

The True Beauty and Mystics in Melencolia I

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Abstract. "*Melencolia I*" an engraving created in 1514, during a period of profound intellectual and cultural ferment known as the Northern Renaissance by the German Renaissance artist Albrecht Dürer, has intrigued scholars, artists, and enthusiasts for centuries with its rich symbolism and enigmatic composition. Its themes of human frailty, intellectual ambition, and the quest for meaning resonate as strongly today as they did in Dürer's time, ensuring its enduring relevance in the annals of art history. Scholars have proposed myriad theories about the significance of these symbols, ranging from reflections on the nature of creativity and the melancholic temperament to speculations about the artist's spiritual struggles and intellectual pursuits. Beyond its symbolic richness, "*Melencolia I*" is celebrated for its compositional complexity and technical virtuosity. Dürer's meticulous attention to detail is evident in every line and shading, while the intricate interplay of light and shadow adds depth and dynamism to the scene. The result is a work that rewards prolonged contemplation, inviting viewers to immerse themselves in its mysteries and discover new layers of meaning with each encounter. Despite the passage of centuries, "*Melencolia I*" continues to captivate audiences with its timeless appeal. Its themes of human frailty, and intellectual ambition show Dürer's great eagerness to seek knowledge and his persistence. By doing this way maybe the artist would search out the real truth.

Keywords: Beauty; Polyhedrons; Intellectual World; Knowledge.

1. Introduction

As the soul of the German Renaissance, Albrecht Dürer was the first German artist to achieve world renown, and the first northern artist to cross the Alps to witness the fruits of the Italian Renaissance and to be deeply influenced by it [1]. He saw himself as both a student and a missionary of the Italian Renaissance. As a result, his position in the history of Renaissance art and the distinction between northern artists in the same region at the time are very prominent. Especially the greatest engraving—"Melencolia I" is one of the most enigmatic and celebrated works of art during the Renaissance period. Although the creative time was 1514, the mysteries that existed remain a subject of scholarly debate, even inviting various interpretations regarding its symbolism and meaning. So this paper is aimed to delve into the intricate details of "*Melencolia I*", furthermore digging out the deepest meaning hidden.

2. Dürer's Aesthetic Theory

Albrecht once wrote many great books that were meant to teach the apprentices the skills of making outstanding artworks, like *Vier Bücher von Menschlicher Proportion* et cetera; furthermore, through those books, they also showed the Dürer's views on beauty. For instance, in the *Vier Bücher von Menschlicher Proportion*, Dürer demonstrated the concept of aesthetics through the theoretical study of practiced art, that there is a complex and interactive relationship between aesthetics and practical artistic knowledge in nature as well [1]. So under this condition, the *Melencolia I* is not just an engraving, but also an indication of beauty from Dürer's perspective. Back to the *Melencolia I*, if one want to know more about the deep meaning within the engraving "*Melencolia I*" which is a masterful exploration of the melancholic temperament and its profound connection to creativity, first, one needs to study its implicit topic-beauty. In Patrick Doorly's paper, he talked about how *Melencolia I* is based on the dialogue between Socrates and Hippias. In Plato's *Greater Hippias*, the argument goes around what is beauty. Socrates asked Hippias: "What is beautiful?" Then Hippias took many

