A modern interpretation of Robert Fludd’s symbolic illustrations

by

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Abstract

This thesis defends the worldview and reasoning of Robert Fludd through a detailed examination of his illustrations. I am continuing the work of Wolfgang Pauli, who wrote on Fludd’s polemic with Johannes Kepler. Diving into this fascinating event in the history of science, my contribution is a more detailed analysis of the mathematical dimension, particularly of arithmetic and the concept of number. I begin by giving the context of Fludd’s systematic philosophy. Following this is Fludd’s macrocosmic thesis of how the divine presence manifests in the external world. From this basis comes Fludd’s microcosmic thesis of how the divine presence manifests in the human being. Both theses have the same formal structure, which I have identified as a theoretical logistic. In contrast, Kepler pursued a practical logistic that led to formulation of his three astronomical laws. Each kind of logistic uses formal structures for different purposes, either for predicting regular patterns in sensible objects or for expressing subjective opinions and beliefs. The latter method has an ambiguous relationship with natural science since it relies on the idea acausal meaning. In the conclusion, I discuss this concept as it was articulated by Carl Jung. Combining this with Pauli’s historical thesis, I argue that the objectivity of scientific knowledge depends on both causal and acausal forms of meaning. While the causal is a conscious form of rational ordering (of light), the acausal is decidedly non-rational, hidden and unconscious (of dark). It is this darker side of the human being that the scientific worldview of the West has left unreconciled. In Fludd’s system, there is the potential for what Pauli called a ‘correction of earlier one-sidedness’, which Jung compared to the Eastern concept of Tao. I aim to demonstrate that unified meaning must include the acausal just as absolute systematicity must include the unsystematic.
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Chapter 1: The Kepler-Fludd Polemic

1. Rediscovering Fludd

In 1952, the quantum physicist Wolfgang Pauli and the psychologist Carl Jung published a book entitled “The Interpretation of Nature and the Psyche”. It was the outcome of their 26 year correspondence that began when Pauli sought psychoanalytic therapy for his distressing dreams. Their relationship developed into a co-operative intellectual enterprise “about fields of expertise that, it could be argued, saw the most extensive developments in the Western intellect in the twentieth century.”¹ Having introduced Jung to the perplexities of quantum mechanics, Pauli discovered the esoteric and occult traditions through Jung’s cultural studies of the collective unconscious. They both agreed that the scientific worldview had become sovereign, leading to a psychological bias. It was just this kind of bias that made quantum physics so puzzling. At some point in history, the baby had been thrown out with the bathwater—something essential had been lost in the process of dispensing with the non-essential. This became a central point of investigation in the Jung-Pauli correspondence; the pursuit of a unified cosmology through the synthesis of physics and psychology. Their book consists of two essays: Jung’s ‘Synchronicity: An Acausal Connecting Principle’, and Pauli’s ‘The Influence of Archetypal Ideas on the Scientific Theories of Kepler’. Whereas Jung developed an historical thesis that verged on a philosophical anthropology, Pauli confined himself to the history of science, “especially to the seventeenth century, when, as the fruit of a great intellectual effort, a truly scientific way of thinking, quite new at the time, grew out of the nourishing soil of a magical-animistic conception of nature.”²

Pauli’s essay has generated renewed interest in a particular intellectual exchange in early-modern Europe. The exchange was between the German astronomer Johannes Kepler and the English physician Robert Fludd; the Kepler-Fludd polemic (spanning 1619-1623). Kepler established

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¹ Meier (2001), xxviii
² Pauli (1952), pg 154
his legacy in the history of science through his discovery of three laws of planetary motion, which would later contribute to Newton's formulation of gravity. Kepler's name appears frequently in scientific literature, both philosophical and historical. Fludd is not as widely recognized but was engaged in disputes with many leading figures of the early 17th century. As for the man himself, "he was an insider, an established member of a conventional society: a man of noble descent, wealthy son of a knight, Oxford-educated, member of the College of Physicians of London and successful physician, with English kings as his patrons, sometime tutor to and friend of high nobility and clergy as well as contemporary physicians, [and] patentee to make steel, from his own invention, in England."3 The relative obscurity of his work comes from his focus on occult philosophy, especially Renaissance Neoplatonism and Hermeticism stemming from the works of Marsilio Ficino and Giovanni Pico. The Hermetic writings were interpreted by the Renaissance mind as "the fount of pristine wisdom whence Plato and the Greeks had derived the best that they knew."4 This was an optimistic thesis based on scriptural exegesis and tradition. Moving from the 15th century to the 17th, the Renaissance ideals slowly lost favour with "those who were turning away from them to discoveries based on empirical, mathematical models instead of ancient religious and metaphysical ones."5 Among these critical thinkers were Kepler, Marin Mersenne and Pierre Gassendi. The rising trend of European scepticism and the push for a scientific method would reach a climax in Descartes, who would publish the Meditations within 20 years of Fludd's magnum opus.

The esoteric and occult (lit. hidden) qualities of Fludd's work raised doubts about whether it could be clearly understood by anyone at all. The problem of interpreting Fludd today lies in the fact that the magical-animistic conception of nature has long since died out. Fludd's system is a grand synthesis of philosophical and religious doctrines that appeared at a time when those very doctrines were in decline. The main cause of this decline was the billowing force of a staunch empiricism that

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3 Huffman (1987), pg 3  
4 Yates (1964), pg 6  
5 Huffman (1987), pg 1
defined itself in opposition to the existing scholasticism. We will see how Fludd attempted to make the content of his system scientific, through detached observation of empirical phenomena. However, his great work is ultimately one of art, even of poetry, and many of his critics were justified in labelling it as such. Hence it is remarkable is that Fludd could meet his opponents on their own terms—a testament to the scientific dimension of his system. Scepticism and dogmatism both have roles in his correspondences, as both are necessary elements for critical thinking. This permits the reader to adopt what Pauli called “the perspective of a more general differentiation that can be traced throughout history, the one type considering the quantitative relations of the parts to be essential, the other the qualitative indivisibility of the whole.”

2. Continuing Pauli’s Vision

The present work aims to extend Pauli’s original essay by analyzing Fludd’s system and relating it to the psychological context of the scientific worldview. In a sense, I want to test Jung’s theory of acausal meaning by simulating the ‘nourishing soil’ of these ancient ideas. Though Jung and Pauli dealt with quantum mechanics explicitly, I will only discuss the basic divide between observer and observed, which holds to some degree at all levels of physical science. Whereas Kepler’s method relied on this distinction, Fludd’s method relied on its dissolution. To break down the barrier between the human observer and the observed phenomenon, Fludd used the human being as a physical symbol. I have tried to explain how this works using relatively neutral language. However (and here is the simulation), the meaning of Fludd’s system is infused with the divine, so as to be inseparable from (the concept of) God. As such, it “can only be comprehended through symbols which both imaginatively express the emotional aspect of the experience and stand in vital relationship to the sum total of contemporary knowledge and the actual process of cognition.”

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6 Pauli (1952), pg 205. As a further example, Pauli mentioned the quarrel between Goethe and Newton on the theory of colour. Drawing on Jung’s psychological types, Pauli cast Fludd and Goethe as feeling/intuitive while Kepler and Newton were thinking/sensation.

7 Pauli (1952), pg 212
Fludd’s system have both “a religious and a scientific function.” The main chapters of the present work describe this bi-modal form of symbolism through a meticulous examination of his illustrations, in series. Although Fludd’s pictorial method of communication did not meet the criteria of natural science, it still challenged its form of judgement. The actual counterfactual message may have been lost to history and is perhaps irrelevant for the methods of modern science. However, I am in agreement with Pauli’s interpretation, namely that “the old historical dispute between Kepler and Fludd may still be considered interesting as a matter of principle even in an age for which both Fludd’s and Kepler’s scientific ideas about world music have lost all significance.”

Although Kepler made a lasting contribution to astronomy, his methodological framework was built on the ancient Pythagorean concept of cosmic harmony. Fludd held a similar view of the planets as being arranged according to the intervals of a musical scale. Of course, modern astronomy has no need for a theory of cosmic harmony. The concept represents a dimension of the magical view of nature, where even the planets were living, animated bodies. Included in the original Pythagorean conception of nature was a mystical philosophy of number. This is quite foreign to our modern understanding of number as a means for denoting a quantity or amount. For the Pythagoreans, numbers were principles that gave the universe its structure, like a “living, qualitative reality which must be approached in an experimental manner.” Numbers were not used as inert signs for measuring magnitudes but were legitimately discovered, like any other natural phenomenon. As abstract principles, numbers were a way for humans to apprehend an invisible and intangible order of reality. Hence the mystical element passed over into a divine quality, which “elevated mathematics to a study worth pursuing above any purely utilitarian ends for which it had previously been employed.”

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8 Pauli (1952), pg 212
9 Pauli (1952), pg 206
10 Guthrie (1987), pg 21
11 Guthrie (1987), pg 21
come to be known as the Quadrivium. Arithmetic was the first branch of ‘number in itself’ and served as the trunk from which the others grew. Geometry is number in space; harmony is number in relation (or in time); astronomy is number in motion (or space and time). Though this fourfold division remained relevant into the 17th century, the mystical philosophy of number was rejected as an archaic and primitive belief that was non-essential for the actual calculations.

In rejecting the Pythagorean conception of number, Kepler was taking the quantitative relations of the parts to be essential, i.e. retaining cosmic harmony without number mysticism. By contrast, Fludd incorporated the entire Pythagorean cosmology into his own system and defended the view of numbers as principles, waiting to be discovered. He was concerned with the qualitative indivisibility of the whole, i.e. cosmic harmony and number mysticism as a unified theory. Naturally, he disagreed with Kepler over how the four branches of the Quadrivium should be related to one another. In this arena, Kepler is the sceptic who treated arithmetic as nothing more than a means for counting things. Meanwhile, Fludd is the dogmatist who made arithmetic the most meaningful discipline and numbers the most meaningful archetypes. His position is distinctly geocentric; the earth was the densest and therefore lowest body. The sun was at the midpoint, halfway between the earth and the upper limit of the empyrean. The Pythagorean influence is distinctly ambiguous on this point, since adherents of Pythagoras are often credited with recognizing a ‘central fire’ as well as the movement of the earth. This raises the question: what is meant by central? As we will see, in Fludd’s hierarchical universe, the sun is indeed at the center of the hierarchy, as the median. It is at this point of density equilibrium where spirit manifests within creation: the sphere of equality. The heliocentric universe effectively displaced this significant feature of Fludd’s system—as if the sun were at the lowest point!

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12 This proper name has been accredited to Boethius but the formal ordering was implied by earlier Pythagorean writers like Nichomachus of Gerarsa.
13 In the Copernican system, the sun again occupied the place of the Pythagorean Central Fire, but God remained outside, and the sun had neither divine attributes, nor any physical influence on the motions of the planets. In Kepler’s universe, all mystic attributes and physical powers are centralized in the sun, and the First Mover is returned to the focal position where he belongs.” Koestler (1959), pg 263
3. **Two Kinds of Logistic**

The methodological basis of Fludd’s system is what Jacob Klein has identified as *theoretical logistic*. This is the practical art of calculation (logistic) but employed theoretically, as in arithmetic.\(^{14}\) A practical logistic excludes arithmetic as a theoretical science and reduces numbers to a means for calculation. Klein found this idea in Plato’s dialogues, such as the *Philebus* when Socrates asks Protarchus, “Don’t we have to agree, first, that the arithmetic of the many is one thing, and the philosophers’ arithmetic is quite another?”\(^ {15}\) The difference has to do with counting, so that “in the one case we are concerned with multitudes of ‘unequal’ objects—and obviously all objects of sense are such—in the other with multitudes of wholly similar units, namely precisely those which cannot occur in the realm of objects of sense.”\(^ {16}\) Kepler studied the planets, which are ‘unequal’ insofar as they can be distinguished according to their motion and observed separately. The numbers in his calculations were secondary to the laws derived therefrom—“that ‘practical’ knowledge which is satisfied with ‘knowing’ these numbers without understanding what this ‘knowing’ implies”.\(^ {17}\) To investigate the presuppositions of practical calculation requires a ‘scientific’ arithmetic that treats numbers as essential rather than instrumental. The units not only lead to discoveries but are themselves discoverable. This is the principle of Fludd’s ideal, ‘noetic’ operations on abstract units, which “cannot pertain to a special realm of objects in the world of sense, but can only refer to a ‘neutral’ material, namely the homogenous monads.”\(^ {18}\) It was this neglect of practical applications that brought Fludd into conflict with those who utilized mathematics for natural science. So, if traditional astronomy has any representation in Fludd’s system, it cannot be based on observation through sensation, and therefore

\(^{14}\) “We must bear in mind that the Platonic opposition of arithmetic and logistic is, to begin with, not one between two scientific subjects which belong to different levels. Rather it concerns a ‘science’ which we first acquire in our intercourse with objects of daily life and in which we may thereafter advance to special expert knowledge.” Klein, Jacob. *Greek Mathematical Thought and the Origin of Algebra*. (1934), pg 18
\(^{15}\) *Philebus*, 56d4-d5
\(^{16}\) Klein (1934), pg 23
\(^{17}\) Klein (1934), pg 54
\(^{18}\) Klein (1934), pg 23
not on motion (as Kepler stressed in his objections). Instead, Fludd aspired to “a ‘pure’ astronomy that “ascends from the observed processes of the visible heavens to an understanding of the invisible spheres... a science similarly organized but completely freed of sense perception, a science whose ultimate object is the one invisible and inaudible ‘cosmic’ order on which our world of sense is founded.” The cosmic order of planetary bodies is observable but is also symbolic. Its empirical truth is given a new meaning through the manipulation of planetary symbols, either individually or as a set. Such free-ranging symbolism is precisely the cause for concern and is reflected in the main problem with a theoretical logistic: fractions. If the multitudes are wholly similar, as to be identical, what possible criterion can be used to distinguish between them at all? According to Klein, Aristotle solved this problem with recourse to the concept of measurement: “For each number is said to be many because it consists of ones and because each number is measureable by one”. The unit of measurement is what justifies the units of calculation.

