Chapter IX

NATURAL HARMONY ~
A STRUCTURAL MORPHOLOGY OF CONSCIOUSNESS?

PRÉCIS

There are various structural morphologies. Some of these may usefully be regarded as "natural" morphologies of structure. Characteristically they are discovered and elaborated in accord with their intrinsic quality, rather than idealistically schematized and then imposed upon existence. Examples are the regular and semi-regular polyhedra, the beautiful pattern of interrelationship they exhibit, and the all-space filling tessellations of these polyhedra; and in two-dimensions the regular and semi-regular tessellations of the plane with regular polygons.

In a similar fashion, consciousness exhibits structural patterns, and we can usefully address a "structural morphology of consciousness". Again, such various structural morphologies can be discriminated as to whether they are natural or artificial. Natural structural morphologies of consciousness are similarly characterized by their emergent quality: in a sense they preexist in potential before they are recognized or realized. They characterize Tradition, and typical forms include the mandala, and the morphology of sacred space advanced by Eliade. Again, the yantra exhibits the same natural and archetypal form of consciousness.

What relations obtain between morphologies of structure, and structural morphologies of consciousness? More specifically what are the relationships between natural morphologies of structure and natural structural morphologies of consciousness? Firstly, a dialectic relates the two (i.e. the two stand in dialectic relationship):

particular morphologies of structure influence specific structural morphologies of consciousness, and conversely structural morphologies of consciousness give rise to and find their expression in morphologies of structure. Panofsky draws attention to the important hierarchical organizing principle permeating the intellectual life, religious thought and architecture of the Middle Ages and the Renaissance.

Secondly, the discipline of Sacred Geometry specifically addresses the relation of morphologies of structure and structural morphologies of consciousness. Taken together with its sister disciplines of Sacred Art, Sacred Architecture, and Sacred Aesthetics, we are provided with a means of comprehending the ongoing dialectic between formations of consciousness and structures of the physical world. This is evidenced in such traditional constructions as the Vesica Pisces and the Pythagorean Tetraktys.

Thirdly, both natural morphologies of structure and natural structural morphologies of consciousness can be subsumed as specific manifestations of higher order natural pattern, which subtle pattern I term Natural Harmony. This harmony may be approached through an appreciation of rational fractional harmonics, particularly through contemplation of a construction I term the Natural Length Protractor, and of structures and structural geometries that embody these harmonics in their proportioning.

IN ENCOUNTERING THE SPACE OF EVERYDAY PHYSICAL existence, and structural entities that are engendered within that space, we encounter a variety of structural morphologies. By virtue of their integrity, depth of layers of interrelationship and meaning, sophistication and universality, some of these may properly be regarded as natural morphologies of structure.

Structure is both geometric and physical: geometric, as pure morphology preexists in an ideal sense before it is concretized in physical configuration that resists loading in order to maintain equilibrium, and physical in that it finds its most concrete expression in actual physical structure that exists in time and space.

For example, the cubic lattice is an archetypal morphology of empirical three-dimensional space; but that morphology exists as an ideal geometric configuration prior to consideration of its existence as a stable physical manifestation, with ensuing requirements of structural stability attained through bracing by means of triangulation, rigid joints, or stressed skin construction.

So natural structural morphologies may be identified at both a physical and at a more abstract geometric level. These speak to us of a profound structure of space which enables such configurations to exist, and which thereby reflects an integrity of elegance and beauty.

In the realm of three-dimensional space we may reference such archetypal morphologies as:
- the regular and semi-regular polyhedra;
- their harmony of interrelationship
  (which I address in my *"New Order in Space"*);
- the regular and semi-regular
  all-space filling tessellations;
- their interrelationship (which I address in my
  forthcoming *"A New Order of Space-Filling"*); and
- centralized and decentralized zonahedral clusters.