examples, like mares, pots, girls, and all that. But what Socrates was seeking was the true nature of beauty, or in other words, the thing that added to any kind of thing to make that thing beautiful [2]. Thus, to Dürer's, the real beauty exists within those artworks created through scientific ways and reproducing the essence of nature. And later, Socrates said: "In well-regulated cities, excellence is held in the highest regard." That is a point should pay attention to. Back to Dürer's work, he once wrote: "he (refer to any artist) who would make anything aright must in no wise retract aught from nature, neither must he lay what is intolerable upon her.... let every man beware that he makes nothing impossible and inadmissible [3]. As the former paper already dug out that Dürer wanted to show the later artists if want to accomplish excellent artwork, you need to follow the example of nature which indicated the same standard between organizing the cities and completing outstanding work-following the highest criterion. The former is well-regulated, while the latter is natural. What's more, the same thing that existed in both *Greater Hippias* and *Melencolia I* is the milestone. In the talk, ".....I cannot make you hear what I say any more than if you were a stone sitting beside me, and a millstone at that, having neither ears nor brains....." [3]. In the *Melencolia I*, the millstone is in the center, propping the putto seated. Using Socrates' words, the millstone is without ears and brains. However, Dürer added the extra figure without the competence of literacy above the millstone. So through all of these clues, it can be deduced that Dürer would depend on the *Greater Hippias*, and then performed secondary creations about "What is beautiful itself". And linked the beauty with melancholy, it showed that melancholy was not merely seen as a mood but as a complex state of being associated with introspection, intellectual depth, and spiritual longing. In the 15th century, artists were inspired to use scientific methods to create artworks, like sfumato and perspective. So to Dürer, the correct proportion which was the actual beauty in Dürer's opinion must be displayed. Connecting all the threads, Dürer used the depiction of *Melencolia* to exhibit the beauty through his mind, basing the topic on *Greater Hippias*. All the objects scattered around the main figure also represent the other definition of beauty. Besides the *Greater Hippias*, still need to emphasize Dürer's own aesthetic standards artists need not abandon the depiction of ugly things. Dürer establishes rules for the shape of beauty, emphasizing in particular that it is not necessary to pursue shaping beauty all the time [3].

3. The Mystic Polyhedrons

3.1. 3.1. Preparatory Sketch and Geometric Analysis

Albrecht Dürer's "*Melencolia I*" is a captivating engraving that has fascinated scholars and art enthusiasts for centuries. Created in 1514, it is rich with symbolism and complexity, with one of its most intriguing elements being the polyhedron depicted in the background. Explaining the significance of polyhedrons in "*Melencolia I*" requires delving into the context of the artwork, the historical significance of polyhedrons, and the symbolism imbued by Dürer.

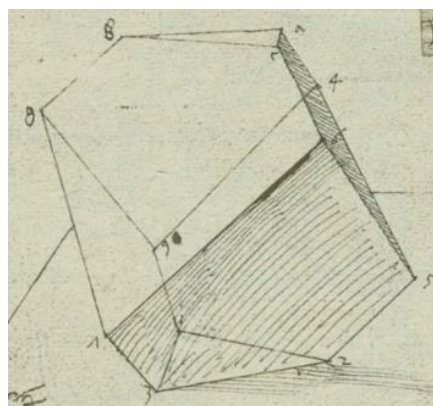


Figure 1. Preparatory Sketch for "*Melencolia I*" Dürer, 1905 [4]

3.2. The Mysterious Angle in Dürer's Artworks

Before talking about the polyhedron in front of the ladder, the figure.2 - a preparatory sketch (Fig.1) drawn by Dürer with the same polyhedron is known in pen and brown-black ink. It can be assumed as a preliminary sketch for the solid of “*Melencolia I*” engraving because the position and orientation of the truncated polyhedron are similar to the one in *Melencolia I*. In addition, The base is also a flat polyhedron structure with five-sided basal faces. This sketch is linked to Dürer’s idea of perspective geometry (especially from the eye at the top of the drawing). The perspective of both sidelines of the basal polyhedron structure reaches the “eye” point at a 72° angle [5]. Also, the 72° angle is identical to the angle of the ladder. So it can be inferred that Dürer used this typical angle to construct the basic composition of *Melencolia I*.

3.3. The Mathematical Analysis of Polyhedrons in Melencolia I

If want to resolve the shape of this polyhedron, required to focus on the Four books on Human Proportion written by Dürer. The the second book in this series, he listed various plans of regular polyhedrons, from triangle to 16-gon in a logical order [6]. When Dürer talked about the octagon(Fig.2)-“Now it is proper to show how to construct an eight-cornered figure. Using the preceding figure, retain the side bd and divide the arc above it into two halves. Mark the midpoint f. Then connect f and d and it will give you one side of the eight-cornered figure. To obtain a sixteen-cornered figure, divide the arc fd into two halves and mark the midpoint g. The line connecting g and d will represent one side of the sixteen-sided figure. This is demonstrated in the three figures below.” [7].