Kepler’s criticism is that Fludd’s unit of measurement must be impossibly absolute in order to justify his ‘imaginary’ units of calculation. What is absolute for Kepler is really Fludd’s enriched conception of arithmetic, which takes numbers to be measurable entities in themselves. Fludd’s arithmetic is derived from geometric areas, or ‘identical multitudes’. The areas themselves are not qualitatively distinct but are only defined relatively, through counting. The areas are counted in two ways, as either definite or indefinite. Consequently, there are two kinds of arithmetic in Fludd’s system: material and formal. This bifurcation is mirrored by Kepler’s two kinds of harmonic proportions: sensible and cosmic. The move from arithmetic to harmony can be traced back to

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19 Klein (1934), pg 37-38
20 For example, the Pythagorean tetraktys is taken to be an image of differentiated Unity. But if this is the case, what could possibly distinguish each of the ten points that make up the tetraktys? How can 1 be divided into 10 and still remain 1? Hence the problem with counting identical units, or points, according to the same rules as the counting of cars or planets.
21 Metaphysics X, ch. 6, 1056b23
22 “Nothing now stands in the way of changing the unit of measurement in the course of the calculation and of transforming all the fractional parts of the original unit into ‘whole’ numbers consisting of the new units of measurement. Thus even fractions can now be treated ‘scientifically’.” Klein (1934), pg 112
Kepler’s rejection of the Pythagorean idea of number (arithmos) as a discoverable principle, along with its mystical and divine properties. Instead, Kepler projected these properties onto geometric shapes, as “a kind of mental essence” that is “coeternal with God” and has “embraced a certain pattern of the creation”.23 His archetypal geometry is most famously recognized in the five Platonic solids as the ordering principles of the planetary orbits. But here the geometric figures have replaced the Pythagorean number ‘archetypes’ as discoverable principles. Indeed, geometric archetypes became the principles of universal order, “whether by bare contemplation, whether by the interposition of the senses... whether even without reflection by the mind by an instinct which is concealed and was created with them, or whether God Himself has expressed these proportions in bodies and in motions invariably”.24 Having bypassed ‘true’ arithmetic by reducing numbers to counting tools, Kepler assigned form and matter to harmony. The formal harmonies are created through the division of the circle into consonant arcs, matching the astrological aspects from the planetary orbits. Below this cosmic harmony is material, sublunary harmony created through the division of the monochord. The curved line of the circle and the straight line of the monochord became Kepler’s geometric symbol for the divine and the mundane. A circle is composed of an indefinite number of points while a line has a definite start and end, never returning upon itself. Basing his two kinds of harmony on this geometric analogy, Kepler thought he had successfully demonstrated how the human mind, “by its natural instincts imitates the Creator by showing delight and approval for the same proportions in notes which have pleased God in the adjustment of the celestial motions.”25

Fludd arithmetized where Kepler harmonized. Geometry is certainly the bedrock of their mutual understanding, with both men conceiving of divinity in spatial terms and in geometric symbols. Fludd’s system captured this same indefinite aspect of the divine Creator but through arithmetic instead of harmony. The arithmetic is still based on geometry, in a ‘logic of areas’.

23 Harmonices Mundi (1619), pgs 11, 146
24 Harmonices Mundi (1619), pg 146-147
25 Harmonices Mundi (1619), pg 129
However, Fludd objected that geometry is still *number in space* and that Kepler had not really dispensed with the Pythagorean view of number. At best, Kepler was just ignoring the fact that arithmetic is the ‘mother’ of the other numerical sciences. We cannot forget that Kepler’s cosmology had an original element of number-mysticism. On July 9th 1595, Kepler (the professor) was drawing a figure on the blackboard for his class. The figure was a triangle bounded by two circles, one inside and one outside. Suddenly, Kepler was struck by an epiphany: “The delight that I took in my discovery, I shall never be able to describe in words.” Kepler had conceived of a reason why there were only 6 planets, ‘and not twenty or a hundred’. There are five intervals between the planets, which orbit in (supposedly) circular paths. There are also only 5 regular or Platonic solids, composed of identical faces, which can be inscribed within a sphere or circumscribed around a sphere. Like a divine arrangement, Kepler supposed that the distances between orbits could be explained through the existence of an eternal, invisible geometric plan: 6 planets around 5 solids. Though this turned out to be a false supposition, it served as a continuous source of inspiration for Kepler. The epiphany of 5 Platonic solids and 6 planets became a permanent fixture in Kepler’s mind.

### 4. Coincidence and Meaning

The planets and Platonic solids are only one coincidence in Kepler’s story. Another, more ominous coincidence is that the same figure drawn by Kepler (a triangle fitted between circles) is one of the first illustrations to appear in Fludd’s magnum opus. There is little doubt that Kepler saw this illustration when he encountered Fludd’s work at the Frankfurt book fair in 1617. Even so, this coincidence is the real tragedy of the polemic, considering that it was Kepler who drew ‘first blood’ (in an appendix to *Harmonices Mundi*). When Kepler sought to admonish Fludd for his pretension and secrecy, it is as if Kepler had forgotten about July 9th 1595 when God ‘split open the sky to reveal his very mind’. Thought he may have been unable to describe the feeling in words, he had found another

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26 Quoted in Koestler (1959), pg 249
mind at work on the same mystery. If Kepler had recognized this congruence between himself and Fludd, he hardly allowed it to enter into his correspondence. There are only moments when Kepler acknowledged a certain limitation on his own end, as if Fludd had found something of which Kepler himself ‘had never tasted’. Based on these admissions, it is more likely that the fateful link of the triangular figure was blocked in Kepler’s psyche, for it is here that the acausal meaning would have acquired its strongest force. Fludd’s picture was a systematic image constructed for the purposes of demonstration. But Kepler’s picture was in such proximity to his life-work that it had been masked, for its extreme sensitivity. The Kepler-Fludd polemic is largely a defensive one, started by Kepler for protection and ended by Fludd for posterity. They were certainly pursuing different agendas but by the same means (i.e. mathematics). It is unfortunate that each side had to condemn the other instead of recognizing that the same methods could be fruitfully applied in unexpectedly diverse ways. The latter possibility is what Pauli envisioned as the union of opposite parts of the human psyche; to make them complementary rather than see them as incompatible.
Figure 1: The Trinitarian God enclosing the Created World. Kepler’s figure had only one circle inscribed within the triangle.
Kepler has often been singled out as a watershed figure, “in whom all the contradictions of his age seem to have become incarnate.” In keeping with his own astrological experiments, Jung discussed Kepler’s ‘astrological synchronicity’ as a further example of how acausal meaning has been conceived in the past. Kepler rejected traditional astrology in favour of a more non-deterministic understanding of celestial influences. In his geometric system, the aspects of the stars become influential configurations for the soul; both of humans and of the earth. Jung highlighted this feature: “The seat of astrological synchronicity is not in the planets but in the earth; not in matter, but in the anima telluris.” 

Kepler believed that the earth possessed its own soul and tried to prove it by analogy (e.g. comparing weather systems to physiology). In this way, the planets still exerted a real effect on the sublunary realm without impinging on the free will of humanity. To those who rejected the celestial influences outright, Kepler warned “theologians, physicians, and philosophers… against throwing out the baby with the bath, and thereby maltreating their profession.” The mistake of sacrificing the essential while dispensing with the unnecessary holds not just for Kepler’s astrology but for acausal meaning in general. Jung’s synchronicity can be compared to Kepler’s astrology insofar as both theories emphasize the unexpected formative effects of non-deterministic forces. Kepler provided the following analogy:

In what manner does the countenance of the sky at the moment of a man’s birth determine his character? It acts on the person during his life in the manner of the loops which a peasant ties at random around the pumpkins in his field: they do not cause the pumpkin to grow, but they determine its shape. The same applies to the sky: it does not endow man with his habits, history, happiness, children, riches, or a wife, but it moulds his condition.

I will defend a similar idea in my conclusion, namely the rational significance of acausal meaning. Unlike Kepler’s view, the meaning is not restricted to astrology but is more universally human.

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27 Koestler (1959), pg 219
28 “This astrology is indeed a foolish little daughter… but, dear God, where would her mother, the strictly rational astronomy, be if she did not have her foolish daughter?” Quoted in Rosen (1984), pg 266
29 Pauli (1952), pg 112
30 Quoted in Rosen (from Vickers, 1984), pg 257
31 Quoted in Koestler (1959), pg 247
The rationality of acausal meaning is given a clear expression in Fludd’s images. Like the Pythagorean *arithmos*, acausal meaning becomes a universal principle for all human minds. Interpreting these images has required me to dwell in a world of acausal meaning, where Fortune is wholly known.\(^{32}\) The objections to Fludd’s work were really an attack on the spiritual dialectic that all of his critics were intuitively aware of but unable to prove existed. The impossibility of proof is really the absence of any causal connection, as a matter of evidence. Thus Kepler wanted the Pythagorean cosmic harmony without the number mysticism, since the former admitted of proof through observation while the latter did not. Can it simply be discarded? It can’t, said Fludd, because numbers are not only required for the proof but *are the proof*. This, in turn, cannot be proved but signifies the passing over from one conception of meaning to another. And it is this second, more dogmatic notion of meaning that was intended by Pauli and Jung to correct the bias of the scientific worldview towards the first, sceptical one. In his essay on synchronicity, Jung warned his readers that “the rationalistic attitude of the West is not the only possible one and is not all-embracing, but is in many ways a prejudice and a bias that ought perhaps to be corrected.”\(^ {33}\) In the ancient Chinese philosophers Lao-tzu and Chuang-tzu, Jung found the idea of Tao operating in a similar way to the idea of meaning. Naturally, Tao is described in poetic verses and sagacious aphorisms and was an easy fit for Jung’s theory of meaning. Like Kepler’s criticism of Fludd’s ‘poetry’, the enigmatic definitions of Tao can be sceptically dismissed as obscure and lacking rigour. Nonetheless, this Chinese poetry permitted “the absolute knowledge of the unconscious” through “thinking in terms of the whole”.\(^ {34}\) Fludd’s images simulate this kind of knowing and support Jung’s hypothesis that “Only in astrology, *alchemy*, and the mantic procedures do we find no differences of principle between our attitude and the Chinese.”\(^ {35}\)

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\(^ {32}\) “You think that Fortune has changed towards you. You are wrong. These are ever her ways; this is her very nature… You have discovered the ambiguous looks of this blind deity. To others she is partially veiled; to you she is wholly known.” – lady Philosophy to Boethius, Book II Prose I of the *Consolatio.*

\(^ {33}\) Jung (1952), pg 95

\(^ {34}\) Jung (1952), pg 100

\(^ {35}\) Jung (1952), pg 96 (emphasis added)
Chapter 2: The Context of Fludd’s System

1. A Preface to the System

Fludd’s vision of the universe comes across as exceptional due to its being “systematically all-encompassing, consistent throughout, in concord with many venerated ancient authors, both religious and philosophical, and in its making man’s place in the whole scheme completely clear.” The final point needs emphasis: Fludd’s images offer a theory of humans as divine beings, not only of God’s creation but of His similitude. This means that God can be conceived of in two ways: as a transcendent creator and as an immanent presence. What makes humans unique, according to Fludd, is our ability to recognize the divine, both in ourselves and in the universe. This takes the form of an inference from a particular observation to a generalized principle, or from an immanent idea to a transcendent one. The transcendent idea has a spiritual effect, transforming the otherwise mundane observation into the recognition of a divine presence. In Fludd’s system, divinity is concealed within the natural world that humans experience. The divine nature stems from a transcendent God who cannot be known positively. Denying that God can be known in definite terms is the central principle of apophatic theology; we can only know God in terms of what He is not. Fludd managed to respect the literal transcendence of God while offering a constructive approach to divinity as a natural property. Human beings, firmly rooted in the created universe, can then come to know God through their own observations. Not only does this reveal the divine nature of the external world of observation, but also of the inner world of the observer.

As a physician, Fludd’s observations began with anatomical and physiological studies of the human body. Considered on its own, a human body is merely another physical organism among many others on Earth. But when compared to the hierarchical structure of the universe, it appears that human beings were designed to reflect this hierarchical structure, as a microcosmic mirror of the

36 Huffman (1988), pg 133
macrocosmic order. Fludd encountered this idea in religious and philosophical texts, especially in works of alchemy. He combined the lessons from these traditions with his medical knowledge to produce a coherent system, or what Pauli called “an archaistic-magical description of nature culminating in a mystery of transmutation.” The image in Figure 2 is a unified representation of the main principles of his system, as a ‘mirror of nature’. Of primary concern here are the three linked figures: God (the word), the anima mundi (woman) and the ape (man). Each symbol occupies a specific position on the circular hierarchy, which determines the limits of its activity. Hence man is situated upon the earth, in the sphere of the ‘liberal arts’. Outside this sphere are the other biological classes and natural domains other than the human one. The woman stands in this sphere, not as a human but as the soul of the world or anima mundi. Her torso covers the celestial or planetary sphere and her head breaks into the empyrean, or sphere of angelic intelligences. Above this sphere, written in the cloud, is a four-letter Hebrew word known as the Tetragrammaton. For Fludd, this is the archetype of the divine mind and can be used to demonstrate the emanative properties of the literally transcendent God. For this latter conception of God, Fludd employed the traditional symbol of the Trinity: the triangle. The fact that Fludd uses the Tetragrammaton rather than the triangle in this image is significant. We will explore this idea further in the microcosmic thesis of the divine nature of humans.

37 Pauli (1952), pg. 191
38 This particular image is inserted after the frontispiece, making it a suitable ‘preface’ illustration for the entire system.
Figure 2: A Mirror Image of the Whole of Nature
The gender distinction is another significant feature of this image. The celestial symbolism attached to the woman is reminiscent of Revelation 12: “A great sign appeared in heaven; a woman clothed with the sun, with the moon under her feet and a crown of twelve stars on her head.” Curiously, the woman never reappears in Fludd’s images while man (and his genitals) are featured prominently. Though it may be characteristic of his intellectual age, it also opens the possibility for a gender-bias in the overall system. But if this prefatory image is any indication, woman occupies an even greater position in the universal hierarchy than man does. According to Jung, these figures represent masculine and feminine archetypes, or “a priori ideal forms” distinguished by gender. These archetypes “are discovered inasmuch as one did not know about their unconscious autonomous existence, and invented inasmuch as their presence was inferred from analogous conceptual structures.” The ape-man is chained to the woman as an individual soul is linked to the world-soul. The feminine archetype is therefore an intermediary between the masculine and the divine. The psychological relationship could only be hierarchical, so that man owes to woman what the individual soul owes to the world-soul. This connection will also be explored in further images. The gendered interpretation need only remain in the background as we examine the structural elements in Fludd’s macrocosmic thesis of the divine presence in the external world. However, the emphasis on the lower masculine archetype will resurface in the microcosmic thesis when Fludd begins to dissect the human (male) body according to the hierarchical structure of the universe.

2. Fludd’s Controversies

The influence of esoteric thought in Fludd’s work is unmistakable and became a significant point of contention in his correspondences. In these contentions, it was not Fludd’s theology being disputed but rather his methodological dogmatism concerning the truth of ancient doctrines. The criticism was that Fludd, in a rebellion against 16th and 17th century scepticism, had followed the

\[39\] Jung (1952), pg 59
\[40\] Jung (1952), pg 59
ancients blindly, “without the hazard of hesitation: he does not even give a thought to the truer causes.”

This objection of Kepler’s was reiterated with greater force by Marin Mersenne and again by Pierre Gassendi; a recurring refutation “in which the sceptical attitude is employed to demolish Fludd’s views.” Of course, it is not the case that Fludd was oblivious to the use of scepticism as a critical tool. In fact, he exhibited the same critical attitude towards Aristotelian doctrine that the sceptics held. Out of all the ancient authors mentioned by Fludd, Aristotle receives the harshest treatment. We are told that “Aristotle has soared highest upon the wings of his own conceited imagination” and that his followers treat him “as if he were another Jesus rained down from Heaven to open to mankind the treasures of the true wisdom.”