In two-dimensions we reference the archetypal morphologies of:
- the regular star and its counterform the polar
  zonagon mandala;
- the regular polygons;
- the limited set of regular seed polygons which
  may be constructed with compass and straight-edge
  (i.e. "2"-, 3-, 5-, 17-, 257-, and 65,537-gons) and

which, together with their octaving harmonics
and cross-multiples (of frequency 4, 8, 16, ...;
6, 12, 24, ...; 10, 20, 40, ... etc.;
and 15, 30, 60, ...; 51, 102, 204, ... etc.),
are trigonometrically determinate;
- the more limited subset of these comprising the
  facial polygons of the regular and semi-regular
  polyhedra and the two-dimensional tessellations of
  the plane (i.e. "2", 3, 4, 5, 6, 8, 10, 12);
- and the beautiful Cyclic Harmonies
  which I develop from the Full Star.

We may also reference archetypal morphologies of the three-dimensional monoaxial development of the two-dimensional plane, notably:
- the conic surfaces and their sections;
- the rotational hyperboloid
  developed from the regular star; and
- the polar zonahedral dome strands developed from
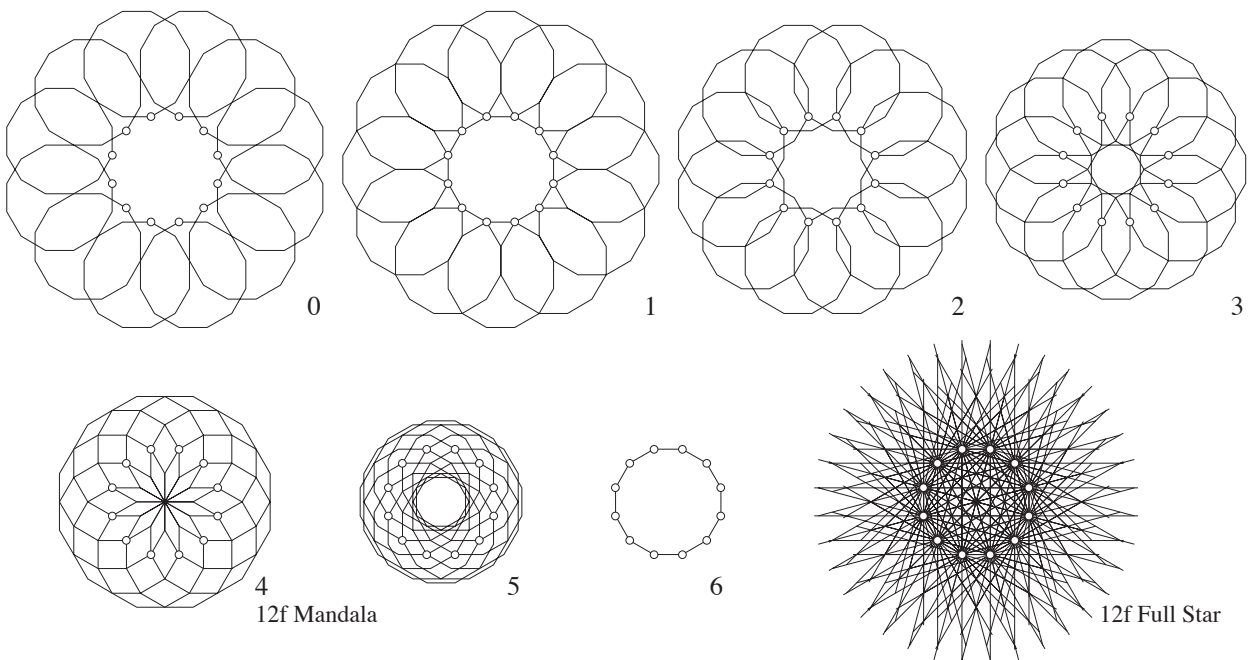 the counterform of the polar zonagon mandala.

Figure 1: Some Cyclic Harmonies of the 12 frequency Full Star.

Each case reveals an intrinsic richness to the structural potential of space as container and embodiment of these pure forms. They are in their various ways eloquent exemplars of that intangible *matrix materia* that preconditions and nurtures their realization in firstly the mind's eye and secondly the material realm.

But consciousness itself also exhibits structural patterns, both static and transformative. Formations of consciousness arise, attain self-recognition and sentience, and exhibit form. It therefore makes sense to address a "structural morphology of consciousness".