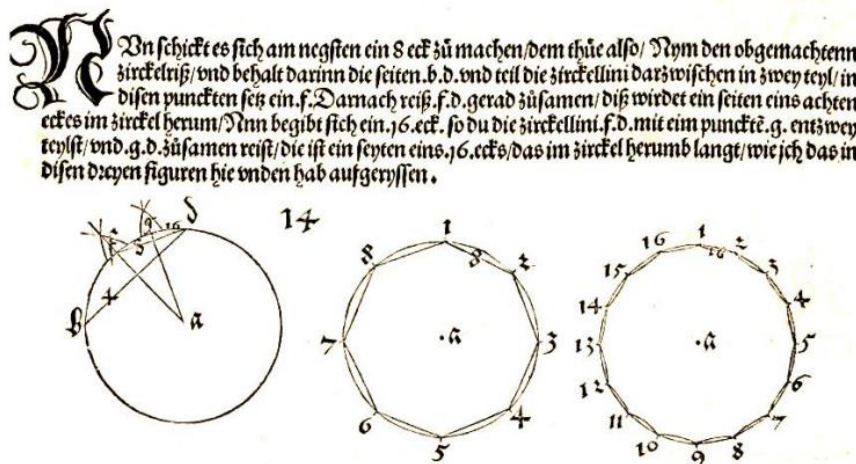


Figure 2. The Regular Octagon in “Underweysung der Messu” [8]

Although Dürer successfully designed the regular octagon, how could it transform something two-dimensional into three-dimensional? In one paper written by John Sharp, he first introduced the floor plan of the Pentagon, linking it to the Polyhedron Data[“Dürer’s Solid”. As it can see the visible part of the figure of the polyhedron shows 4 faces, 10 vertices, and 13 edges [6]. Other than the above-mentioned description, if Durer didn’t want this figure topple over, there must be at least one other vertex on this bottom face, which means the polyhedron must have at least 11 vertices. So with the method used by Terence Lynch (1982), he succeeded in developing the 3-D model of the polyhedron. he succeeded in developing the 3-D model of the polyhedron (Fig.3). This typical transfiguration is rooted in the floor plan of the symmetrical hexagon. The symmetry and the view of the perspective say that the top and bottom triangles are equilateral (of side two units), thus giving a hexagonal view [7].

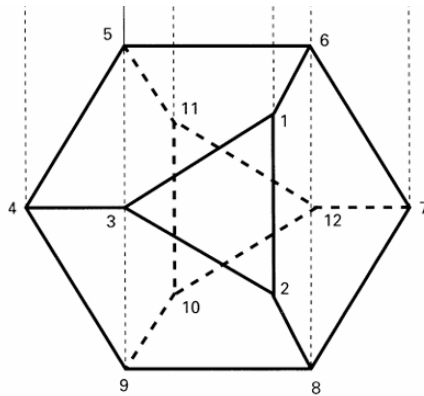


Figure 3. The Octahedron's 3-D model [8]

Back to the engraving itself, at the forefront of understanding the polyhedron in "*Melencolia I*" is grasping its significance within the broader context of Renaissance thought and intellectual pursuits. As all already know the Renaissance was a period marked by a fervent interest in rediscovering and understanding classical knowledge, particularly in the realms of art, science, and mathematics. This era saw a revival of interest in geometry, spurred in part by the translation and dissemination of ancient Greek texts.

So after analyzing the polyhedron from a mathematical angle, the polyhedrons, as three-dimensional geometric shapes bounded by polygonal faces, held a special fascination for Renaissance scholars and artists. In "*Melencolia I*", the polyhedron serves as a focal point amidst a dense array of symbolic elements. It hangs suspended in the background, occupying a central position within the composition. Its precise form, a truncated rhombohedron, is meticulously rendered, attesting to Dürer's skill as both an artist and a mathematician. The polyhedron's significance lies in its multifaceted symbolism, which resonates on both intellectual and allegorical levels. On one level, it represents the perfection and orderliness of the geometric world, embodying the ideals of balance and harmony that were central to Renaissance thought. Its regular faces and symmetrical proportions reflect the mathematical precision that underpinned the Renaissance conception of beauty and truth.