Gassendi made similar arguments against followers of Aristotle, who “have (he said) become merely frivolous disputers instead of searchers after truth.” Being summoned by Mersenne to help refute Fludd, Gassendi was more gracious, calling Fludd “an honest and well conditioned Gentleman, just as well unto his Adversary as friend, not passing beyond the bounds of Christian modestie, but striking home with his Philosophical arguments, when he seeth his occasion.” In their correspondence, Fludd actually corrected Gassendi’s mistaken view of how blood circulates. When William Harvey proposed his theory of circulation, Gassendi rejected it in favour of Galen’s theory of interventricular pores, which he claimed to have observed himself. Fludd was the first to endorse Harvey’s theory in print, which he saw in accordance with his own system. Walter Pagel has suggested that Fludd’s analogy between the sun and the human heart could have influenced Harvey.

Based on this example, we could say that the empirical dimension of Fludd’s system found its greatest success in medicine. In almost all other cases, Fludd’s attempts at physical demonstration

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41 Harmonices Mundi (1619), pg 505
42 Popkin (2003), pg 78
43 Quoted in Huffman pg 225, 230
44 Quoted in Popkin (2003), pg 92
45 Quoted in Huffman (1988), pg 61
46 Cf. Walter Pagel pg 114
47 On page 337, Pagel writes: “Fludd had published his speculation on the ‘circularity’ of the blood at the critical time, namely in the early twenties, when Harvey is likely to have conceived the idea.”
could not transcend the merely symbolic and enter into the properly scientific. One example is the ‘weather-glass’, which was supposed to demonstrate the two polar principles of Fludd’s system: light (or heat) and darkness (or cold). The glass instrument, shown in Figure 3, responded to temperature and pressure so that the water inside fell when heated and rose when cooled; “a kind of combined thermometer and barometer, [which] behaves, of course, in a way opposite of what we are used to.”

Imposing a measuring gradient on the glass, Fludd sought to demonstrate a quantitative relationship between the activity of water and air relative to the universal principles of light and darkness. Obviously, the real significance of the weather-glass depended on the conceptual analogy between light and heat and their opposites. But the principles cannot be inferred from the physical forces active in the mechanism, rather, they could only be confirmed once understood in Fludd’s overall system.

Figure 3: Fludd’s Weather Vane

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48 Pauli (1952), pg 201
A similarly backward line of reasoning is found in his defense of wheat, ‘that most worthy of all vegetables’. The putrefaction of wheat apparently discloses the hierarchical distillation of the elements, from the densest (earth) to the lightest (quintessence). Again, the real significance rests not on the physical degeneration of wheat but on what it symbolizes. The symbolic content cannot be demonstrated separately from the physical process itself, which only demonstrates the physical decay of organic matter. Even when the excellency of wheat was extolled in scripture, Fludd’s defense of wheat could only serve as another historical opinion and never as a scientific foundation for his system.

Pauli identified this limitation in Fludd’s thinking as following from his rejection of the quantitative element: “he perforce remained unconscious of its laws and inevitably came into irreconcilable conflict with scientific thinking.”[49] More specifically, Fludd’s attempts at empirical or ‘ocular’ demonstrations failed due to their preconceived symbolic character. Fludd was only seeking confirmation of his own system in these natural experiments. Furthermore, any relation between theory and observation that contradicted his system had to be dismissed, including heliocentrism. The geocentric model of the universe was crucial to Fludd’s structure and precluded any competing models, such as Kepler’s. Since the earth is the densest element, it must occupy the lowest point, i.e. below everything else. The rigidity of this hierarchical reasoning almost certainly derived from Fludd’s strict adherence to ancient doctrines and is likely responsible for the general neglect of his original synthesis. But this only suggests that we should not seek the empirical meaning behind Fludd’s system and instead search for the reason why he attached symbolic meaning to these mundane observations. As mentioned earlier, Fludd’s system, specifically in the macrocosmic thesis, concerns the inference of transcendence from immanence; the spiritual from the profane. Therefore, it is not surprising that his physical demonstrations are already imbued with the principles of divine nature, as expressed in his motto: ‘Deus est omne quod est’.

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[49] Pauli (1952), pg 205
The authors that receive the greatest reverence in Fludd’s work include Moses, Plato and Hermes Trismegistus. It was this third reference that ignited suspicion in his critics, such as Mersenne: “Since Fludd lists many authors, I refer only to those on whose authority he relies in his books. Among the first rank is the pseudo-Trismegistus, whose *Pimander* and other treatises he seems to think have equal authority and truth with Holy Scripture, and concerning whose value he would, I believe, change his mind, if he read the first *Exercitatione* of the *De rebus sacra*."

The text mentioned by Mersenne is by Isaac Casaubon, who effectively proved the Hermetic texts to be of post-Christian origin. Written in 1614, three years before Fludd’s magnum opus, Casaubon “shattered at one blow the build-up of Renaissance Neoplatonism with its basis in the *prisci theologi* of whom Hermes Trismegistus was the chief.” The scriptural authority of revelation and the philosophical authority of Platonism stood on their own terms but the significance of Hermeticism was suffering worse than Aristotelianism. Nevertheless, Fludd was compelled by the Hermetic corpus and made its central premise into an axiom for his own system: ‘as above, so below’. Kepler ridiculed Fludd for this in his *Harmony of the World*: “in accordance with the celebrated axiom of Hermes he [Fludd] makes the higher things similar or analogous to the lower. However, for this analogy to succeed in all cases, the points of comparison on either side often have to be dragged in by the short hairs.”

More generally, Fludd’s could not rely on the Hermetic axiom and still claim any degree of truth for his theory. According to his critics, far from being a proper philosopher or mathematician, Fludd was at best a poet or a musician. At worst, (for Mersenne) he was an “evill Magitian, a Hereticke-Magitian, or a teacher, or divulger, of foule and horrible Magicke.” The classification of poet may be justified but it still does not explain why Fludd’s ‘magical poetry’ somehow “touched a highly sensitive nerve in many of the great intellects of the seventeenth century.”

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50 Quoted in Hine (from Vickers, 1984), pg 171
51 Yates (1964), pg 398
52 Harmonices Mundi (1619), pg 506
53 Huffman (1988), pg 67
54 Westman (from Vickers, 1984), pg 207
3. The Pictorial Method

Though the form of his system is certainly artistic, Fludd attempted to make its contents scientific. Furthermore, where his contemporaries doubted and patronized, he embellished and amplified. In Fludd’s view, the history of human thought contained many possible truths that had been expressed poorly and without rigour. Thus he set himself the task of collecting and simplifying ideas: “it is sufficiently obvious that my opinions are not new, but rather are the most evident explications and most clear demonstrations of the secrets of nature which have been concealed or hidden by the ancient Philosophers under the guise of allegorical riddles and enigmas.”

Fludd was filling the shoes of Giovanni Pico in claiming to have synthesized hidden truths of esoteric thought into an accessible digest of wisdom. But instead of Pico’s 900 Theses, Fludd produced enough illustrations to fill an art gallery. The pictorial method was essential for his mission of clarifying the obscure. Allegorical riddles and enigmas tend to provoke diverse responses from different readers, recruiting the imagination for subjective representation. The possibility for conflicting interpretations is responsible for the obscurity of the ideas, which had to be read in a specific way. In his illustrations, Fludd has provided sensible references for his readers, effectively relieving the imagination of its active role in generating a subjective image. Fludd’s pictures are an attempt to preserve the connection between theory and observation; to make the divine intelligible through sensation. It was crucial that his readers see the hierarchical structure of the universe in addition to grasping it intellectually. Indeed, gazing at the pictures touches our highly sensitive optic nerves.

The privileged status of visual information is often recognized in mathematics, where we would otherwise depend on imagination instead of sensation. But this is also true of any circumstances that cannot be observed directly. A case in point is Fludd’s visual interpretation of Genesis and the original creation of the universe, ex nihilo. Although we can imagine certain moments

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55 Quoted in Huffman (2001), pg 92
56 “Some ‘pictures’ are not really pictures, but rather are windows to Plato’s heaven.” Brown (2008) pg 40.
described in the process of creation, it is much harder (or maybe impossible) to compare these moments at a distance and isolate patterns in each step. By illustrating ‘snapshots’ of creation, Fludd arrived at a Pythagorean, fourfold template of the countable universe. This was how Fludd upheld the Pythagorean oath of the tetraktys.\textsuperscript{57} For Kepler, this imaginative-snapshot technique was an insufficient criterion for truth, as it held no reasonable connection with actual observation. He charged Fludd with mistaking these imaginative pictures for objective, scientific evidence. Consequently, any mathematical reasoning based on these pictures would be hopelessly subjective. Kepler accused Fludd of misappropriating the sciences of the Quadrivium, “from which he conjures up the cosmos privately depicted in his mind”.\textsuperscript{58} But Kepler also had a private, fictional depiction of the cosmos in his own mind—the Platonic solids as an archetypal blueprint of the divine mind. He also drew pictures, now famous in the history of science, where the geometric figures appear as physical enclosures for the planetary orbits. The role of visual representation in theorizing about universal structure is shared between Fludd and Kepler. Again, what Kepler really objected to was the discussion of God’s creation through Pythagorean number speculation, particularly when these numbers had no obvious connection with \textit{motion}, as in astronomy.

It was the (seemingly) circular motion of the planets that established their divine nature in Kepler’s system, as compared to the linear motion of sublunary objects. The curved line or circle functions as the symbol of the transcendent or divine mind relative to the straight line of created or human minds. The same idea was expressed by Nicholas Cusanus, who compared the circle to the divine mind and the straight line to the human mind:

A finite intellect, therefore, cannot by means of comparison reach the absolute truth of things. Being by nature indivisible, truth excludes ‘more’ or ‘less’, so that nothing but truth itself can be the exact measure of truth: for instance, that which is not a circle cannot be the measure of a circle, for the nature of a circle is one and indivisible. In consequence, our intellect, which is not the truth, never grasps the truth with such precision that it could not be comprehended with infinitely greater precision. The relationship of our intellect to the truth is like that of a polygon to a circle; the resemblance to the circle grows with

\textsuperscript{57} \textit{I swear by the discoverer of the Tetraktys, Which is the spring of all our wisdom, The perennial fount and root of Nature. Cf.} Guthrie (1987) pg 28
\textsuperscript{58} Harmonices Mundi (1619), pg 507-508
the multiplication of the angles of the polygon; but apart from its being reduced to identity with the circle, no multiplication, even if it were infinite, of its angles will make the polygon equal to the circle.\textsuperscript{59}

In the \textit{Mysterium Cosmographicum}, Kepler wrote “For this one fact, Nicholas of Cusa and others seem to me divine: that they attached so much importance to the difference between the Straight and the Curved.”\textsuperscript{60} The analogy is fitting because it captures the \textit{indefinite} quality of the divine. Just as a circle is composed of an indefinite number of points, as to be an indiscernible gradient, so too is knowledge of God permanently beyond our grasp as absolute knowing is not possible for finite human minds.\textsuperscript{61} Thus the divine is strictly incommensurable with the mundane and created world, which Kepler likened to the monochord and its audible harmonies. The cosmic harmonies, given by the divisions of the circle and the aspects of the planets, cannot be heard any more than God can be known directly.

\section*{4. Kepler the Adversary}

In the next chapter, we will see how Fludd’s illustrations combine the curved and the straight, bringing them into an apparently commensurable relationship. Fludd’s harmonies are always demonstrated on monochords or straight lines but these are divided by the perimeters of circular regions. Thus it is unsurprising that all of Fludd’s harmonies looked absurd to Kepler: “(just as if he had in absolute truth equal units), [Fludd] counts how many parts belong to the empyrean, how many to the celestial, how many to the elementary.”\textsuperscript{62} Once again, the problem of counting arises for Fludd. It was not clear to Kepler that Fludd was counting two kinds of areas: definite and indefinite. These areas are not directly observed but are a properties of the illustrations used for demonstration. Geometry and arithmetic are linked through Fludd’s images, which Kepler viewed as mere dream-constructs. Hence Fludd’s units appeared to be absolute at the price of objectivity. In truth, Fludd’s

\textsuperscript{59} Book I, ch. III, pg 11
\textsuperscript{60} trans. A.M. Duncan, Abaris Books (1981), pg 92.
\textsuperscript{61} The same idea is expressed in apophatic or negative theology, i.e. that we can only define God in terms of what He is not.
\textsuperscript{62} Harmonices Mundi (1619), pg 507
arithmetic units were performing an entirely different function than Kepler’s counting-signs. This was
the mystical and divine function ascribed to numbers by the Pythagoreans.

Kepler denounced number-mysticism by dividing numbers into two kinds: counting numbers
(*numerī numerantes*) and counted numbers (*numerī numerati*). The same distinction is found in
Aristotle’s *Physics*. For Kepler, counting numbers possess no intrinsic meaning unless they count
*something*, such as the Platonic solids or the celestial orbits. Only the counted numbers can be
understood as having any real effect, such as being the cause for the consonances. It was a ‘harmonic
tyrranny’ of the Pythagoreans to seek such explanations in the properties of abstract numbers. Kepler
was quite adamant that he was not following the ancients on this point—he criticized Ptolemy for
seeking “the basic principles of the harmonies in abstract numbers, along with the ancients.” In his
own rebellion, Kepler declared: “I on the other hand say that there is no force in the numbers as
counting numbers, and in their place establish as the basic principles of the harmonies the counted
numbers, that is, the things themselves which are subject to the numbers.” On this view, arithmetic
could never make a discernible contribution to the actual structure of the universe, as geometry and
harmony could. At best, numbers allowed for more specific expressions of geometric aspects, which
could then be translated into harmonic ratios. In matters of harmony, “nothing can come of
Arithmetic, since whatever fitness numbers have arises from Geometry and the things that are
numbered.” In accordance with his geometric symbolism of the divine, archetypal harmony comes
from the division of the circle while sensible harmony arises from a string or monochord. Arithmetic
remains the same in both cases—an inert tool for the manipulation of geometric magnitudes and
harmonic intervals.

Kepler’s distinction between *numerī numerantes* and *numerī numerati* was arbitrary to Fludd:
“He [Kepler] tries to avoid abstract numbers in his harmony; yet it seems that without using abstract

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63 “Number, we must note, is used in two senses—both of what is counted or the countable and also of
that with which we count.” Physics 219b3-9.
64 Harmonices Mundi (1619), pg 500
65 Quoted in Field (from Vickers, 1984), pg 281
numbers nothing can genuinely be expressed in numbers, for no less abstract are the Mathematical numbers from lines, surfaces and bodies, or roots, square and cubes, than are those found in common Algorithmic Arithmetic. In contrast with his mystical use of arithmetic, Fludd sees Kepler’s ‘vulgar’ arithmetic as an obvious fiction that imposes a false dichotomy onto numbers as such. As a result, Kepler was “so addicted to geometrical proofs that he has forgotten about truly physical and formal Units determined by no dimensions.” Conversely, the meaning of Fludd’s arithmetic is entirely dependent on the logic of geometric areas. The question now arises as to which conception of arithmetic is best suited for relating the proposed geometric symbolism of the divine with the harmonic ratios of music. We have seen that Kepler’s analogy of the curved and the straight leads to a view of arithmetic that dispenses with number-mysticism by drawing a distinction within the concept of number. We will now see how Fludd’s analogy of definite and indefinite areas leads to a view of arithmetic that preserves a unified conception of number and allows for an understanding of harmony as fundamentally synthetic. The harmonic ratios combine the qualitative difference between the definite areas and the indefinite areas, bringing the immanent into a commensurable relation with the transcendent.