Of course in one sense any structural formation of which we become aware may tritely also be considered a structural morphology of consciousness. But nevertheless certain other structures of consciousness by virtue of such qualities as their integrity, eloquence and poetics, may be recognized as *natural* structural morphologies of consciousness. They come as it were from beyond the analytical mind, and are not constructed from below, but revealed from above as mediators of truth. I have in mind those patterns associated with authentic spiritual Tradition, where a sense of the Sacred is paramount.

As exemplars of these, we reference:
- the archetypes and structure of the psyche both personal and collective as advanced by Jung;
- the centralized forms of the *yantra* and of the *mandala* as treated by Zimmer and by Tucci; and
- the morphology of Sacred space advanced by Eliade, with the notions of sacred precinct or *Temenos,* with boundary demarcating Sacred from the profane, Sacred center with associated *axis mundi,* and cardinal quartering. Eliade shows how these archetypal forms characterize Sacred Art and Architecture, as well as Mythologies.

For example, the Pythagorean Tetraktys appears as nothing more than a triangular arrangement of dots or circles, in which the first ten integers can be placed. But as a traditional symbol, it exhibits archetypal spatial symbolism of the center, through which passes the vertical axis, and which delineates bilateral symmetry and a horizontal stratification of cosmic levels. Implicit is the Pythagorean cosmogony of 1 - 2 - 3 - 4 in a process of descent into manifestation from the apex on high, the spatial cosmogony proceeding from point through line, surface and volume. The unity of creation, through the dialectic of opposites engenders a threefold "heavenly" synthesis from which arises the sensible earthly world of fourfold phenomenal complexity; together with this may be taken the converse movement of the return to the source. Implicit also is the idea of the four quarters making the whole, as in the Hindu Four Epochs, in the summation

$$1 + 2 + 3 + 4 = 10.$$

Here 10 is the perfect whole comprising the 1 of creation and the 0 of that which lies beyond, and containing all the various aspects of creation as the single digit integers. The tetraktys also elegantly synthesizes the 3 and the 4, through its triangular arrangement of fourfold frequency; in Jungian terms it integrates in a perfect synthesis the heavenly triad and earthly quaternary realms of the psyche.

Historically, the tetraktys was used to teach the Pythagorean ratios that characterize the musical scale. By relating the elemental numbers, the progression of musical proportion is obtained of fundamental 1:1, perfect fourth 4:3, perfect fifth 3:2 and octave 2:1. The construction is therefore used to teach, through number, musical harmony and spatial proportion. A more explicit tool is provided by what I term the Natural Length Protractor, which beautifully illustrates the harmonic structure of rational number.

These rational fractional measures of unity in diversity facilitate harmonic proportioning, and hence the realization of harmony in composition. They may also be arranged in triangular array, akin to the tetraktys, as segments of polygons, or as sectors of circles. They are then developed into arrays of natural pyramids and cones, with concomitant arrays of natural three-dimensional angle. And they may be used to depict natural variation on the Natural Length Protractor.

Then it may be asked: what relations obtain between morphologies of structure, and structural morphologies of consciousness? More specifically, what are the relationships between *natural* morphologies of structure and *natural* structural morphologies of consciousness?

Naively we would expect consciousness to precede structure. We are used to considering consciousness in the West to be a *tabla rasa* - and perhaps find it offensive to recognize that there may be natural limitation or form to our freedom of imagination. But it may be argued that this attitude stems from a false sense of alienation from the natural order that has become all too characteristic of our "civilization", which is rapidly polluting and destroying itself. Possibly this sense of alienation, and concomitant but illusory sense of power, has outlived its usefulness. We need desperately to regain a sense of harmony with the natural order.

But when we look - perhaps with a child's eyes - at *natural* structure, we find as it were an inherent language of space and form that precedes our enquiry. And that language, or morphology, seems to bear within it a means of conscious realization of harmonious integrity. It is as if we encounter a higher consciousness in these natural structural forms.

To develop the earlier example, I find the tetraktys, together with its extension into other frequencies, provides an adequate vehicle to express the complexity of interrelationship of the regular and semi-regular polyhedra and tilings. (This is developed fully in my forthcoming book on the Tetraktys of Polyhedra). Here the ordering principle integrates both the structural geometry of space, and the structural morphology of consciousness.