Moreover, the polyhedron serves as a metaphor for the quest for knowledge and understanding. Just as Renaissance scholars sought to unravel the mysteries of the natural world through observation and reason, so too does the polyhedron symbolize the pursuit of enlightenment and insight. Its multifaceted structure suggests the complexity of knowledge, with each face representing a facet of understanding waiting to be explored.

At the same time, the polyhedron in "*Melencolia I*" is laden with symbolic associations that extend beyond the realm of mathematics. Its presence with the other objects in the composition, including the winged figure of Melancholy herself, suggests deeper philosophical and metaphysical connotations. In Renaissance thought, melancholy was often associated with introspection, creativity, and the pursuit of knowledge, making it a fitting companion to the polyhedron as a symbol of intellectual inquiry.

Furthermore, the polyhedron's placement within the composition, suspended in mid-air and bathed in shadow, lends it an enigmatic quality that invites interpretation. Some scholars have suggested that its shadowy presence represents the limits of human understanding, hinting at the unknowable mysteries that lie beyond the reach of reason and perception.

Thus, under all the mathematical and philosophical meaning, the polyhedron in Albrecht Dürer's "*Melencolia I*" is a richly symbolic element that encapsulates many of the themes and concerns of Renaissance thought. As a geometric form, it embodies the ideals of order, harmony, and mathematical precision that were central to the intellectual climate of the time. Yet its presence within the composition also speaks to deeper philosophical and metaphysical questions, inviting viewers to contemplate the nature of knowledge, creativity, and the human condition. In this way, the polyhedron

serves as a testament to Dürer's mastery as both an artist and a thinker, and to the enduring power of his work to provoke thought and inspire wonder.

4. The True Meaning

In the 15th century in Europe, its historical background was marked by profound anthropocentrism. Besides, there was a strong link between science and culture. While this “scientific revolution” was correlated with religious respects, it remained immersed in an occultism atmosphere- esotericism and hermetic doctrines. Even in academia, people believe stars’ influence on human beings. Also, Renaissance medicine was convinced that astral impact was capable of directly affecting the physical and mental health of man. In the 16th century, the theory of the four senses of humor once was in vogue. Ficino, an exponent of spreading Renaissance Medicine, mixed medicine and magic, which was extremely normal during that moment. Additionally, Ficino was also a representative of Neoplatonism. So it is obvious that in the sixteenth century, it wasn’t possible to conceive of a medicinal science without interlacement with the esoteric. Added to this need to focus on another person-Cornelius Agrippa, who insisted on the idea that man only obtained knowledge about nature when they accepted magic as a mode of work and research. His book “Three Books of Occult Philosophy” mixes scientific medicinal knowledge with esotericism. Through Panofsky, he is convinced that Dürer was familiar with the works of Agrippa, especially his famous book aforementioned. As to the topic of melancholy, in ancient Greece, people held the belief that the notion of melancholy was a disease. The symptoms of the melancholy were regarded as a probable demonic manifestation. Yet in the Renaissance, melancholy was turned to another connotation. It was connected with the notion of “suffering and knowledge”.As Burton recalls if melancholy should be seen as a disease, then such a disease could only have come directly from God because it gives man wisdom and science [9]. So, the more the man knew, the more his intellect wished to know, therefore, a melancholy tended to invade the soul of the sage. During Dürer’s lifetime, He traveled to several European countries, including Italy, where he found artistic inspiration for his projects. During these trips, Dürer probably came into contact with the Florentine Neoplatonic school and was later heavily influenced by it. Panofsky also mentioned that Dürer like many other artists of his time, was convinced that the gift and artistic creation was a “grace” of God, making his work a kind of “divine” gift [10].