In Fludd’s system, light and darkness are universal principles that were present in the original creation of Genesis. The causes of harmony, then, are to be found in the quantitative mixture of these two principles. To show this, Fludd devised a symbol of interpenetrating pyramids, which he described as cones (Figure 4). The cone of light descends towards the earth, which is the source of the dark cone. As they intersect, they create a midpoint where both principles have equal magnitude. This median is compared to the harmonic node in the center of a monochord, which divides the string into two octaves. Fludd called this harmonic median the sphere of equality because light and darkness are present in equal amounts. He claimed to have found the idea in the works of Platonists and Cabalists who had referred to it (respectively) as “the orb or sphere of the soul of the world” and “the

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66 Quoted in Field (from Vickers, 1984), pg 286
67 Quoted in Field (from Vickers, 1984), pg 276
supreme intelligence, called Metatron.”68 The reason for these reverent descriptions is that the sphere of equality acts as the axis of universal symmetry. By symmetry, Fludd understood “that most admirable proportional measure which we ought to love and contemplate not only in man himself but in all other natural things as well.”69 Adapting his geometry, arithmetic and harmony to this rule of symmetry, Fludd thought he could prove the existence of the anima mundi and hence the immanent divine spirit. Thus there is no reason why Fludd would have disagreed with the claim that consonances come from continuous quantities, so that “the causes which set them apart from the discords must also be sought among the family of continuous quantities, not among abstract numbers, that is in discrete quantity”. 70

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68 Quoted in Huffman (2001), pg 244 from Fludd’s Mosaicall Philosophy (1659).
69 Quoted in Westman (from Vickers, 1984), pg 183
70 Harmonices Mundi (1619), pg 139
Figure 4: The Interpenetrating Pyramids
Chapter 3: The Macrocosmic Thesis

1. A Visual Interpretation of Genesis

Starting from nothing, *ex nihilo*, Fludd wanted his readers to see how a transcendent God could have created the universe through an immanent spirit. Like the principle of universal discovery, creation *ex nihilo* is the model for all subsequent acts of creation in the universe. First, there is only the dark principle, as a formless *hyle*. The light principle enters through the activity of a third principle: spirit (the dove). The circular path of the dove associates the divine and the curved. Within the circle of light, matter begins to diversify and distill according to relative density. We see one intermediate stage when the entire created universe is bound by aether, only to give way to the indefinite boundary of fire within the elemental realm. This becomes the sublunary realm of the four classical elements. The principles of darkness and light mix into a gradient, with the innermost region (earth) being the heaviest and darkest. Fludd then counts the elements according to definite areas. This establishes the number-archetype of creation as the fourfold. But the final image also shows how the number series is abstracted from the fourfold circular hierarchy. As a Pythagorean symbol, it shows how number can be conceived of as an ordering principle for natural structure. In this first instance, it creates the material class of numbers derived from the counting of *definite* areas. Fludd then abstracts the fourfold from the material numbers to create formal numbers, which count *indefinite* areas. His harmonic ratios synthesize these two classes of numbers without deviating from the fourfold structure of the circular template. The template can be thought of as the equivalent of *Ariadne’s Thread*, leading Fludd’s readers through his visual labyrinth. Taking the illustrations to be a kind of puzzle, the circular pattern appears in nearly all of the essential pieces, allowing its principles to be applied rigourously in each image. Like an algorithm, it permits the exhaustive application of a geometric ‘logic of areas’, towards a solution.

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71 The prescribed iterations of divine creation led Leibniz to identify Fludd as an occasionalist, who “saves all phenomena by attributing them to God immediately and by miracle.” cf. New Essays Concerning Human Understanding (preface).
Figure 5: Nothingness or Infinite Darkness

Figure 6: FIAT LUX through Spirit

Figure 7: Bounded by Aether

Figure 8: Bounded by Flames

Figure 9: The Four Elements

Figure 10: The Four Definite Regions
To grasp Fludd’s ‘logic of areas’ requires a firm grasp on his two methods of counting areas. Think of a circle: the area inside is defined positively by the circumference while the area outside is defined negatively, as all the area excluded by the circumference. This negative area includes all areas that are not within the circle, i.e. all space. The simple act of constructing a circle divides the entire universe into what is contained by that circle and what is not. In the pictures of Genesis, the construction of the circle is a consequence of distillation. Similarly, a circle on its own is an absolute division of continuous space into physically distinct areas. In a phrase, every circle must be drawn somewhere. Adding another circle creates a total of three distinct areas. But there are two ways to count these areas relative to the circles; there are 2 indefinite areas and 2 definite areas. In the diagrams below, definite areas (D) and indefinite areas (ID) are counted. Notice how the central region between the circles counts as both, since it is indefinite relative to the inner circle but definite relative to the outer. In the right image, we count this region as inside 1 circle and outside 1 circle.

The pure, unmixed regions are inside 2 circles and outside 2 circles. In the numbered diagram, it is clear that the middle region must be numbered relative to the pure ones. Otherwise we might be tempted to sum these numbers and create the series 2-2-2. Each number 1 has a distinct meaning in the intermediary, mixed region. By adding two more circles, Fludd creates two fourfold series based on these two ways of counting. No matter how many circles are added, the pure regions are never eliminated. The absolute distinction between the in-area and the out-area is Fludd’s geometric symbol
of the divine, like Kepler’s curved and straight. What needs to be demonstrated is how these two areas can be brought into a commensurable relationship.

Using arithmetic to capture the indefinite areas is a means for translating geometric proportions into harmonic ones. To relate the in-area and the out-area is to relate the material numbers with the formal numbers. This is where the interpenetrating pyramids enter the picture. Figure 11 is a general schematic of Fludd’s system in arithmetic proportions. By placing the cones on the circular template, Fludd divided the continuous magnitudes into discrete regions, to be counted according to his logic of areas. Each section of each pyramid is assigned a value so that two principles (here called form and matter) can be compared. This comparison takes the form of an arithmetic proportion, from 1 to 4 inclusive. In both pyramids, the number 4 is only compared to the other numbers within its own pyramid. So we find that the outermost, ‘supreme’ region has a material value of 1 and a formal value of 3. But the innermost, nameless region has a material value of 4 but no formal value. By contrast, the out-4 value is drawn outside the circles but inside the pyramid. The dotted line that extends the formal pyramid into the indefinite area is Fludd’s technique for distinguishing between the absolute transcendence of God and the idea of pure form. He described the basis of the formal pyramid as “the immediate act of God, or the infinite and only bright Unity, and it imports the emanation of the creating and informing Spirit, so that his Cone does penetrate to the very centre of the dark Earth or abyss.”

We will revisit this idea in later images.

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72 Quoted in Huffman (2001), pg 248
Figure 11: A Schematic of Arithmetic Proportions using the Fourfold Template
In the center of the middle region lies the sphere of equality, occupied by the celestial sun. At this point, both pyramids have the value of 2. However, the numerical equality is still subject to the conditions of counting; we have in-2 and out-2. Notice how Fludd has constructed his arithmetic proportions in such a way that the sphere of equality is treated as its own area. The formal proportions attach to the outer dotted line while the material proportions attach to the inner dotted line. This particular arrangement creates an overlapping effect that makes the sphere of equality itself a countable region. But something very peculiar arises when we try to apply Fludd’s arithmetic to the geometric area defined by the sphere of equality—it is neither a definite area nor an indefinite area. It is an anomalous region that cannot be classified like the others. The anomaly is made clearer in later images and I have created my own diagram to show it in detail. Indeed, Fludd’s system was built to emphasize this anomaly as the manifestation of spirit in the created world. Structurally, it is the plane of symmetry between light and darkness, just as the central node of a monochord divides a double octave into two equal octaves.

2. Geometric Symbolism and the Sphere of Equality

The first step in Fludd’s solution is to bring the template into a ‘higher resolution’. By applying the fourfold recursively, within itself, the sphere of equality stands out as the anomalous midpoint or harmonic median of the created universe. The recursive application of the template demonstrates the rule of creation in accordance with the fourfold—all subsequent divisions are consistent with the first discrete representation from the original creation. The images below show a cross-sectional arc of the template at ‘low’ and ‘high’ resolution. The left image is a low resolution template with the principles of darkness and light still visible in the pyramids. The sphere of equality is marked in the center of the middle region. The out-4 value now has its own region, at the base of the formal pyramid. This uppermost region is defined by a dotted line, once again indicating the difference between the Trinitarian God and pure form.
Figure 13: High-resolution Template
The theoretical region for out-4 is the only region that does not receive a name when the template is brought into a higher resolution in the second image. It is not really a part of the created universe but separates the absolute unknowability of the transcendent God from the idea of form without matter. The separation is how Fludd respects the transcendence of the literal God, as in negative theology. We have a positive and definite idea of pure form but this could not be the same as God, since it would be absolute knowledge and hence beyond the capacities of our finite, human intellects. The idea of pure form or pure light is still required for Fludd’s system and occupies a definite geometric area. The dotted line shows that the definiteness of this area is merely theoretical.

The same explanation also holds for the right image. Here the template is shown in higher resolution, with darkness and light removed from the pyramids. All of the regions are now named

Figure 14: Demonstration of the anomalous median. Notice how the sphere of equality has the same values as the absolute IN and OUT regions.
according to the layout of Fludd’s universe. Some sections are also numbered: water [1], air [2], fire [3], lesser empyrean [1] middle empyrean [2], greater empyrean [3]. Fludd is counting mixed regions to demonstrate areas of relative purity. This particular arrangement is derived from the formal pyramid or the out-numbers. The values decrease in the direction of decreasing form. What this indicates is a recursive application of the template to its own constituents. So the elemental region, for example, appears as a single region in the left image but as the entire template (in miniature) in the right image. The difference in the right image is that the equivalent of pure form (out-4) is only a relative purity, i.e. the celestial region is pure form relative to the elemental region. However, the celestial region is not pure form relative to empyrean. If we follow this rule of classification, we find that the sun occupies a very strange position that is neither pure form nor pure matter relative to the rest of the universe. We know that the planets above (Saturn, Jupiter, Mars) have ‘more form’ while those below (Venus, Mercury, Moon) have ‘more matter’. The sun would then be purely material relative to the former set and purely formal relative to the latter set. Hence the ambiguity of the sphere of equality when it is understood in this high-resolution format—it is neither matter nor form but equal parts both and therefore neither. Like the triangle, it transcends the very distinction and merely divides the entire universe into a formal section (above) and a material section (below). Here is a structural feature of the universe that somehow transcends the light and dark principles while also being associated with a created object. It is the manifestation of spirit as a coincidence of form and matter. Like the central node on a monochord, the sphere of equality was the key to Fludd’s conception of transcendence relative to immanence. Fludd described the sphere of equality “as the unison like one essence in Divinity does comprehend three Persons, importing the three accords in the Archetypal harmony, so also the Diapason comprehends in it the two other accords besides itself, namely, Diapente, and Diatessaron.”73 The octave, comprising a fourth and a fifth, is Fludd’s response to Kepler’s spherical image of point, line and surface. The sphere of equality became the common measure for both

73 Quoted in Huffman (2001), pg 250.
the formal octave above and the material octave below. In the macrocosm, the celestial sun occupies this position; in the human body, it is the heart. But notice in Figure 11 that the sun is represented twice: once at the sphere of equality and once outside the template, in the indefinite area. This archetypal sun stands in the same relation to the celestial sun as the property of transcendence stands to immanence. Fludd reasoned, “in the world was the body of the visible Sun of this typical world placed, in which the invisible and uncreated Sun of the Archetypal world did put his Tabernacle: and for this cause it is rightly termed of the Platonists, the sphere of the soul.”\textsuperscript{74} Hence the sun becomes a second sense for the Trinity; a possible overlap with Kepler’s spherical symbolism of the transcendent Deity. But in Fludd’s system, this identity between God and the sun allows for the abstraction of the created sun from its position at the sphere of equality. Fludd’s solution is to conceive of the sun as transcendent relative to the sublunary realm. Under these conditions, the sun is indistinguishable from pure form and can be known absolutely. It is a relative absolute; indefinite in relation to the sublunary as God is indefinite relative to the created universe. In all other cases, in accordance with negative theology, the Trinitarian God cannot be known absolutely. It is through analogies with mathematical symbols that we come to apprehend the divine nature of a transcendent creator.

3. Competing Ideas of Divine Harmony

In Kepler’s system, the Trinitarian God is likened to the sphere: “although Centre, Surface and Distance are manifestly Three, yet are they One, so that no one of them could be even imagined to be absent without destroying the whole.”\textsuperscript{75} To destroy the whole is to destroy the idea of a transcendent creator, as a masquerade of absolute knowledge. Kepler’s analogy was based on this principle: “a straight line remains a straight line whether it is truncated or prolonged, but a circle which is truncated does not remain a circle.”\textsuperscript{76} Like Cusa’s analogy of the circle and the polygon, any claim

\textsuperscript{74} Quoted in Huffman (2001), pg 249.
\textsuperscript{75} Quoted in Pauli (1952), pg 169
\textsuperscript{76} Harmonices Mundi (1619), pg 352
to absolute knowledge (i.e. of the curved) can always be brought into a ‘finer resolution’ to expose its linear composition and essential basis in the finite human mind. Kepler was further convinced of his own analogy when he noticed, in 1608, that the harmonic divisions of the circle do not match those of the string.\textsuperscript{77} He reasoned that music “draws some of the basic principles of its sevenfold set from the actual straightness of the string, whereas the circle, in which we mark the aspects, returns on itself, and another circle cannot be made from the remainder of the zodiac as it can from that of a string.”\textsuperscript{78} In this difference, Kepler discovered everything he needed for conceiving of the transcendent relative to the immanent. Gazing up at the cosmos and its spherical orbits, Kepler believed that he was peering into God’s mind, where he could discern the existence of invisible geometric figures that would explain the theory of celestial harmony. He had discovered “God’s keyboard” and “thus appears on the one hand as a theologian, on the other as the founder of modern mathematical astronomy, which has turned away from theology.”\textsuperscript{79}

Fludd’s geometric symbolism is also consistent with the principle of negative theology, in the distinction between God and pure form. In his system, the created world is associated with the definite area and the Trinitarian God with the indefinite area. We cannot gaze into God’s mind because it is literally beyond the limits of the observable universe. At the same time, God’s mind is pictured in the images as the indefinite space surrounding the template—the Trinity is always shown outside the template. The triangle symbolizes the property of transcendence. But to conceive of this property would be to give some positive definition for it, i.e. to bring it within a definite area. This is the equivalent of destroying it, as a transcendent God is no longer transcendent if He is given an immanent manifestation. The best we can do as finite human beings is to infer the property of transcendence

\textsuperscript{77} Harmonices Mundi (1619), pg 351. When a circle is divided by two lines (that are not at 180 degrees), two unequal sections are created. The piece with an angle under 180 degrees forms the aspect through an inner polygon; the larger piece is the remainder and has no significant role in the formation of an aspect. It was this remainder that could not be brought into a consonant relationship with the whole—a consonance that always exists between the sections of a divided string, including the remainder.

