

The qualitative study of number

Kir Roberts, 14/6/23

March 2015: I let down my guard for a moment during a lecture about poster design, and something improbable happened - I paid attention to the bit about the golden proportion. This was improbable because there had been no shortage of exposure to the subject, the internet had summoned some of the images and explanations of phi spirals in the Mona Lisa and the like, all of which I had rejected as 'woo-woo nonsense'. There were others present at the lecture who rained doubts upon the professor, as I would have done if the improbable had not taken place. A coincidental openness in the right way and at the right time bumped me into the rabbit hole of geometry and its related discourses, which I have studied with enthusiasm ever since.

Nearly a quarter of my life later, I have formed some sort of perspective of geometry and the qualitative study of numbers, as both a subject and a social phenomenon. I would like to present one or two in this short essay.

It seems to me that the world of geometry is most conspicuous not among artists, designers, or even

mathematicians, but among entertainers. Geometry is consumed; throughout these eight years, I have noticed no diminishing of the popularity of mathematics as an esoteric concept, and listening to people speak about spiritual matters concerning numbers, ‘Sacred Geometry’, is a perennial source of entertainment in the fringier mainstream. I have been a member of the vanguard of these consumers. I generally am among the vanguard in all esoteric *infotainment* - a typical millennial.

Where there are observations worth mentioning with regards to this habit is in noticing that in consuming this infotainment, one’s time is truly wasted¹. To put it another way, any serious student of geometry as a qualitative investigation² is led away from the object of his study, rather than towards it.

Listening to speech or reading text, *being receptive to words, is at odds with being receptive to form*. A certain amount of words may *prepare one’s receptivity to form*,

¹ I admit this is an exaggeration, but is true for the most part, at least.

² i.e., anything other than a rigidly mathematical investigation into the numerical properties of forms.

and in this sense a certain amount of infotainment is doing good, pedagogical work.

However, the real learning will not begin until the talking ends. To enthusiastically generate hours upon hours of text and speech with the aim of informing budding geometers *defies the purpose of geometers*.

The aim and essence of a practice involving the study of geometry (in this case meaning the qualitative study of numbers), is to enter into an unusual and difficult style of perceiving by exercising the eye or the ear³, and partnering them with an intellectual scrutiny. This partnership, with practice, cultivates insight and understanding of forms as numbers in space. Contrariwise, a knowledge of numbers as having manifest forms, character, and quality, as opposed to being completely abstract signifiers, can be discovered by cultivating this partnership. In the deepest sense, cultivating this type of attitude to geometry can reveal precious glimpses of the structure and relationship between number and space, the *logoi* of the material world.

³ in the case of music

Words and numbers are not the same. This is why there are hundreds of languages, but few forms of mathematics. Language is arbitrary, but number is certain. Words can have various, completely unconnected definitions, but Δ has one⁴. In *speaking* of numbers, we can only enter a new domain of language. We will never be able to truly arrive at the domain of mathematics with anything other than mathematics, and of form with form.

Mathematics itself is usually known only as it is in the schools - as purely quantitative, and numbers themselves as mere signifiers in a quantitative language⁵. However, in the geometric sense, they are not only quantitative, but quite obviously qualitative.

Looking at a geometric object, a pentagon for example, without a mathematical background, all one immediately perceives is a line defining a 5 sided form. *A pentagon is primarily an aesthetic, not mathematical, object.* Its symmetry, its angularity, its proportions, and its

⁴ Though there are many triangles, it will always be definable as a polygon with three sides.

⁵ numbers are simply representations of value, used to signify quantities, and therefore should have no identity of their own which would allow them a qualitative existence.

odd numberedness resonate on the aesthetic level in a way which the regularity of a square does not. A 20 sided regular polygon communicates in a different way again. To me, regular polygons beyond 14 or so sides are nebulous in form, and have a vagueness to their quality of being, neither circle nor polygon.

To go any further with words is to completely miss the point. Scarce are the geometricians who choose to write at length on the topic. The real pedagogue is ever present, namely, the geometry and numbers themselves.

There is never a situation in which one is unable to be steeped in number. Where one can, at best, be steeped in form by words, one can be fully submerged in form and number by abandoning them. Being steeped in words distracts, hinders, and is tangential to being submerged in number.

Geometry, in a sense, is like gesture. Gesture still exists because not everything can be communicated in language. People perceive what is communicated in gestures without the need for describing it. Being side-eyed, or being invited to a hug, or being bowed to, or gasping in shock: if these had verbal alternatives they

would most likely no longer exist. Gesture is a kingdom of its own, of non-verbal communication through the body. Likewise, geometry is a kingdom of its own, of mathematical quantity and aesthetic quality combined.