As the mysteries that existed in *Melencolia I* have always been the main issues in academia, how would combine the science and religion Dürer seeking to show in *Melencolia I*? In Panofsky's view, the engraving is “in a sense a spiritual self-portrait of Albrecht Dürer”. First, the subject of the picture is seated on a stone step a winged, brooding, somber-faced female figure holding her cheeks. She wears a wreath of flowers with her left hand resting on her chin, her right hand holding a compass, and her knees are padded with a heavy thick book. Besides, her waist dangled loosely a bunch of keys and a purse. According to Agrippa’s *Three Books of Occult Philosophy*, he introduced a trichotomy to tell the melancholy levels: The natural events-inferior spirits. Level 2-political events and disposition of sovereigns,etc-median spirits, they contributed to the knowledge of nature and human beings, natural science...Level 3 The superior spirits (religious event) lead to knowledge of divine secrets, notably angelology, and theology [10]. Therefore, the central figure-melancholy also Dürer himself with the pose showing contemplation, and the wings indicate her strong eagerness to enter the Intellectual World III, to seek for the true essence in the outer world. Also, the important information existed that meantime Dürer’s mother had died around 1514 [11]. So maybe the figure is also a way of memorizing his mother. Moreover, the keys and purse around the angel’s waist stand for power and wealth. At her feet, various tools were scattered about, like saws, planes, ink bottles, a sphere an irregular polyhedron, and others. All of them represented geometry and mathematics to different extents [12]. As already analyzed the octahedron, if it represents any of the Neo-Platonic Worlds, then its mathematical nature and its altitude in the picture unambiguously mark it as the Intellectual World III, the abode of Platonic Ideas and angels. The Octahedron is a puzzle that is unsolvable in principle but appears to solve itself in some views. It does not simply show off Dürer’s

mathematical muscle [13]. It declares that the Intellectual World may have a mathematical design, but if so that design is inaccessible. In the center of the painting is the ladder without seeing the upper end. So maybe the end is in heaven, or Intellect World III. Although it may be unable to catch God, what is more important is the endeavor and the knowledge have gotten during the process. Other than that, the magic square set in the masonry wall is filled with consecutive numbers. In the Occult Philosophy, Agrippa assigns a table in the ancient order. The table of Jupiter is 4-by-4 which is similar to the magic square in the engraving. So it means Dürer wanted Jupiter's table as a shield. However, He interchanged the first row with the last, and also the first column with the last. This changed the bottom line to 4 15 14 1 and this is the date 1514 of the engraving [11]. When one sees the background, the light and the bow and even the destruction of the city of evil are good news, they are the symbol of joy while the whole picture is shaded with the gloom of night. Only the moon behind lights the scene and creates the shadows and the moonbow [11]. What might have been a sunny prophecy for Leonardo is dark as night for Albrecht Dürer.

5. Conclusion

In a nutshell, Dürer's beauty is linked with geometry, perspective, anatomy, and other similar scientific ways. In addition, in *Melencolia I*, Dürer hides the true beauty within some geometric shapes, attempting to use polyhedrons to represent the mathematical beauty in nature. There, to Dürer, all the objects in *Melencolia I* concentrate on passing the message of the truth in nature. It is *Melencolia I* shows the combination of art and science in the 15th century in German. It can find something special in geometry or else. Although I haven't thoroughly analyzed the polyhedron, which means it's still a mystery, one can put the mathematical method into art, helping art become a more scientific subject. However, is *Melencolia I* indicating the spiritual self-portrait of Dürer as Panofsky said? Maybe can't represent Dürer himself to unravel the mysteries inside this engraving, but it can find out Dürer's influence on contemporaries or the true message Dürer wanting to pass is the motto: The lie is in the understanding, and darkness is so firmly entrenched in the mind that even groping will fail. In academia, the fixed conclusion of *Melencolia I* is around knowledge, astrology, and geometry. For now, mathematicians are trying to find out the mysteries within the different shaped polyhedrons. So to explore more from this greatest engraving requires the help of experts in various fields. But the main topic is clear about Dürer's pessimism.

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