathematics – even for those of us who realised at school that maths was not their *métier* – and by analogy, extended to other parts of life?

Most contemporary mathematicians, for example, when they prove a theorem, go to the pub to sink a pint, not to the temple to sacrifice an ox. And yet, the Pythagorean vision of mathematics has never quite died. If the sales of books popularising mathematics are anything to go by, then the beauty of mathematics is still compelling. One of the authors of those books, Marcus du Sautoy, the professor for the public understanding of science at Oxford University, said this: ‘I get my spiritual buzz out of the eternity of this [mathematical] world.’ What did he mean? Well, consider this.

It’s a question that most physicists must whisper to themselves from time to time. It was famously posed by a Nobel Prize winning physicist, Eugene Wigner, in 1960, when he wrote an essay entitled ‘The Unreasonable Effectiveness of Mathematics in the Natural Sciences’. He was asking why mathematics works at all, when it comes to describing what happens in the world. It is, when you think about it, quite remarkable that the green leaves on a tree grow like a fractal pattern or that the force of gravity, which holds the planets in their places, falls off in a strict proportion to distance. Add to that the sense shared by most mathematicians that mathematics is not created, it is discovered. Doing maths is like exploring a foreign country, one that spreads out before you to be charted and traversed. Wigner writes: ‘It is ... a miracle that in spite of the baffling complexity of the world, certain regularities in the events could be discovered.’ In his essay, he ponders what this ‘unreasonable effectiveness’ might mean.

The implication is that without understanding why and how

the mathematics works, neo-Pythagoreans might be justified in concluding that qualities like order and beauty – the qualities associated with mathematics – are written through the fabric of the universe. Moreover, if mathematics is discovered, not created, then perhaps to do mathematics is to uncover these things as well.

Such considerations lead some believers to call on mathematics as evidence for the existence of God – or to put it in a more nuanced way, they say that the power of mathematics is exactly the kind of thing you would expect in a universe created by an ordered and beautiful deity. The philosopher Leibniz wrote: ‘When God calculates and thinks things through, the world is made.’ For the theist, the belief is that human beings can apprehend God’s ‘thinking through’ by doing maths. The physicist Michel Heller, who is also a priest, writes in his book, *The Comprehensible Universe*:

In the human brain, the world’s structure has reached its focal point: the structure of the world has acquired the ability to reflect upon itself ... In this conceptual setting, science appears as a collective effort of the Human Mind to reach the Mind of God ... The Mind of Man and the Mind of God are strangely interwoven.

That is the thought of a neo-Pythagorean. It reaches back to the mystic from Samos. However, it is surely a fallacy to take mathematics as proof for the existence of God. For one thing, it is a big leap to go from the metaphysics of mathematics to the God of Abraham, Isaac and Jacob. Mathematics is not personal. And no-one would suggest you worship mathematics, for all that it may inspire awe.

In fact, the Pythagorean suggestion to us is more subtle. There is a power in mathematics that is intimately linked to

qualities that provide human beings with their sense of meaning. And yet, the nature of that power remains something of a mystery. People are perfectly within reason to conclude that it doesn't say much about the existence of God at all. After all, one plus one equals two not because some god says so, but because it does. The mathematician John von Neumann put it this way: 'In mathematics you don't understand things. You just get used to them.' Alternatively, the biologist Richard Dawkins, a compelling advocate of atheism to many, finds no less cause to wonder at the order of things: 'The complexity of living organisms is matched by the elegant efficiency of their apparent design.' He argues that nature itself finds a way of climbing what he has called 'mount improbable', and it is no less remarkable for that.

Exactly what you make of mathematics is probably a question of your personal faith, or lack of it. The puzzle of Wigner's miracle, and Pythagorean geometry is, in a way, the same: at the end of the day, we don't know why there are laws, why mathematics works or why we can discover much about the universe at all. But the point is that we can. Moreover, there is something beautiful about it. The intuition that the world is a meaningful place for we humans is right. The figure of Pythagoras reminds us that science, far from undermining that sensibility, can in fact underpin it.

CHAPTER 2



Sappho and the art of paying attention

If human beings are meaning-seeking creatures, there is another quality, related to it, which is important to highlight early on in our return to the ancients. In a word, it is this: curiosity. For if truly to believe that the world is a meaningless place is to commit yourself to an empty and pointless existence, then to lose all curiosity about life is to put quite a damper on it too. A sad world-weariness would be the result. More positively, to be curious about things is to cultivate a zest for life. The historian G.M. Trevelyan once remarked that intellectual curiosity is 'the life-blood of real civilisation'. Or you might note that questioning is close to questing, and questing, in turn, makes for a sense of purpose.

But curiosity is a virtue that can turn on you. In the proverb it killed the cat, and to overdo it would be to form the habits of a nosey-parker or, worse, inculcate a pervasive sense of restlessness: nothing the perennially dissatisfied person can find will ever satisfy them. So how can it be nurtured so as to ensure it is most productive of life? Where is the right balance? Sappho is our guide here. For her, a constructive curiosity is all

about paying attention. It is a careful art requiring humility, patience and intelligence.