But we may go further: we may ask whether the natural harmony we encounter precedes in some fundamental sense consciousness itself? May in some way natural harmony give rise to consciousness on the one hand, and natural structure on the other, as specific manifestations of its transcendent reality?

It is conceivable that the rich integrity of consciousness requires as a matrix or substratum (or more accurately superstratum) an adequate complexity of interrelationship that is only found in integral natural harmony. We would then only attain sentience and self-awareness as lower-order reflections of that perfect integral reality. And our structures would then reveal that higher morphology.

In seeking to address the ineffable, we attempt to reach beyond the scope of our instruments of knowledge. We can but blindly gesture towards that which we do not know, but which perchance knows us...

In doing so the way becomes open to address the primary aim:

a structural harmonics of consciousness,
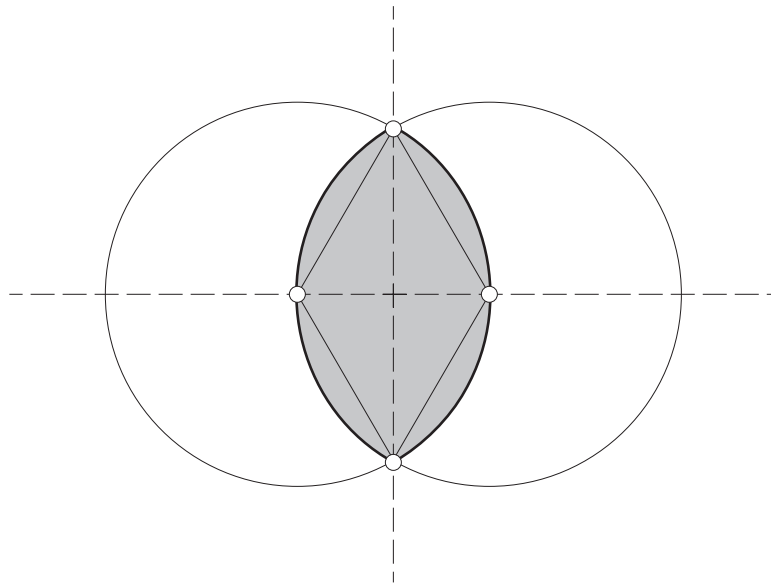*to engender transcendence.*

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*Figure 2: The Vesica Pisces - the fundamental construction of Sacred Geometry,
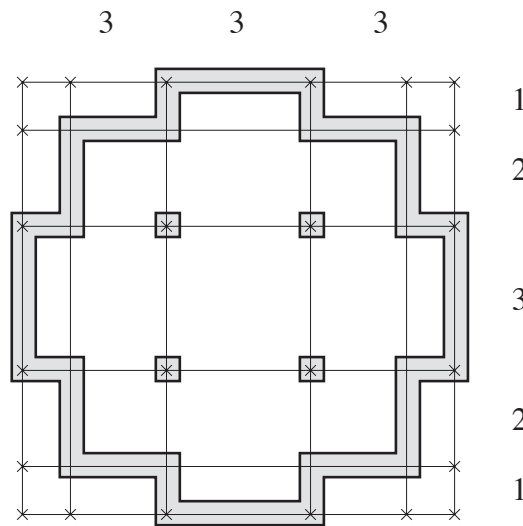which exhibits archetypal structural motifs of consciousness.*