\textsuperscript{78} Harmonices Mundi (1619), pg 351

\textsuperscript{79} Neurath (1973), pg. 287
from some immanent property. Fludd has proposed that the property of divine immanence exists at the sphere of equality, as the manifestation of spirit. After generating the sphere of equality geometrically and counting it in two ways, all that remained was to recombine the two number classes into a single common measure: harmony. This would have the effect of bringing the definite and indefinite areas into a commensurable relationship, symbolically bringing the presence of divine spirit into the created universe. To match his geometry, Fludd’s music had to reach from the lowest point of matter to the highest point form, encompassing all levels of the universal hierarchy within a single, quadruple ratio.

Kepler rejected this comprehensive application of harmony. In his opening polemic against Fludd, Kepler claimed: “I teach that harmonies should never be sought when the things between which the harmonies are cannot be measured by the same quantitative measure.” It is true that Fludd was more interested in the symmetry of harmonies rather than their material constituents; the forms of the intervals rather than their particular applications. In Fludd’s system, harmonies are recognized as formal proportions that can bridge the gap between the definite and the indefinite. Kepler objected to this conception of harmony: “the analogy of proportions in geometry is something formal, in respect of the actual quantitative matter, which is indefinite and undetermined, yet in respect of harmonic proportions it can be considered rather as a material property of the harmonic proportions.” Kepler was insisting that Fludd was seeking harmonies where they should not be sought, i.e. between Fludd’s conception of ‘in’ and ‘out’ values. Largely due to his technical understanding of arithmetic, Kepler took geometry to be explicitly concerned with out-values, as a triangle is a triangle independent of size. His harmonies could only exist between in-values, as an octave is a definite proportion that measures a discrete set of intervals. The harmonic ratios must keep to their own units, either in sensible harmony (on a string) or archetypal harmony (on an arc). For Fludd, it is the formal and material units of arithmetic that keep to themselves while harmonic ratios combine these two sets into a formal unity. Here, harmony incorporates aspects of size and interval.

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80 Harmonices Mundi (1619), pg 506
81 Harmonices Mundi (1619), pg 506
The reason why harmonic proportions possess this synthetic power is that they exist between points and not between areas. This eliminates the pure regions of matter and form as definite and indefinite areas, bringing them into a commensurable relationship. However, the commensurability is only quantitative, as the harmonic ratios are still qualitatively distinct. In this way, the harmonic ratios in Fludd’s system retain the meaning of his geometric symbolism, by means of the two classes of numbers. As an area, the \textit{sphere of equality} cannot be counted as definite or indefinite relative to the other areas. But as a point or node, it becomes the harmonic median of an otherwise incomplete pair of octaves. The inference from immanence to transcendence depends on the recognition of this fact: without the manifestation of spirit, the double octave would be incomplete. Compare this to a mundane observation that would otherwise be an instance of divinity in the created world. To infer the property of transcendence is to recognize that its absence results in an incomplete observation. In Fludd’s system, the harmonic ratios of the sublunary realm depend on the \textit{sphere of equality} for their constitution. Without this anomalous structural median, the transcendent God could never manifest in the created world as spirit, leaving light and darkness as utterly incommensurable principles. This was Kepler’s view: “For [Fludd] compares light (which bestows form and spirit) and matter, two things which are completely different from each other, and to which quantities do not in any way belong in the same respect.”\textsuperscript{82}

4. \textit{Fludd's Musica Mundana}

The specific branch of music that applies at the macrocosmic level is what Fludd called \textit{musica mundana} or ‘world music’. He contrasted this with \textit{musica instrumentalis} (of musical instruments) and \textit{musica humana}, which pertained to humans exclusively.\textsuperscript{83} We will investigate this ‘human music’ in the next chapter. At this point, we have seen how Fludd’s arithmetic permits his harmonies to measure

\textsuperscript{82} Harmonices Mundi (1619), pg 507
\textsuperscript{83} cf. Ammann (1967), pg 198. The threefold distinction of music was traditional since Boethius.
the opposing principles of light and darkness. His two methods of counting geometric areas preserve
the divine identity of spirit that serves as the common unit of measurement. But although the sphere of equality can be counted as an area, it cannot be positively identified as having a certain definite value or an indefinite value. This was expressed by Fludd by the overlapping of arithmetic proportions on the general schematic of the template; a method he repeats in Figure 15 and Figure 16. First, in Figure 15, Fludd takes the sublunary realm and applies the pyramid scheme to this region on its own. Here the sphere of equality functions as an entirely independent region and not as the center strip of the middle or celestial region. The proportions overlap at the sphere of equality, attaching the upper boundary to the lower region and vice versa. This emphasizes the overlapping effect in the constructed proportions, which was much more subtle in the first schematic image (Figure 11). Notice that each quadruple proportion requires a second iteration of the sphere of equality, so the area is measured twice (once per ‘proportio dupla’). Consider the numerical ratios 4:2 and 2:1. If these numbers come from the counting of areas, then the area counted as 2 appears twice in the quadruple proportion of 4:1. We find here an essential connection between the harmonic median and the geometric template, or between spirit and the created world. For if we divide the quadruple proportion into its constituent double proportions, the number 2 does indeed occur twice. To Kepler this may have been trivial; to Fludd, it is evidence. What it reveals is a certain connection between harmony and geometry, so that the medial term functions according to both kinds of proportion. A medial term in an arithmetic proportion, on the other hand, does not function in this way.\footnote{Boethius explains this as follows: “This [harmonic] medial proportion has a property, it is said, contrary to the arithmetic medial proportion. In the case of arithmetic medial proportion, in its minor terms there is a major ratio; in the major there is a minor ratio. In the harmonic proportion, however, the ratio in the major terms is larger, and in the minor terms, it is smaller… Therefore it is also rightly a kind of geometric median and properly is it considered such a proportionality because in an arithmetic proportion where in the larger term there is a minor ratio and in the minor there is a larger ratio, yet in a geometric, in the larger terms there is a larger ratio and in the minor terms there is a smaller ratio.” Quoted from Masi (1983), pg 175} Where an arithmetic proportion has equal differences between terms, and a geometric proportion has equal proportions between terms, a harmonic proportion has equal proportions between differences between terms.
Figure 15: The Pyramids in the Elemental Realm
Figure 16: The Elemental Monochord
It is this feature of harmony that allowed Fludd to combine his geometric areas with his arithmetic, since “the harmonic proportion to something has related aspects of these because it has an attitude of proportion not only in its terms alone or in their differences alone, but commonly in both.”

In Figure 16, Fludd combines the two distinct quadruple proportions into a single double octave. His harmonic divisions of the monochord are made by the curved lines of the template, blending the two kinds of symbolism. Each element is divided into three regions [prima, secunda, tertia]. Reading these divisions into the fourfold template is complicated because the in-4 region (pure matter) is not a region at all but simply the bottom G where the string is anchored. Similarly, the out-4 region is not directly involved in the harmonic proportions but has become the ‘tuner’ of the entire string. This tuner is represented by the sun, shining above the limit of the sublunary realm. This sun is neither the created sun nor the archetypal sun but is a symbol of absolute transcendence. Consider that the celestial sun is literally transcendent (in outer space) relative to the elemental realm just as the archetypal sun symbolizes the literal transcendence of the Trinitarian God. So in this particular image, Fludd has combined these two suns into a symbol of absolute transcendence but in relative terms. The sun has been abstracted from the sphere of equality so that we may observe the properties of this region on its own. Here we have the closest approximation of God in the external world, known through an immanent presence of a created object that possesses the property of transcendence relative to the fourfold template of creation. The two principles of light and darkness, symbolized by the interpenetrating pyramids, become united in the monochord.

Upon closer examination, there is something peculiar about this monochord’s structure. Each element comprises the musical interval of a fourth (diatessaron) but the center two (water and air) comprise a fifth (diapente) when the sphere of equality is included. And indeed, to have two full octaves requires both of these fifths in addition to the fourths of earth and fire. As in the preceding image with the pyramids, the full harmony of the monochord depends on the double presence of the sphere of equality.

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85 Quoted from Masi (1983), pg 177
equality. If it were to be exempt from the monochord, we would have four fourths, and be two tones short of the double octave. Hence Fludd has assigned here the interval of a tone to the sphere of equality. The ratio of a tone is 8:9. On either side of the median, the values are 6 below and 12 above, given the fourfold sequence 6:8:9:12. This is called by Boethius, following Nicomachus, “the greatest and most perfect harmony which, constituted in three intervals, holds great strength in the modulation and tempering of music and in speculation on natural questions.” 86 The reason why this sequence is praised is because it contains all three kinds of proportion. The overlapping fifths give the geometric proportion (6:9 and 8:12); the corporeal fifth and invisible fourth give the arithmetic (6:9:12); the watery fourth and invisible fifth give the harmonic (6:8:12). The entire double octave of the sublunary realm is constituted from a lower, visible octave and an upper, invisible octave. In terms of Fludd’s system, these octaves make the pure regions (fire and earth) commensurable with the mixed regions (water, air and the sphere of equality). We no longer have two overlapping quadruple proportions but a single quadruple proportion, constituted by overlapping double proportions. So the idea of pure form (relatively, fire) stands in a definite relation to the rest of the template while the sun takes the place of the transcendent creator.

The theoretical boundary between pure form and God has now dissolved, but only in relative terms. The region of fire, as a definite part of the template, has the same value as the indefinite area in the original schematic. Meanwhile, the sun has been abstracted from its position at the sphere of equality and assigned to the position of the Trinity. As a second sense for God, the archetypal sun is invisible and uncreated, beyond the limits of observation. But as an immanent presence, the created sun is a symbol for the divine spirit, at the anomalous point of equality in the hierarchical universal structure. The elemental monochord dissolves this boundary and unites the two sun-symbols in the indefinite area. The harmonic ratios achieve this synthetic union by dispensing with areas. So, on the world monochord (Figure 17), we find the synthesis of matter and form in the same quantitative

86 Quoted from Masi (1983), pg 185
measure, with God as the tuner. But nothing more can be said of this universal arrangement without a closer inspection of its individual regions. This is precisely what Fludd has done for his macrocosmic thesis, and what he repeats in his polemic against Kepler.
Figure 17: The World Monochord at a standard resolution
Chapter 4: The Microcosmic Thesis

1. The Monochordum Mundi

I have tried to show how Fludd devised a system for the demonstration of how transcendence can be inferred from immanence. He used a geometric template, twofold ‘archetypal’ arithmetic and synthetic harmony to define a structural feature of the hierarchical universe (the sphere of equality) as an area of spiritual activity. By abstracting the sun from this area, Fludd was showing how the sphere of equality possesses its own kind of geometric harmony, making the created sun analogous to God in His creation. In the human being, Fludd makes the heart into the microcosmic sun at the sphere of vitality. As a result, his method of demonstration is not identical to the macrocosmic demonstration. Firstly, Fludd does not posit an ‘archetypal heart’ that can be considered as pure form relative to some part of the human body. Rather, the archetypal content of the human being is comparable to the Greek logos, in a hierarchy of reason, intellect and mind. Secondly, the individual human soul has its own quantitative presence, as anima, that Fludd assigns to its own pyramid and corresponding octave. Human beings are composed not only of matter and form but also of their uniquely human soul, as a third principle. Thirdly, the rule of the fourfold circular template, though it still applies, is modified to incorporate the physical human body. More specifically, the in-4 region, at the base of the material pyramid, becomes man’s physical body, and at certain times male genitalia in particular. We here return to the gendered interpretation mentioned in the first chapter.

Fludd’s microcosmic thesis also makes use of the Tetragrammaton (הוהי), a four-lettered Hebrew name for God. In comparison to the Trinitarian symbol for the transcendent God, the Tetragrammaton has the added benefit of an extra, fourth component that matches the fourfold template of creation. The matching 4 is how Fludd appropriates this Hebrew name for God in order to demonstrate His emanation into human nature. We can appreciate this numerical symmetry on the more detailed monochord of the world: the Monochordum Mundi of 1623. This illustration appeared in Fludd’s final response to Kepler. The attention to detail confirms the illustration’s
polemical intent. Though Kepler merely ignored this final retort, it stands to be investigated how fully this picture actually supports Fludd’s claims against Kepler.\textsuperscript{87} As another unified representation of Fludd’s system, it contains many of the proportions and symbols that appear in his other images. So I will only pick out a few of these features for special consideration in connecting the previous discussion with Fludd’s theory of the human being as a divine creature.

Four shining points immediately stand out on this monochord. They are the $\alpha$ and $\omega$ triangles on both ends, and the two suns in between. These four points constitute the transcendent and immanent properties of Fludd’s system. The Trinitarian God, as the beginning and the end of the monochord, determines the limits of the created world without contributing directly to its internal harmonies. These definite proportions exist between nodes that divide the string into hierarchical regions, much like the template. But these divisions are linear, not curved. It may be the case that Fludd is here respecting Kepler’s geometric symbolism by omitting the curved divisions employed on the other monochords. Instead, Fludd has made an even greater use of his sun symbol in order to convey its essentially transcendent meaning. There is a fourfold symbolism of the sun in this monochord: twice archetypal (on either end) and twice created (at the median and just below). The archetypal suns are like the anchors where the string is tuned; where the Trinitarian God encloses the created world. But although the archetypal suns are situated beside the $\alpha$ and $\omega$, the created suns are positioned in decidedly unequal locations. One sun occupies the true sphere of equality that divides the monochord into two equal halves. This sun is the macrocosmic sun that occupies the physical location of the created sun in the cosmos. The other sun appears lower on the universal hierarchy, next to Mercury. This is the microcosmic sun that symbolizes the human heart. Though subtle, Fludd has merged his macrocosmic and microcosmic theses in the sun symbol, making this monochord truly universal.

\textsuperscript{87} This remark is based on the view that pictures, on their own, cannot be arguments and can only function as support for linguistic claims. Cf. Fleming, David. “Can pictures be arguments?” Argumentation and Advocacy, 1996, p. 11.
Figure 18: The World Monochord with all its details, created with polemical intent.
Even more subtle is the connection between this monochord and the geometric template. To remain consistent with the rest of Fludd’s system, its proportions must be derived from the original creation. The ‘logic of areas’ from the geometric template is given here by the faintly visible letters of the Tetragrammaton. Each letter represents a ratio derived from the two ways of counting, with the letter yod (י) being repeated on either end. This additional fifth letter creates a palindromic representation that matches all the areas in Fludd’s template: יהוהי is out-4, 3, 1, 3, in-4. If we assign yod the value of 4 and consider it relative to the universal hierarchy, then alpha indicates the out-4 region while omega is the in-4. This leaves the upper he (ה) and the lower he (ה) with the values of out-3:in-1 and out-1:in-3 respectively. The middle letter vau (ו) functions as the celestial region containing another sphere of equality or out-2:in-2. The microcosmic sun occupies this position, which is really the sphere of vitality in the human being. The microcosmic thesis makes this clear through an elaboration of the Tetragrammaton relative to the human being, bringing God into creation in a way that is precluded by the absolutely transcendent God of the Trinity.