She stands out on any list of the wise from antiquity. Her profile rises not just because she was a woman – there were others – but because her work survives in her own words. And they are arresting words. She is the most clearly defined female figure from ancient Greece.

She was a poet, and famous in her own time. Her verse was almost lost during the medieval period, though just enough fragments made it through history for us to have a clear sense of her voice, and so celebrate her once again.

Some say a host of horses, some say an army of infantry,
and some say an army of ships is the most beautiful thing
on the black earth. But I say it is whatever one loves.

She was born on the Ionian island of Lesbos, a place long associated with art and verse. Arion, who invented an ancient Greek form of ecstatic verse, originated from the same large isle. Legend has it that he was rescued from pirates by its dolphins. Terpander, the founder of Greek music, lived there too, a generation before Sappho.

This lyrical history subsequently gained a momentum of its own. Even my guidebook says that Lesbos ‘hangs off the coast of Turkey like a gingko leaf’. It continues:

Its vineyards produce Greece’s best ouzo, its undulating hills support an astonishing 13 million olive trees, while the higher peaks are swathed with chestnuts and pines ... the islanders are easygoing, lyrical and fond of horses and drink, ready to break into song or dance whenever the mood takes them. Music and poetry run deep in Lesbos’ soul, and contribute to its well-known bewitching quality.



Figure 4 *Sappho and Alcaeus* by Lawrence Alma-Tadema. Alcaeus, another lyric poet, described her as ‘violet-haired, holy, sweetly smiling’

Sappho made her substantial contribution to the tradition associated with her birthplace around the turn of the seventh century BCE. This was at the same time as the forerunners of ancient Greek philosophy were beginning to emerge, about a century before Socrates. It might seem odd to associate her with philosophy now, for all that it did not seem strange to the philosophers that followed her. So why did they value her, and what has that to do with curiosity?

Plato himself is said to have called Sappho wise. There is an epigram attributed to him which goes: ‘Some say the Muses are nine: how careless! Look, there’s Sappho too, from Lesbos, the tenth.’ It is the association with the muses that makes for the association with wisdom. They were regarded as the inspirers of the yearning that leads to learning. The word itself echoes with the practice of thought, as in ‘musing’. Similarly, in mythology, the muses were the daughters of Zeus and Mnemosyne, the goddess of memory. It seemed

perfectly natural for Shakespeare to call upon the tenth muse, Sappho, to pour into his verse 'thine own sweet argument'.

There is another dimension to this particular kind of wisdom to draw attention to. She is remembered as a poet of love. As the name Lesbos implies, she is particularly associated with the love of women for women. Whether or not she was a lesbian in the modern sense is a moot point. She could portray, and presumably felt, passion for men too. What was so remarkable to her contemporaries was not the objects of her desire but the way she could conjure it up. They felt that desire in themselves merely from reading her words. She was called a 'wonderful phenomenon': her technical accomplishment was noted; her aesthetic was appreciated and replicated; the power of her words took the breath away.

Eros shook my mind like wind falling on oaks down the mountain.

That is a beautiful image.

She must have struck those around her as so remarkable for another reason too; for the first time they could read about love from the woman's perspective. As a rule, ancient Greeks saw women not as different from men but as less than men. Aristotle had a theory that women were born when, during gestation, there had not been enough heat in the womb. This understanding of biology is objectionable to us, though there is a consolation in it, since it implies that there is no intrinsic gulf between men and women, as if one were from Mars, the other Venus. That noted, the logic of it is that if you want to know about what it is to be human you should turn to the most perfectly formed specimens. Men would eclipse anything that women could contribute, or so it was supposed.

Sappho is one of the first to challenge that assumption, to

question it, not by taking issue with the biology, but by demonstrating otherwise. This is where her curiosity comes in. Imagine what it would have taken. Perhaps she had to be brave, though there are no indications that she was ever at personal risk; it is likely that she was commissioned to write for public festivals and parties, so there is no sense in which she worked underground. But she did have to find a new language for her feeling, a different grammar for her sex. Generating feminine imagery in a poetic world that was dominated by the masculine and military metaphors of Homer was an enormous undertaking. Her literary innovation is the basis for her admirable genius. She changed perspectives and thereby minds.

I would rather see her sexy walk and the shining sparkle
of her face than Lydian chariots or armed infantry.

Set against a culture of pomp and ceremony, there is a tremendous honesty in that verse. Her ability to set down on the page

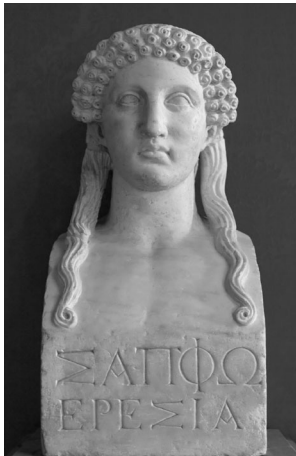


Figure 5 Bust of Sappho, Roman copy of fifth-century BCE original

feelings that were usually suppressed must have delighted her admirers.