*Figure 3: The Vastu Purusha Mandala, constructed on its yantra, integrates three- and fourfold order.
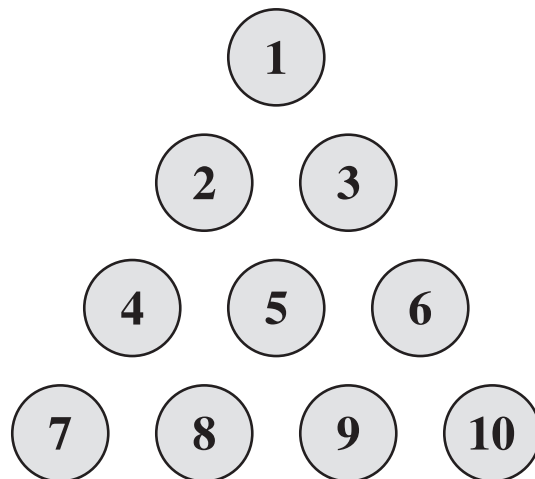Kramrisch shows it to be widely used in traditional Hindu temple design.*
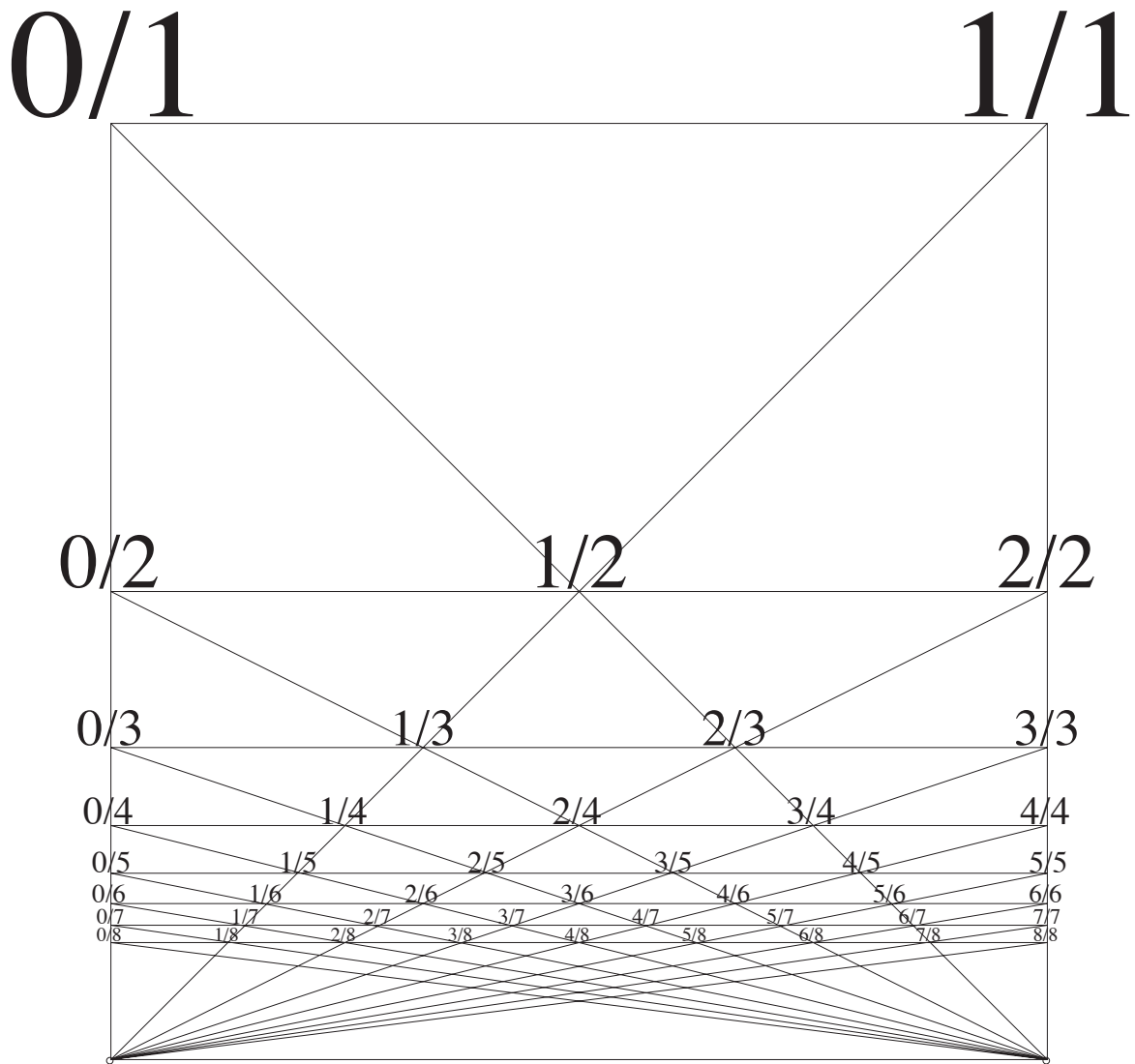

Figure 4: The Pythagorean Tetraktys.