As quantity, geometry is the purest science, the domain of infallible proofs, free from the absurdities in other areas of mathematics. As quality, geometry is the communication of primal form, the aesthetics of the metaphysical. The deepest of the qualitative particulars which geometry communicates can only be understood through participation, through a practice. There is a near infinite rabbit hole of inter weaving connections between the forms which are only seen when participating in them as an artist or a geometrician. Only a poor geometrician would believe words can suffice to describe these dynamics, in the same way that a poor linguist would believe words can replace gesture.

Let's go one step deeper though. Let's ask, why would someone engage in such a practice? Looking around, we see many applications of geometric understanding, ranging from aesthetic design and architecture, to more or less authentic justifications for spirituality and occult doctrine. The common factor in both is the appropriation

of the infallibility, or the essential and unarguable facts of geometry, in the first instance as a way to *objectify and give structure to the arts*, and in the second, as a way to *render reality and the objective world symbolic*. Often, the two are found in conjunction.

A science of aesthetics has been fruitful for many, most famously the master builders of the Cathedrals and Mosques. Sacred buildings conspicuously stand out as evidence that a prejudice towards mathematically rational proportions has been the norm throughout history. Partly, this is simply convention - the techniques used in church design are easily drawn using only two tools, and easily taught due to their mathematical underpinning. These tools, the compass and square edge, are easily scalable, making their application to architecture even better. A compass and set square can be crafted in minutes. Circles can be inscribed on large scale with a piece of string, straight lines are available everywhere with the plumb.

The esoteric discourse which prevails concerning this architecture usually applies a symbolic overlay to certain motifs in the structure and its embellishments. These discourses may be in the form of an explanation, interpretation, deconstruction, or reverie. The encoded

references which some suggest become so complicated or arcane as to be unbelievable. Whether real or not, they are no concern to the geometrician, interested instead in the aesthetic and qualitative dimensions of numbers and form.

Who can argue with the beauty of the cathedrals, of the great Mosques, or of any ancient monumental architecture? They are the greatest feats of craftsmanship I know of, and it is barely possible to grasp the magnitude of the artistry contained in them. The combination of geometric principle and master craftsmanship is a feast for the eye as well as the soul. Celebrity guru's do a good job of introducing people to these works of beauty.

It is common to, at this point, merge the aesthetic beauty of a well built cathedral, with an interpretation (of fairly confused origin) which is a synthesis of this aesthetic mode with a symbolic one. These interpretations generally come under the banner of 'The Perennial Philosophy', or 'Sacred Geometry' - terms which are slightly too loaded and romantic for me, but do the job. R.A Schwaller de Lubicz made use of his term 'Esoterism', and which I would revive if given a choice.

As a near inevitable consequence when deploying Esoterism is that the architects, artists, and craftpersons responsible for these masterworks are posthumously endowed with a particular education and orientation. Much will be alleged about these people, whether directly or indirectly, in order to justify the symbolic mode attributed to their creations. The past was a golden age of penetrating wisdom and science, an age where pious masters left symbolic breadcrumbs as a magico-religious act of devotion.

Sarcasm aside, the truth most likely is along those lines, and there is not much reason to assume the symbolic mode was not well understood. But to what extent their practices were in homage to a symbolic doctrine is insignificant for a geometrician. The achievements of the master builders, the beauty, craftsmanship, and monumental ambition of their works defy explanation. In this sense, the current obsession with speculative magical and symbolic doctrines surrounding these achievements is a moot point.

It is a symptom of a time where people have become used to celebrity and novelty, one which has made it a habit to pursue trends and recognition, to mine the

internet for opinions, or make a living as a talking head. In truth, this is not only symptomatic of celebrity and novelty, but symptomatic of grandiosity, even envy. In the monumental achievements of Master Builders, the grandiose man only sees the unachievable task of mastery, and therefore his own inferiority. Right Action in this situation would require humility⁶. Since it is not easy to be humbled, master works of art are better used as platforms for the opportunistic, a stage on which to perform the more forgettable art of being a celebrity or guru.

This is not a condemnation or an expression of contempt, since there are many playful and creative applications of celebrity and guruhood. However there must be a signpost for those who may be waylaid by charlatans, of which there is no shortage. Though this pejorative term may seem spiteful, it is the commonly used one.

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⁶ humility in the sense of being humbled.