2. Observer and Observed

The Tetragrammaton allowed Fludd to defend a nuanced view of the human soul against Kepler’s claim that the soul was a part of nature. Fludd denied this, along with Kepler’s geometric symbolism of influential configurations through divisions of the circle. Instead, Fludd maintained that the soul was indistinguishable from God, so that “all souls have a continuous relation to the one world-soul of the Metatron, as has the sunlight to the sun.” Remove the body of the sun and you remove its light; remove the world-soul and you remove all human souls. This analogy could not be demonstrated using the method already discussed, i.e. identifying an archetypal sun and abstracting the created sun from its physical position. For the human heart cannot be so abstracted and there is

Figure 14: The World Monochord in high resolution, to show the consistency of Fludd’s system

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88 Quoted in Pauli (1952), pg 223
God would result in any discernible change in human life, since an absolutely transcendent creator has to be inferred from some immanent presence. This presence in human beings must be God Himself, although human beings are not identical to God. Unlike the symbol of the Trinity, the Tetragrammaton symbolizes an emanation of God directly into humans, so that each letter possesses a different meaning without destroying the identity of the whole word. In a phrase, this fourfold symbol always has one foot in the indefinite. The letter yod usually serves as this ‘foot’, anchoring the entire word in the divine or indefinite areas (as in the universal monochord). The other letters then occupy various regions of the created world, or their equivalents in the human body.

Whereas yod symbolizes the out-4 region and the light principle, the human body is a physical symbol of the dark principle in the in-4 region. The two methods of counting are now two methods of symbolization; one for the natural human being and one for the archetype of the divine mind. Each has its own pure region and three regions of overlap. With these equivalencies, Fludd will divide the human soul into three parts, roughly corresponding to the tripartite division of the soul in Plato’s republic (appetitive, spirited and logical). As constituents of the divine mind, the soul retains its unity in the image of God just as each letter of the Tetragrammaton is an indefinite, out value that is commensurable with the absolutely indefinite yod. But the association of the divided human soul with the letters of the Tetragrammaton is the equivalent of associating in- and out- values in Fludd’s arithmetic. To truly bring them together requires harmony, musica humana, that will demonstrate the unity of a human soul in relation to the divine mind as a literally transcendent archetype for the constitution of the human being. To do so, Fludd had to deconstruct the barrier between the human observer and the observed phenomenon—a distinction that was gaining recognition as the essential criterion for objective knowledge. While the barrier is more than just theoretical, its dissolution is made intelligible by the fact that Fludd has employed the human body as a physical symbol, on par with his material arithmetic, for the purposes of his human readers.
Figure 19: The Tetragrammaton emanating into the template as the formal numbers counting indefinite regions. Each successive letter is retained in the downwards progression, forming a tetraktys.
Figure 20: The Tetragrammaton emanating into the human being. The human body is a physical symbol for the material numbers, counting definite regions.
If Fludd’s images are authentic demonstrations, then they should facilitate the acquisition of knowledge or produce a state of ‘knowing’. As quoted in the introduction, according to Pauli, this experience of knowing “can only be comprehended through symbols which both imaginatively express the emotional aspect of the experience and stand in vital relationship to the sum total of contemporary knowledge and the actual process of cognition.”

Dissolving the barrier between the observer and observed has mysterious consequences akin to alchemical transmutation. As seen in Figure 20, Fludd’s technique is to use the human body as a physical symbol for the material numbers. But what kind of human has been illustrated here? It is a universal, archetypal human being. The concept can be understood in the difference between two deductions:

1. This is a picture of a human being.
2. I am a human being.
3. Therefore, this could be a picture of me.

and

1. This is a picture of the human being.
2. I am the human being.
3. Therefore, this must be a picture of me.

The difference is between thinking of oneself as a particular human or a universal, archetypal human. A human being is no human being in particular, like you or me. In everyday self-consciousness, we are aware of ourselves in this mode of personal, subjective identity. However, Fludd’s microcosmic thesis is built on the human being—an archetypal human such as in the story of Adam & Eve. In Cabalistic literature, the human being is Adam Kadmon. What does it mean to identify oneself as an archetypal human being? In the context of Fludd’s system, it would be to identify with the physical symbol of the human being in the illustrations. In turn, this would make the second deduction above

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89 Pauli (1952), pg 212
90 “Adam Ha-Rishon, the Adam of the Bible, corresponds on the anthropological plane to Adam Kadmon, the ontological primary man.” Scholem (1941), pg 279
not only valid but sound.\textsuperscript{91} It means that the picture is of you, the observer, as it could be for any other human observer that thinks in this way. Unlike the first deduction, the conclusion is not possible (that it could be you) but necessary, that it must be. Fludd’s technique relies on the necessary connection between the human symbol in the image and the human observer in the real world. Unsurprisingly, this challenges human identity in the common sense and speaks to the wider problem of how humans study themselves, as in anthropology.

To meet this challenge, I have found it helpful to think of these human-images as Aristotelian enthymemes — “the substance of rhetorical persuasion.”\textsuperscript{92} Recent studies have defined enthymemes as a deduction with an implied premise, or “a syllogism with one of its parts missing.”\textsuperscript{93} The missing part must be external, as in a sign or an image. The physical human symbol is like an implied premise because it is invariably a sign of some human being, whether universal or particular. And no reasonable observer would deny that they are some human being. I have suggested that Fludd’s human symbol is a universal archetype, leading to a necessary conclusion. However, this is only the case when the observer identifies themselves as a similarly universal human being, and no longer separates themselves from the human symbol in the picture. The probable conclusion of the enthymeme is preserved in the possibility for the observer not to identify with Fludd’s symbol and remain wholly apart from it, as the observed. The leap from one self-identification to another takes the form of a judgement with emotional and ethical dimensions. The logical form itself combines emotional sympathy with ethical consequences into a deeper, unifying experience whereby the human that gazes at the image begins to gaze into themselves.\textsuperscript{94} Obviously, this kind of judgement is not easily coaxed out of the skeptical mind. The effectiveness of these visual arguments ultimately “depends on agreement between messenger and audience, discovered in the common opinions shaped by the

\textsuperscript{91} Even if it is a mistake to identify oneself in this way, it is just as much of a mistake to think that Fludd was intentionally drawing a picture of you!
\textsuperscript{92} Rhetoric 1354a, 14-15
\textsuperscript{93} Smith (2007), Aristotle’s Classical Enthymeme and the Visual Argumentation of the Twenty-First Century, 114
\textsuperscript{94} This makes self-reference possible in a way that may be characteristic of esoteric thought generally.
contexts and culture of the people addressed."\textsuperscript{95} As Pauli remarked: “Just because in our times the possibility of such symbolism has become an alien idea, it may be considered especially interesting to examine another age to which the concepts of what is now called classical scientific mechanics were foreign but which permits us to prove the existence of a symbol that had, simultaneously, a religious and a scientific function.”\textsuperscript{96} In the next section, I’ll explain how Fludd tried to give the physical human symbol a scientific function, in addition to a religious one.

3. Anima as Third Principle

We have seen that Fludd’s system is based on the principles of light, darkness and spirit. The interpenetrating pyramids showed how spirit manifests at the \textit{sphere of equality}, when light and darkness are in equal parts. Though this same phenomenon exists in the human body, Fludd utilizes the body as a physical symbol of the individual soul (anima). As such, the entire body represents the third principle, like a separate extension of the world-soul. This makes the microcosmic thesis decidedly more complicated than the macrocosmic thesis; to demonstrate how the third principle manifests not only at the \textit{sphere of equality} but within and throughout a specific material body. These ‘demonstrations of the harmony of the soul’ are the basis for Fludd’s theory of \textit{musica humana}. Figures 21-24 show what Fludd called the ‘first demonstration’ of this harmony. In this sequence of images, the template and pyramids are applied to the human body. Here, \textit{Deus} is the Trinitarian God and thus does not emanate into the body, as the \textit{Tetragrammaton} did. Instead, Fludd is showing how his two kinds of arithmetic can still be synthesized harmonically in the human being. The important difference is observed in Figure 24, where the human symbol is omitted and, in its place, a new ‘anima’ pyramid is shown. With three pyramids, Fludd has added something to his harmony—the distinctly \textit{human} faculties of intellect, imagination and sensation.

\textsuperscript{95} Smith (2007), 122
\textsuperscript{96} Pauli (1952), pg 212
Figure 21: Counting the human body with material numbers. Notice that there is no absolute-in region, which was occupied by the geocentric earth in the universal hierarchy. Instead, Fludd has drawn the male genitals outside of the stomach region and numbered them 4. This is the first indication that the human body is a physical symbol in this image, and the male one specifically.
Figure 22: Counting the human body with formal numbers. The number 4 does not appear, perhaps out of recognition of the Trinitarian Deus in the indefinite area. The body is also mirrored relative to the previous image, suggesting the complementarity of material and formal counting.
Figure 23: A harmonic synthesis of both kinds of numbers. Once again, the number 4 is omitted but is implied by the material genitals and the formal, indefinite Deus. The sphere of equality is the central node for both octaves, which are in the same arrangement as the elemental monochord in Figure 16. Instead of visible and invisible octaves, these ones are material and spiritual.
Figure 24: The first demonstration of the harmony of the soul. Removing the human symbol, Fludd has modified his pyramid scheme by inserting a third ‘anima’ pyramid. As an abstraction from the human symbol, it has taken the place of the formal pyramid with the material pyramid having two iterations: bodily and spiritual. The human body is at once corporeal and spiritual, combining the dark and light principles within itself.
These correspond to the divisions of the human body into head, chest and stomach. Though the divisions will multiply in later images, this first demonstration of *musica humana* combines the physical human symbol with the third principle (now called soul) on the basis of twofold, archetypal arithmetic.

The force of Fludd’s microcosmic thesis lies in the meaning of *anima*. It stands in the same relation to the manifestation of spirit at the *sphere of equality* as the individual human soul stands to the collective world-soul. However, the human anima must also account for the uniqueness of the human being, particularly its differentiated faculties like sensation, imagination and reason. It seems that Fludd reasoned along the following lines: the human being (like everything else in the universe) contains light and darkness in varying degrees. However, what sets it apart from other beings is that it is structured in the same way as the entire universe, i.e. like the macrocosm. Therefore, the material human body cannot be simply material but also spiritual, as a reflection. And yet the human body is not invisible or transcendent but is plainly visible and immanent. Hence the corporeal and the spiritual must find communion in the human being, while the third principle (anima) manifests not only at the median of the body but comprehensively throughout the organism without any strict localization. Perhaps this is the reason why no ‘archetypal heart’ exists that can be abstracted from the physical heart—the human being is the *sphere of equality* insofar as humans are unequivocally linked to this universal manifestation of spirit, in the world-soul. It is this connection that gives human beings a ‘third principle’ and makes the human body distinctly spiritual, more so than other created bodies. This connection was not so explicit in Kepler’s analogy of the soul. Kepler claimed that the individual human soul has a “twofold faculty in connection with the harmonic proportions, one contemplative, which is mental, or so in a sense, the other operative”. 97 He compared the contemplative to the point and the active to the circle, “For just as the center is inside, and the circle more outside, so the mind keeps itself to itself, and reasoning weaves a sort of exterior web”. 98 On this view, the soul responds to influential configurations from outside of itself just as the rays from the planets may excite a

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97 Harmonices Mundi (1619), pg 307
98 Harmonices Mundi (1619), pg 335
response in the *anima telluris*, or the soul of the earth. This was Kepler’s version of the world-soul, which he argued for by analogy. Kepler offered plenty of examples of how the earth-soul was similar to human souls. Even the non-deterministic astrological aspects supported his analogy: “disturbances in the weather do not always correspond precisely with the aspects, but the Earth occasionally seems slack and stubborn. …the earth is not an animal like a dog, attentive to every nod, but like an ox or an elephant, slow to anger, and all the more violent when it has been kindled.”

What kindles the earth-soul are the configurations of polygons from the harmonic divisions of the circle. The incident angles of the polygons functioned as “qualitative quantities” that determined, *a priori*, which configurations would count as influential. The soul was thus an image of God, as the curved line describes both the divine mind and the individual soul: “The main point is that the circle should be abstracted from corporeal and sensible things to the same extent as concepts of the curved, the symbol of the mind, are separated and, so to speak, abstracted from the straight, the shadow of bodies.”

As we have seen, Fludd did not subscribe to the geometric analogy of the curved and the straight for conceiving of the divine. Naturally, he objected to Kepler’s theory of the soul on all fronts, drawing on his collection of ancient authorities. Fludd’s specific argument against Kepler’s analogy is the following:

A. *That which in and of itself is neither a number nor has quantity is not capable of receiving into itself any quantitative figure (such as the circle).*
B. *Now the soul, which is freed from corporeal laws, is not a number and has no quantity.*
C. *Therefore, the soul does not receive into itself from the very beginning a measurable figure (such as the circle); and consequently a circle is not in the least reflected in it.*

Kepler’s analogy is too quantitative and hence too literal, as if the soul itself could be measured in the same way as the celestial bodies and that this measurement established a real connection between.

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99 Harmonices Mundi (1619), pg 363
100 Harmonices Mundi (1619), pg 327
101 It would seem, however, that a soul may respond to an influential configuration yet may still ‘stubbornly’ resist it, combining a determinism of geometric harmony with the indeterminism of individual actions.
102 Harmonices Mundi (1619), pg 305
103 Quoted in Pauli (1952), pg 219-220
human souls and God. By contrast, Fludd was seeking the connection between human souls and the world-soul in a more concrete analogy. Indeed, Fludd wanted to demonstrate the connection using a physical human symbol rather than applying abstract angles and polygons to the human sphere. Rather than positing the curved as a symbol for the mind, the mind is made a part of the human symbol. In this way, the human being becomes part of the analogy, enmeshed in the dark principle. The light principle functions as the divine presence that gives the human soul its unique properties. In Fludd, we find no rigid distinction between the mundane, corporeal body and the sacred functions of the incorporeal mind. Rather, in accordance with his macrocosmic theory, all aspects of the human being truly belong to the world-soul. The corporeal body is but a spiritual manifestation of the world-soul as a human individual, complete with ratiocination, sensation and genitalia. As such, it is simultaneously a spiritual body; a connection already indicated in Figure 24. Figure 25 shows Fludd’s second demonstration of the harmony of the soul. This is a complex diagram that combines the principles of light and darkness with the third principle of anima. The line connecting the two worlds is created by the light principle in order to bring the human soul into its spiritual ‘vehicle’. The two cubes indicate two kinds of extension, one spiritual and one formal. The former is identified with the body (corpus) and the elements, while the latter is ascribed to the higher faculties, particularly the hierarchy [mens, intellect, ratio]. The extension of two worlds is reminiscent of Henry More’s objection to Cartesian dualism, namely that mental substance requires its own kind of extension. But for Fludd’s system, the formal world is required to account for the higher psychological faculties of the human being, while the spiritual world (extending into the corporeal body) accounts for the human body, as well as sensation and lower, ‘darker’ operations. These worlds are mapped onto the human being in Figure 26. Notice how the number 8 has created an octuple proportion (three octaves), with a third octave emerging in between the other two. It is this intermediate octave that accounts for the extension of the other two in a single body, formed by an overlapping effect.