Figure 5: The Natural Length Protractor. It provides a useful tool for comparing rational fraction measure, particularly as regards length, and enables harmonic proportioning and composition. Horizontal length segments are in proportion.
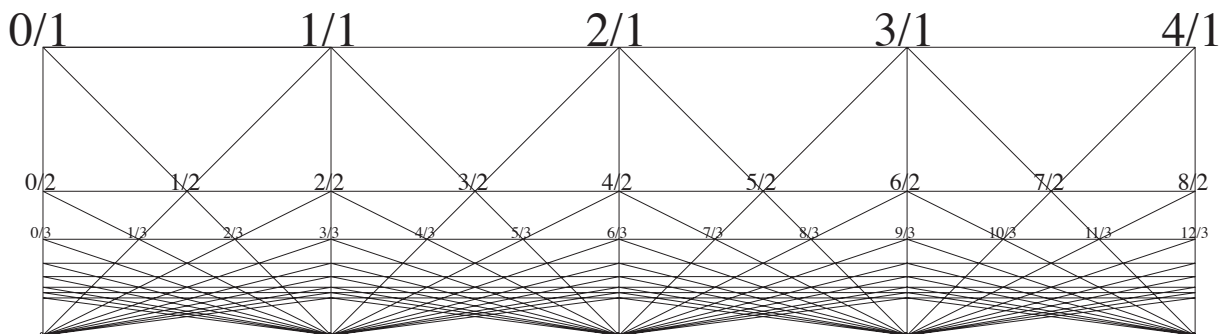
Figure 6: The Extended Natural Length Protractor. The