Alternatively, in another fragment, she daringly inverts the *casus belli* of the Trojan war. It was not that Helen was stolen by Paris, the traditional reason given for the brutal conflict, but that she went of her own accord:

Easy to make this entirely understood by all. For Helen,
who surpassed mortals by far in beauty, left her noble
husband and went sailing to Troy.

Behind this audacity lay the quality that makes her wise, namely her capacity to pay close attention to things. She could see the world differently, through a woman's eyes, because she was curious about the world around her. That is harder to do than it might first seem. Today, philosophers and biologists alike tell us that our perceptions of the world come to us already shaped; we interpret the world in the way we do because of our evolutionary or cultural inheritance. Objects, bodies, moods do not come to us naked or innocent but as particular kinds of objects, bodies and moods, preloaded with meaning and significance – or loaded down with meaning and significance, the artist might say, when trying to attach different meanings to things. Sappho was able to pay such close attention to objects, bodies and moods that she managed to imagine them in a different way. She broke free from the pre-conceptions of her day, and so found a freedom for herself. 'Poetry is eloquent painting,' thought Simonides, one of Sappho's successors. It is an analysis that could be stripped down even further to say 'art is seeing', seeing as if for the first time. That might be a good definition for the virtue of curiosity we are seeking.

One of the most famous fragments, number 31, demonstrates

how Sappho paid attention, in this case in relation to emotion. Here it is in full:

He seems to be to be equal to the gods, that man, whoever sits opposite you and listens to you speaking so sweetly and close to him, and hears too your tempting laughter. Truly that makes the heart in my breast pound, for when for a moment I look at you, I cannot speak at all; my tongue breaks, and a subtle flame runs immediately beneath my skin. My eyes see nothing at all and a roaring fills my ears. Sweat pours down me, and shaking seizes me all, paler than grass I am, and little short of dead I seem to me. But all must be endured since ...

Notice what happens. Sappho begins conventionally enough, noting the handsome man:

He seems to be to be equal to the gods, that man, whoever sits opposite you and listens to you speaking so sweetly and close to him, and hears too your tempting laughter.

But even in that one sentence, our attention has been turned from him to she who sits opposite, speaking sweetly and laughing alluringly. It is this spectacle that absorbs Sappho's awareness, and she continues:

Truly that makes the heart in my breast pound, for when for a moment I look at you, I cannot speak at all; my tongue breaks, and a subtle flame runs immediately beneath my skin.

There is a lovely paradox here. She cannot speak and yet words capture that feeling so well. Attraction is like that, so commonplace that everyone knows it; so exceptional that when it

happens to you, you must imagine it as unique and astonishing. The woman who finds words – the woman who unlike the stereotype not only keeps thinking whilst she feels, but perceives all the more profoundly – goes on:

My eyes see nothing at all and a roaring fills my ears.
Sweat pours down me, and shaking seizes me all, paler
than grass I am, and little short of dead I seem to me. But
all must be endured since ...

The result is a deeper insight again. The most striking is the reflection that love is like death. That which is most invigorating, filling the ears with its roar, feeling like a flame under the skin, is simultaneously that which is incapacitating. Death is the right association: the postcoital body collapses as if spent; ecstasy literally means stepping out of yourself, which would leave you as if dead. We have come a long way from the first image of the godlike man.

Sappho noticed nature too. For her contemporaries, she must have been a joy to read since she takes them directly to her enchanted island:

[Come] here to me from Crete to this holy temple,
where is your charming grove of apple-trees, and altars
smoking with frankincense, and in it cold water sounds
through apple branches, and the whole land is shadowed
by roses, and from shimmering leaves sleep drops down;
in it a meadow grazed by horses blooms with spring
flowers,
and the winds blow gently.

At one level this fragment can be read as a traditional Greek invocation. It serves to conjure up the god who inhabited the grove with the sound of its words, as well as the smell of the

incense. However, scholars have noted how Sappho introduces a novel element. She conjures up a sense of being in that place yourself. Alfred Biese, in his seminal study, *The Development of the Feeling for Nature in the Middle Ages and Modern Times*, traces it back to Sappho. In her is found 'that most individual of all expressions of feeling', namely subjectivity. With her, 'classic song now shewed the tender subjective feeling for Nature'. Again, that takes penetrating attention, a revolutionary shift in perspective.

From the boughs of trees to the bodies of lovers, Sappho pays attention in her poems. In that, she finds a creative, intellectual liberty. It is curiosity as a habit, with which to muse and grow wise. Simultaneously, she reveals something to us of the effortful art of paying attention. It was to become a key element in the way of life advocated by the philosophers. It might commend itself to us too. And if, like me, you feel too nervous to try writing a poem, there is nothing to stop you developing the habit of looking afresh at the world.