104 In his correspondence with More, Descartes would concede that an extension of power could accompany an extension of material substance.
Figure 25: The second, and more complex, demonstration of ‘the harmony of the soul’. Darkness is represented by a sphere while light is a triangle. The extension of the cube is numbered from 4 to 8, adding a new integer to the typical fourfold scheme. This is due to the active role of the anima in combining the two principles by a line, described by Fludd as the vehicle of the mind (Mentis vehiculum). The ‘vehiculum Anima’ is in the spiritual world, in the dark square. Only in the cubic extension, to 8, is the corporeal body itself accounted for.
Figure 26: The harmony of the human being with the human symbol divided by the template. The dark and light principles are represented in the same way but the male genitals now occupy the sphere of darkness. The emergent middle octave is created by the overlap of the lower material double-octave and the upper spiritual one. Among the many proportions in this image, note the diapason connecting the sun (Sol) with the mind (Mens).
4. Gender and Psychology

In Figure 2 of the first chapter, we saw the only presence of woman in Fludd’s entire series of systematic illustrations. She represented the *anima-mundi* that connected the man-ape to the *Tetragrammaton* above. Hence woman occupies a position closer to divinity than man, insofar as she was pictured standing in the sublunary realm but had her head in the empyrean. What this means, for man, is that his knowledge of the divine is mediated by an archetypal figure, whether in the form of woman or the world-soul itself. As enlightening and beneficial as this unified spirit can be, it is also a mysterious and occult force, with distinct psychological effects within each individual. As much as Fludd was criticized for ‘delighting in secrets’, the obfuscation serves a very real purpose whenever an attempt is made to bring the irrational dimensions of human existence into a rational framework. To be fully systematic requires the admission that not everything is fully systematic. To this end, Fludd adapted his symbolism of darkness and light to express the principles of order and mystery as forces in the human psyche.¹⁰⁵ The traditional, mythological representatives of these forces were Apollo and Dionysus, which both appear in Figure 27. This image offers a different perspective on Fludd’s ‘logic of areas’, as represented by pure and mixed regions. Recall that pure regions are the foundations for the dark and light principles while mixed regions contain some of both principles. The diagram starts from a mixed region (A), or the circle split in two by light and darkness. The pure regions are the absolute circles of darkness (B) and light (C). These circles combine into a single circle that still retains the identity of each principle, as a semi-circle—both day (D) and night (E). The entire process seems to convey the same idea as the interpenetrating pyramids. Darkness occupies the geometric center, like the earth, while the dove brings light from outside the circle and into the approximate middle, like the *sphere of equality*. But here, Fludd has added the extra semi-circles G and F, suggesting that Apollonian light and Dionysian darkness are both required for complete, circular wholeness.

¹⁰⁵ Jung characterized these two forces in the masculine and feminine archetypes, reiterating the ambivalent connecting/disrupting woman between the man-ape and the divine mind. In alchemy, the sun is masculine while the moon is feminine.
Figure 27: Starting from a mixed unity or region (A), each principle is given its own sphere (darkness B, light C) before reuniting in a single, heterogeneous unity (D and E). The semi-circles G and F show a personification of each principle as Dionysus and Apollo.
Just as our finite minds prevent us from having absolute knowledge, so too does the human psyche possess conflicting forces of order and chaos that prevent us from discovering everything about our own nature. The chaotic principle, Dionysus, cannot be fully dominated by the rational ordering principle, Apollo, just as light and darkness require one another. In Fludd’s logic of areas, we can think of a circle that instantly divides the universe into a definite space within and an indefinite space without. The definite needs boundaries to separate it from what is not definite. In the macrocosmic theory, the two versions of arithmetic captured this complementary relationship. For the microcosm, the complementarity is within the human being. As a result, the closest visual approximation of the dark principle is to draw the physical body and overlay a dark area below the light one. This is exactly what Fludd does in the final, cumulative illustration of the second tome. Figure 28 is a picture of the archetypal man (Adam Kadmon) in relation to the archetype of the divine mind in the indefinite area. Man is split into two parts: night and day. It is the ‘day of the microcosm’ that receives the order typical of Apollo. The order is also twofold, so that each octave is given a psychological interpretation, pertaining to the divisions of the soul, as well as a more general, physical term. Thus the lower octave bridges body with imagination but is also the corporeal octave between the senses and the vital force. The upper octave bridges imagination and intellect as well as being the spiritual octave between the vital force and reason. The complete double octave, between body and mind, is Fludd’s *musica humana* analogous to the *musica mundana* of the macrocosmic theory. The *Tetragrammaton* occupies the out-4, indefinite area as the symbol of the Trinity did previously. Though Fludd had shown the *Tetragrammaton* emanating into the human being, it now shines down onto the created human body as a transcendent yet formative principle, much like Kepler’s analogy for astrological influences as pumpkin wires: the divine mind does not determine the specific operations of imagination or intellect but ‘moulds their condition’. This has a visible effect on the psychological hierarchy in the light region, and a more numinous and invisible effect on the lower, dark region of man.
Figure 28: The human being is split into two principles, of day and night. The day contains the psychological hierarchy and faculties of the soul. It is also the region of harmonic proportions and the heart, at the sphere of vitality. Notice that the intermediate third octave, though not labelled, is still present in the middle 4th and 5th intervals. The monochord runs through the body as the axis of symmetry, with three labelled points that roughly correspond to the three letters of the Tetragrammaton that had previously been shown emanating into the body. (he, vau and he).
I think that this image demonstrates something about human beings but also something about gender. The reason is that woman, as she appeared in the preface, was closer to the divine mind than man, whom Fludd sometimes depicts as an ape. But here, it would seem that man is closer. If we take the Apollonian order of the ‘microcosmic day’ to be a genuinely masculine archetype of rational ordering and dissecting, then the feminine archetype may in fact lie hidden beneath, in the ‘microcosmic night’. Thus the man-ape and the magic-woman have swapped positions: she is the undercurrent to the male ‘anima’ that is now in direct communion with the Tetragrammaton. As the dark principle, the feminine is needed for the rational light of the diverse psychological functions. The entire template encloses both principles, with the sun orbiting (rising and setting) like the rhythm of the heart (systole and diastole). Both principles are part of these regular cycles. In the light, we have precise measurements for each operation and its location in the body. This is where Fludd has constructed his system according to the Quadrivium, isolating the manifestation of spirit at the sphere of equality and dividing the human being according to the template. But in the Dionysian darkness, the order is hidden and concealed, as the part of the psyche that does not make itself known to the conscious mind. Compare this to the astral woman figure of the anima-mundi, linking the ape-man to the Tetragrammaton. The ape-man does not know the divine mind except through her. Similarly, the archetypal human being is only complete when both light and darkness play their role—the impulse to systematicity succeeds only when it announces its limits. The Kepler-Fludd debate was mainly a dispute about such limits, but not as explicit as the limits of gender. Yet we have glimpsed just this kind of limitation in Fludd and can use it to enhance our modern understanding of the difference between light and darkness.
Chapter 5: The Jung-Pauli Interpretation

1. The Need for Proof

In one of his written correspondences, Kepler made the following statement:

I too play with symbols, and have planned a little work, Geometric Cabala, which is about the Ideas of natural things in geometry; but I play in such a way that I do not forget that I am playing. For nothing is proved by symbols, nothing hidden is discovered in natural philosophy through geometric symbols; things already known are merely fitted [to them]; unless by sure reasons it can be demonstrated that they are not merely symbolic but are descriptions of the ways in which the two things are connected and of the causes of this connexion.  

Examining Fludd’s illustrations, the sceptic will likely mount the same objection: nothing is proved by these symbolic arrangements. As Kepler noted, there must be ‘sure reasons’ that describe the causal connection between the ‘natural things’ and the symbols themselves. For Fludd and the Pythagoreans, numbers are natural things that are known as universal ordering principles as arithmetic is the science of number in itself. The ubiquity of number endowed it with mystical and divine qualities. Here’s the catch: in order to prove something about numbers, one would simultaneously have to prove something about divine matters. Both ambitions are clearly evident in Fludd’s illustrations. The outstanding question is whether Fludd’s demonstrations really transcend mere play and attain a level of certitude comparable to scientific knowledge. Even if they are ‘useful fictions’ (like Kepler’s Platonic solids), we must now ascertain whether Fludd’s system can be held to a more rigourous standard of evaluation. We must determine if it signifies a leap into the domain of poetic religiosity. If so, we may conclude that the Pythagorean conception of number cannot be given a purely scientific form. This would subsequently justify Kepler’s claim that counting numbers, numeri numerantes, have no meaning (as ordering principles) unless they become counted numbers, numeri numerati.

I have tried to elucidate a few patterns between Fludd’s images using (what I have termed) a ‘logic of areas’. In this logic, Fludd was counting areas as identical ‘units’. As such, the areas have

106 Quoted in Vickers (1984), pg 155
no qualitative identities besides their relative positioning, disclosed by the two methods of counting. The absence of true dissimilarity in the counted areas can be interpreted in two ways: an intolerable lack of friction or a purely formal structure. It is the latter interpretation that I have favoured since it explains why Fludd could apply his mathematical divisions to both the macrocosmic thesis and to the physical human symbol in the microcosmic thesis. But Fludd was not inventing these divisions out of thin air. The formal structure of his theoretical logistic has a cultural trajectory that cannot be discounted as simple faith. In fact, it is precisely the historical current in Fludd’s system that makes it scientific. The intellectual context of the 17th century obscures this fact in virtue of the scepticism concerning ancient doctrines. However, I believe that we are currently in a position to take advantage of Fludd’s work in a way that preserves the Pythagorean conception of number without the unbridled mysticism. In short, the value of a theoretical logistic lies in its congruence with other theoretical logics since each counts the same ‘identical units’. They are all calculations made within the same formal structure, allowing for a level of commensurability that is comparable to a practical logistic. 

Let’s consider Kepler’s calculations for a moment, which were made within the formal astronomical structure. His measurements of planetary motion gave rise to three laws that governed these motions. The numbers involved in these measurements are inert and only serve as a means for recording observations, to be compiled and compared. The whole point was to explain the regular motions of the planets, where the motion of one is non-identical with the motion of the others. There could be no lack of friction between the dataset and the planets themselves (the ‘natural things’). Just mark an observation of Venus and keep your eyes trained on that moving point of light. The observer, like the numbers, simply translates the phenomena into a formal structure, which can then be simplified and manipulated. The manipulation of numbers here corresponds to the moving planetary objects, so that anyone else (e.g. Newton) could appropriate the formal structure for the study of the exact same objects at any time. They could even repeat the empirical derivation of Kepler’s laws.

107 Figure 11 (pg 33) shows the most general schematic of the formal structure.
Such is the temporal commensurability of a practical logistic, particularly effective for ‘scientific progress’. At its core is the distinction between the observed and the observer, where the former is thoroughly objective while the latter is ultimately a vessel for formalization. This is, of course, an idealized separation since each observer contributes an interpretation from their own opinions and beliefs. As a watershed figure, Kepler is a perfect example of how this personal and subjective dimension can inspire and motivate without comprising the objective project of translating natural phenomena into a formal structure. The Platonic solids and archetypal harmonies were incidental to the method, as the arithmetic was incidental to the laws.

A theoretical logistic turns this reasoning on its head: the objective dimension is incidental to the subjective beliefs and opinions of the observer. It is the observer that is of primary interest, not the observed. This inversion reduces the meaning of observation to a matter of utility, as a means for communicating ideas within a consistent formal structure. The friction between the ideas and ‘natural things’ is secondary to the meaning of the ideas themselves, as products of the human mind. Recall Fludd’s concern that many ancient ideas had been expressed poorly and without the clarity required to communicate their essential meaning. What is unclear is how this clarity could ever approach the purely formal structures of mathematics. It would seem that numbers would have to possess conceptual content, such that each number would be associated with a concept (one is ‘truth’, two is ‘illusion’ etc.). Although Fludd sometimes wrote in this way, this is not the scientific function of number as a universal ordering principle. These are always speculations. What is demonstrated in Fludd’s images are ‘sure reasons’ that describe, not the causal, but the acausal connections between ideas. What makes the reasons ‘sure’ is that they do not belong to Fludd, i.e. they are not exclusively his ideas. For the most part, the ideas belonged to others and were raised to the level of philosophy in another time, culture and place. To search for a causal connection, the claim must be softened, to ‘possible reasons’. However, this softening is not due to the fact that a causal connection is forever
unattainable but that it is presently unknown—the possible becomes sure when acausal meaning becomes causal.

2. Acausal Meaning and Theoretical Logistic

One of the main topics discussed by Jung and Pauli was the significance of meaning without apparent causality, especially in connection with scientific knowledge. Together, they devised a quaternary that supposedly models a ‘whole judgement’.

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Indestructible Energy
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Constant Connection through Effect (Causality)  Inconstant Connection through Contingency, Equivalence or "Meaning" (Synchronicity)
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Space-Time Continuum
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This schema was intended to integrate the postulates of modern physics with those of psychology. The fourth, inconstant connection through synchronicity represents something necessary, even if it needs to be added by force to the other three. Like Kepler’s non-deterministic view of astrology, it symbolizes the baby, not the bathwater. It is not a means for prediction like the constant connections of causality. Rather, it preserves human spontaneity within the otherwise deterministic boundaries of a detached physics. Synchronicity depends on contingency, equivalence, and (most importantly) coincidence. It is the very nature of coincidence that it be contingent, inconstant etc. for it would otherwise be a predictable event, like the planetary motions. There is a very common sense understanding of what an acausal connection is—most often, it is coincidence. What is not so apparent is what a coincidence should mean, if it should even mean anything at all. It is best, then, to think of coincidence as a limiting concept that alters meaning as such. Without the fourth component

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108 From Jung (1952), pg 137
109 “…or as the recalcitrant ‘Fourth’ in the Timaeus, which, Plato says, can only be added ‘by force’ to the other three.” Jung (1952), pg 134
of a whole judgement, this alteration could only appear as a destruction of meaning, as no causal explanation is equated with no meaning beyond brute chance. With the addition of the fourth, the lack of causal restriction becomes an opportunity; it is the meaning of discovery, where a definite cause may be unthinkable yet not totally impossible. On the basis of Fludd's system, I would maintain that the absence of a definite cause does not relegate coincidence to an unknowable, 'noumenal' realm beyond our comprehension. Rather, every coincidence has a rational explanation on the basis of cause and effect; an explanation often ignored or tuned-out. Tuning-in these causal relationships is to discover them, even if it takes a very, very long time. In turn, this would give new meaning to what had previously been thought of as chance, luck or randomness. Acausal meaning indicates the essential finitude of the human intellect but in a way that can be progressively overcome.