elegant harmonic structure of rational number becomes apparent. Various harmonic sequences of variation lie along straight lines. Natural Angle Protractors may also be constructed.
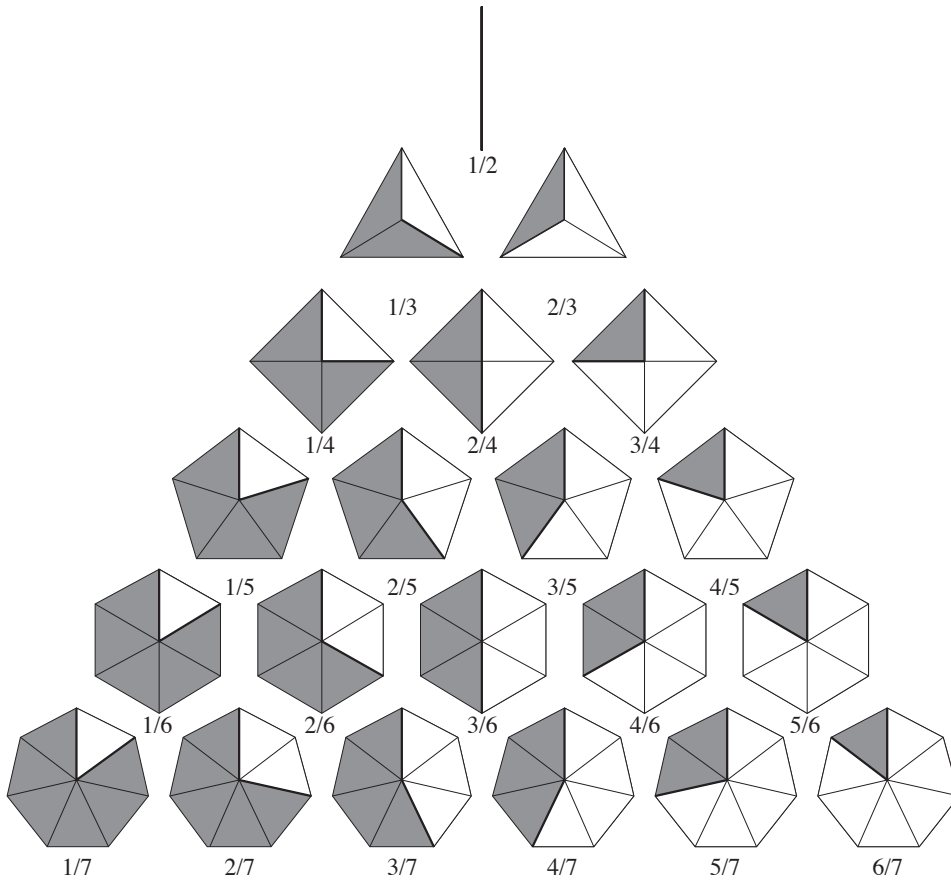
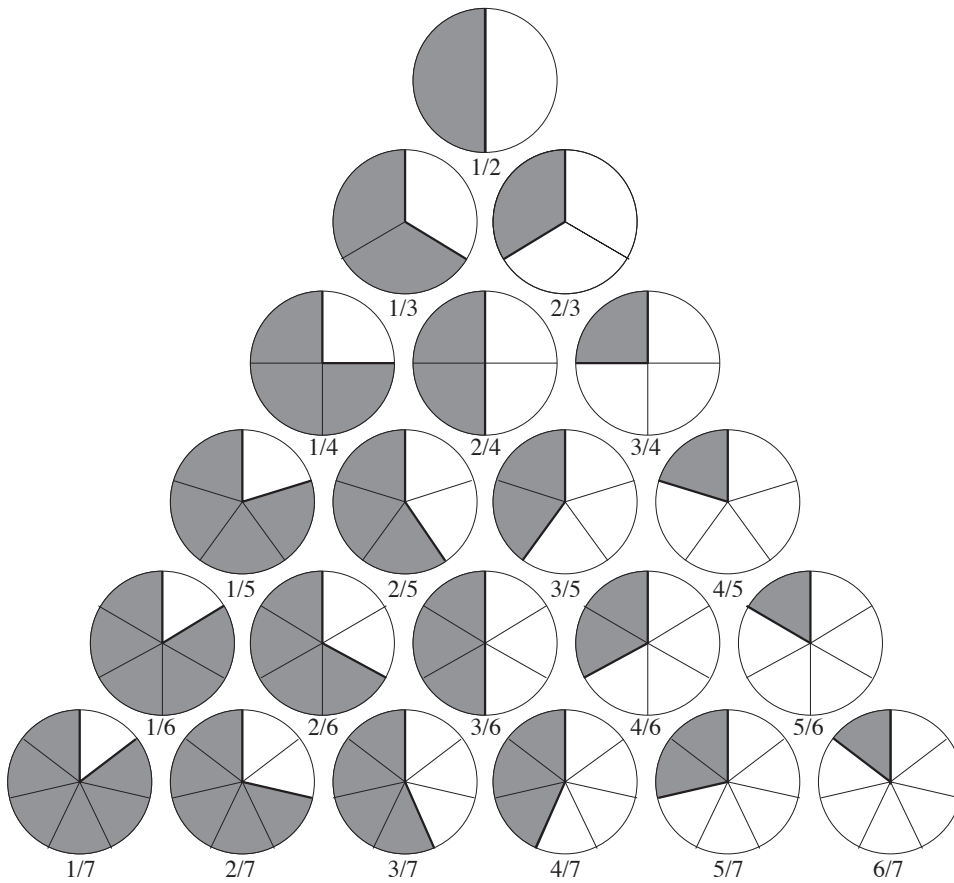*Figure 7: Triadic Array of Polygons and their Natural Angle Segments.*

Figure 8: Triadic Array of Circles and their Natural Angle Sectors.
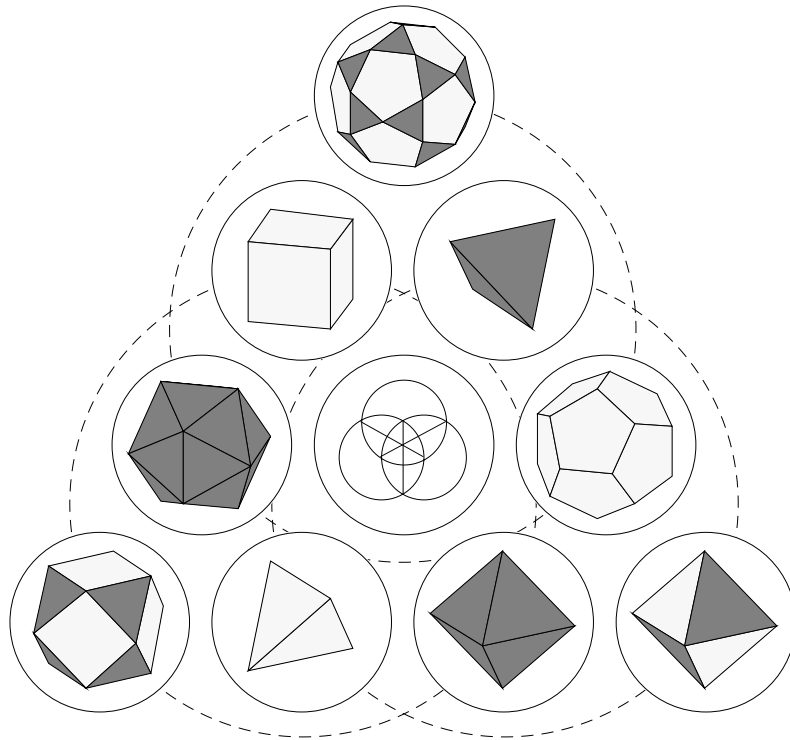
Figure 9: The Tetraktys of Polyhedra. The interwoven threefold order of the fundamental symmetries of space is summarized in this arrangement of the regular and quasi-regular polyhedra.
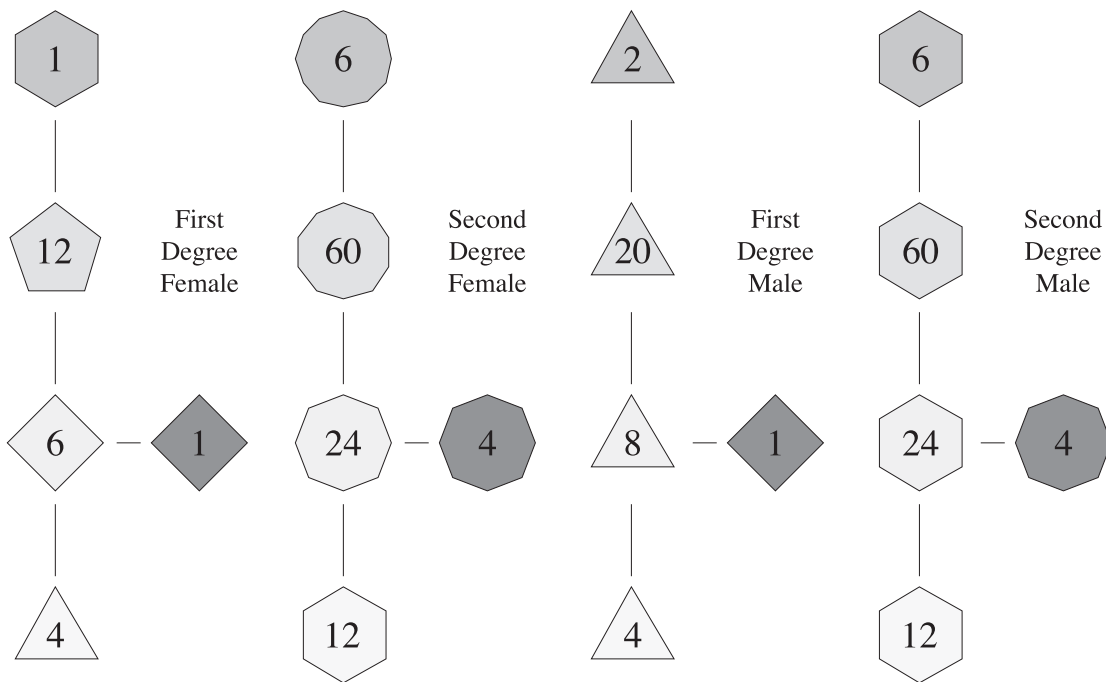

Figure 10: First and Second Degree Female and Male Facial Polygons of the Regular and Semi-regular Polyhedra and Tilings, together with their frequencies, arranged by Order and Class (Classes I-to-V shaded in light-to-dark order).