Jung claimed that synchronicity “is not a philosophical view but an empirical concept which postulates an intellectually necessary principle.” 110 The issue with Jung’s formulation of the principle is that it relies too heavily on psychological archetypes and leaves the empirical concept at statistical probability. For example, the second chapter of Jung’s essay describes an astrological experiment on marriage that was intended to demonstrate the reality of ‘synchronistic phenomena’. He also searched for support in ESP experiments, which he thought “provided a statistical basis for evaluating the phenomenon of synchronicity”. 111 A single objection can be launched against every attempt to make synchronicity empirical: apophenia. 112 According to Jung’s essay, what makes the empirical ‘chance’ meaningful is its correspondence with an archetype, which “represents psychic probability, since it portrays ordinary instinctual events in the form of types.” 113 The archetypes are indefinite, “that is to say they can be known and determined only approximately.” 114 What this really amounts to is a non-deterministic psychological thesis about particular minds. Acausal meaning belongs to an a priori

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110 Jung (1952), pg 133
111 Jung (1952), pg 48. The experiments carried out by J.B. Rhine were especially convincing for Jung.
112 i.e. the tendency to perceive patterns in random or meaningless information. An earnest analysis of any data set will inevitably yield some sort of pattern.
113 Jung (1952), pg 138
114 Jung (1952), pg 137
psychic state that says nothing about the external events themselves. Jung’s ‘empirical concept’ bottoms out in the question of how an archetype could prime the human mind to respond to a particular configuration of otherwise unremarkable events. So when a coincidence occurs, the meaning could only transform into an utterly subjective kind, like Fludd’s ‘dreams’. There seems to be no real discovery here, only spiraling intuitions projected onto phenomena. Among these projections could be any number of ‘illusory causes’ or imaginary relations that may even lead to delusions. When Mersenne called Fludd an ‘evil magician’, he may have perceived precisely this threat in the impossibly absolute units of Fludd’s measurements.

The real opposition here is between meaning based on observation and meaning based on unity. We are specifically interested in the unity of the concept of number. True to the Pythagoreans, Fludd’s system gives both a scientific and a religious function to arithmetic. For Kepler, this obscures the possibility for genuine observation, and with it the possibility for genuine science. On Jung’s interpretation, these rational demands are symptoms of the Western intellectual bias. If the Eastern conception of meaning (e.g. Tao) is identified with esoteric practices and occult sciences (as Jung supposed), then the East-West divide serves as a precondition for the sceptical rejection of these very disciplines in the West. When the unified meaning of Jung’s Tao resurfaces in systems like Fludd’s, it is likewise condemned as poetry or fanciful subjectivity. But in Jung’s hypothesis, this is a suppression of a deeply sensitive and ingrained archetype—the unconscious. The symbolic conflict between Kepler and Fludd would then have roots in a much older and stubborn divergence in human evolutionary development. Jung’s thesis of synchronicity verges on a philosophical anthropology insofar as it could have a profound effect on the way that humans study themselves. We have already seen how Fludd’s images could have this effect, by using the human symbol as a mirror in which the actual observer can be reflected. It is this mode of self-reference that qualifies scientific function of the images themselves, passing over into a new kind of meaning that approaches the religious. And it is
this ‘passing over’ that signifies a theoretical logistic, which “arises from practical logistic when its practical applications are neglected and its presuppositions are pursued for their own sake.”

3. Number Archetypes

The virtue of a theoretical logistic is that the formal structure is not bound to any specific set of qualitatively distinct objects but can be applied to any substantive idea or symbol. These calculations are atemporal and eternal procedures that continue independently of the individual minds that contribute to their development. Each mind is able to apply the same formal structure to their own ideas (like opinions and beliefs) and have them stand in a commensurable relationship with one another. Fludd’s calculations of identical ‘noetic’ units were certainly carried out in his mind but their products are truly universal. The Pythagorean conception of number is what makes this possible, by casting numbers as universal ordering principles, to be discovered. Jung made the same claim in his essay: “it is not such an audacious conclusion after all if we define number psychologically as an archetype of order which has become conscious.” These are archetypes that are known with conscious certainty. They operate with both the light and dark principles, translating not only observed natural phenomena (e.g. in astronomy) into formal structures but also establishing a distinctly scientific link between the rational ordering of formal structures and the numinous, non-rational undercurrent in the human being. Fludd’s images preserve this link as a religious and spiritual connection to the world-soul. But Jung’s hypothesis of synchronicity, along with Pauli’s historical thesis, are both attempts to describe this connection as a passing-over into a new kind of meaning, acausal rather than downright mystical. The problem of squaring this meaning with the sphere of scientific knowledge is precisely what confronts the Pythagorean conception of number and Fludd’s system as a whole.

When a ‘synchronistic phenomenon’ occurs between numbers, there is, without a doubt, a cause. Take the case of Kepler’s epiphany that the 5 Platonic solids define the 6 planetary orbits—just how

115 Klein (1934), pg 24
116 Jung (1952), pg 58
did he have such an epiphany? What made it possible? Taking numbers to be ordering principles, then it is not patently absurd to say that Kepler's epiphany was somehow caused by the numbers 5 and 6. Alternatively, it was an instance of divine inspiration; an explanation that Kepler was apparently content with. He was not of the opinion that the divine quality of his experience was an incidental feature of the numerical archetypes in play; rather he saw the numbers themselves as incidental. Likewise, the objective laws of Kepler’s measurements were (to him) the product of a much more subjective, almost delusional picture of the universe. It is within this private, volatile realm that Fludd’s images imposed themselves. It is possible that the coincidence of the triangular diagram (as explained in the introduction) made Kepler reconsider his epiphany, along with his understanding of causality. Moreover, why attach divine symbolism to geometry alone and not to arithmetic? The Pythagoreans and their followers defined arithmetic as the ‘mother’ of the other sciences in the Quadrivium, since they depend on it but it does not depend on them. Although Kepler would go on to discover more specific causes for the harmonic consonances in his geometric method, it seems he had forgotten the first cause. But in Kepler’s story, forgetting this first cause is a side-effect of the more sceptical rejection of number-archetypes. The self-evident numerical forms of Kepler’s life-work would inevitably be treated as accidental features, having no definite causes themselves but being mere byproducts of an essentially rational ordering.

This is exactly the kind of attitude that takes ‘coincidence’ to be a genuine explanation, in any circumstance. The lesson to take from the Kepler-Fludd polemic is that coincidence can only ever indicate a limit to reasoning. This limit does not terminate reasoning but marks a point of inflection. This is the mistake—to trust in the correctness of one-side only and stop short when that side ends. As soon as the limit is reached, a new kind of reasoning commences and gives a new kind of meaning. It is only by venturing across this limit and into the new territory that the limit itself may be recognized, often in retrospect. Hence my insistence that causes can be discovered, as numbers indicate a kind of

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117 The mathematical analogy is apt: the inflection point of a cubic function is where the concavity of the curve flips from one kind to another.
'first cause' in a purely formal structure. I admit, were the mind to pursue comprehensive knowledge of all causes for all things, it would be hopelessly overwhelmed. But certainly some of these causes can be discovered. Furthermore, I think they can be brought under the domain of scientific knowledge. The reason why I think this is because the limit of coincidence can never be absolute but only relative to the kinds of causes that we are presently prepared to deal with (particularly in the West, according to Jung). What the Kepler-Fludd polemic seems to prove is that the formal structures of mathematics play a role on both sides of the limit. From Pauli’s perspective, Fludd’s way of thinking appeared “as a correction of earlier one-sidedness”, which “could contain the germ of progress toward a unified conception of the entire cosmos of which the natural sciences are only a part.” But this unified conception of the cosmos also has a number: 4. Pauli supposed that “the ‘quaternary’ attitude of Fludd corresponds, in contrast to Kepler’s ‘trinitarian’ attitude, from a psychological point of view, to a greater completeness of experience.” The greater completeness is the very principle of discovery, as in Kepler's epiphany. In order to account for phenomena such as this, we can either posit a transcendent God responsible for the enlightenment, or we can examine the form of the epiphany for possible causes, however unlikely they may be. It is this latter method that approaches a truly scientific way of understanding the deeper ‘unknowables’ of human experience. Absolute systematicity must include within itself the decidedly unsystematic, non-rational, ‘unconscious’ dimension of human beings. It is from this mysterious dark region that the seeds of rational knowledge are sown, as acausal meaning can, over time, become causal.

4. The Head and the Tail

There is a remarkably concise metaphor from the polemic that will help to clarify my position. It is the metaphor of the tail and the head:

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118 Pauli (1952), pg 209
119 Pauli (1952), pg 206-207
Fludd: “[Kepler] excogitates the exterior movements of the created thing whereas I contemplate the internal and essential impulses that issue from nature herself; he has hold of the tail, I grasp the head; I perceive the first cause, he its effects.”

Kepler: “I reflect on the visible movements determinable by the senses themselves, you may consider the inner impulses and endeavour to distinguish them according to grades. I hold the tail but I hold it in my hand; you may grasp the head mentally, though only, I fear, in your dreams.”

In his rebuttal, Kepler captured the complementarity of his entire confrontation with Fludd. Each side is aware of the other but nonetheless believes that they are right. What is at stake here is how scientific knowledge should inform our conception of objectivity. The point I want to make is that scientific knowledge begins at the head and ends at the tail; to hold it in your hand is to know the cause. However, this is not the exclusive measure of objectivity just as the limit of coincidence is not the limit of rational investigation. When Kepler (and his sceptical cohort) found they could not grasp Fludd’s system in their hands, they judged it unworthy of the same ‘epistemic status’ as their own work. But Fludd did not craft his system to be held in this way—he was investigating the first cause, the internal impulses and the very theory of calculation rather than its practice. The objectivity of his work comes from the indefinite meaning of a theoretical logistic, i.e. the expression of opinions and beliefs through the manipulation of identical, noetic units. It is the latter, formal structure that makes these subjective elements objective, in a way that is truly comparable to the objectivity of Kepler’s astronomical laws. What obscures this comparison is the difference between the definite meaning of a cause and the indefinite meaning given by its (apparent) absence. The absence is not only apparent, it is in all cases illusory; a truth nowhere more obvious than in arithmetic.

I’ve been defending the position that I think best represents Fludd’s worldview and the full impact of his system. The most expedient way to do so has been to oppose causality and intentionally challenge the edifice of natural science. But I realize that this is a monumental undertaking that cannot

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120 Quoted in Pauli (1952), pg 196-197
121 Quoted in Pauli (1952) pg 200
be done so easily. I will make a few remedial statements to assure the reader that this opposition is not wholly destructive but actually forms a complementary relationship with the orthodox scientific worldview. This was Pauli’s vision and I believe it is the right one. The issue lies more with Jung’s principle of synchronicity, which naturally incurs a certain suspicion. Jung claimed that the existence of acausal events, “follows logically from the premise of statistical truth.”¹²² The resulting picture of the world is one where acausal miracles punctuate a stream of dull causal chains.¹²³ The common sense notion of coincidence is totally absent from this picture. There is no theoretical basis for lotteries, bingo or the gambler’s fallacy. What Jung seems to have sacrificed is the belief in chance as a universally random force that is strictly indifferent to the psychological dispositions of human beings. If only we were to investigate with sufficient thoroughness, we would eventually discover the causes for winning the lottery and would thereby have reduced the lottery to a deterministic process.

The real problem here is that the introduction of acausal meaning implies that every event is potentially meaningful, to the point where experience becomes supersaturated in metaphor. Here is the true threat of delusion—to look for patterns and to be undeniably successful! Even if every event can be meaningful and every pattern can be found, it does not follow that we ought to be striving for those meanings and these patterns. At a certain point, it is plainly impractical—the limit of coincidence has been overshot, with the other side fading out of view. Many genuinely inspired ideas become hopelessly trapped in their own musings, as a browse through certain online blogs and forums will reveal. And it is fair to separate the wheat from the chaff on a pragmatic basis, i.e. those patterns that make a difference. However, the ‘inspired’ ideas can never be stripped of their objectivity. Just because they cannot be held ‘in hand’ does not mean they are wrong; the causes are merely hidden, occult, private. As such, they are the seeds of knowledge rather than the flower. Finding patterns is really the easy part, as it arises through an instinctual capacity of the primitive mind. Learning to control this capacity is what turns it into a proper intuition, seeking the right patterns. New-age thinkers

¹²² Jung (1952), pg 8
¹²³ What has been called ‘occasionalism’; the view that Leibniz associated with Fludd.
and spiritual writers tend to take number-patterns seriously for this reason.\textsuperscript{124} Though they have recognized an important feature of human knowledge, they are (most often) unequipped to communicate it effectively, in a way that could approximate a science. We have seen in Fludd’s work a serious effort to accomplish just this task, which is why the Kepler-Fludd polemic belongs primarily to the history of science.

The one change that needs to occur is this: whenever something happens ‘by chance’, this explanation says nothing informative about the world or the event itself but is only the admission that we are not interested in discovering its cause at the present time. It is either too much effort or too irrelevant. But the cause is there, as a matter of principle, waiting to be discovered (no matter how long it takes). With this realization comes a renewed sense of intellectual freedom—where do you find your causes? As the figure of Philosophy explained to Boethius, “If one were to define chance as the outcome of a random movement which interlocks with no causes, I should maintain that it does not exist at all, that it is a wholly empty term denoting nothing substantial; for since God confines all things within due order, what place can be left for random processes?”\textsuperscript{125} The point is not to get rid of chance altogether but to recognize it for what it is. It is like the void, nothing, or Fludd’s darkness. It is there to oppose the light. Synchronicity is here to oppose the typically dismissive appeals to chance in everyday life. The common coincidence, once thought to be just that, is now recognized as meaningful just because it has no immediately conceivable cause. The event itself has not changed, nor has our original perception of it. We are simply paying attention to a fact of experience that had been previously tuned-out. Jung wrote that the many examples in his essay were not intended to serve as evidence. Rather, they are ways of illustrating that “our conception of causality is incapable of explaining the facts.”\textsuperscript{126} The facts are the coincidences of everyday life.

\textsuperscript{124} A browse through the occult section at any major bookstore will confirm this.
\textsuperscript{125} Book V, Ch. 1, 8-9 in Walsh (1999) pg 96
\textsuperscript{126} Jung (1952), pg. 44
Bibliography

All figures (except Figures 14, 18 and 27) are from Robert Fludd's magnum opus, published in two tomes over 5 years (but never brought to completion):


Figure 14 was created by myself using Microsoft Powerpoint.

Figure 18 is originally from Fludd’s correspondence with Kepler but was republished in:

Fludd, Robert. *Anatomiae amphitheatrum effigie triplici, more et conditione varia designatum*. Johann Theodor de Bry, Frankfort, 1623.

Figure 27 is found in:


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*Essays cited*

Field, Judith. “Kepler’s rejection of numerology.”


Rosen, Edwards. “‘Kepler's attitude toward astrology and mysticism.’”

