Leonardo da Vinci's Creation Philosophy of Learning from Nature

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Abstract. Artists are intermediaries between nature and humans, as well as the reproduction of nature's creation. Leonardo da Vinci observed nature and life with a keen eye. He faithfully reflected the image of nature like a mirror and collected materials extensively. He formed a huge library of images in his mind and then made art. The basis of all this was his mastery of perspective, shadows, anatomy, zoology and botany. In addition to recreating nature, Leonardo seeks to reflect real social life and the human spirit. Artists should use reason as a guide to reflect nature, so that the work is both derived from and above nature, rather than "copying nature". Leonardo's paintings fully emphasize the creativity and divinity of art, which should be centered on the expression of man and his inner spiritual world. Obviously, Leonardo's creative principles and Aristotle's "theory of imitation" are in the same line, and he inherited the traditional view of ancient Greek art imitating nature, but did not limit himself to this. Based on his own creative practice experience, he summarized the creative law that art should not only "learn from nature" but also "transcend nature", and dialectically explained the aesthetic relationship between art and nature. This paper aims to analyze Leonardo da Vinci's creative methods and explore his creative philosophy from his works. Leonardo's creative ideas occupy an important place in the history of aesthetics and are worth learning from.

Keywords: Renaissance; Artists; Creative Philosophy; Naturalism.

1. Introduction

During the Renaissance, the ancient Greek theory of "art imitates nature" was reintroduced. Learning from nature became the program of action for Renaissance artists. In order to achieve the purpose of describing real nature, artists are not satisfied with feeling the world by their senses, but to understand the world with reasons. Artists use a combination of experimental and mathematical methods to observe people and the natural world. The combination of art and science is a prominent feature of this era.

The ancient Greek philosopher Plato argued that there are three kinds of "beds". The first is the concept of a bed in the human mind that was made by God. It is "the original". The second is the bed that a carpenter made in the real world. It's an imitation of God's idea that people can touch and feel, so the carpenter can be called a maker of the "bed". The third one is the bed drawn by painters in the art world. This bed is not an imitation of God's work, but a craftsman's work, a copy of an imitation. For Leonardo da Vinci, he intended to prevent artists from copying the second bed, but to learn from nature and become the very first imitator of nature and explore the scientific laws in nature.

Not only did Leonardo take nature as his teacher, but he emphasized the importance of science. Painters need to acquire knowledge of perspective, photography, human anatomy, and so on. They need to use science as a guide in their creation to faithfully reflect the form of nature. In the meantime, they also need science to enrich and combine with their imagination to create images that don't exist in the natural world [1].

Artists are intermediaries between nature and humans, as well as reproducers of natural creations, which is why a painter's spirit must be comprehensive. Only by learning from nature can he achieve this goal. Leonardo observed nature and life with his keen perspective. Like a mirror, he reflected the image of nature truthfully and collected materials extensively. He formed a massive image library in his mind, and then made artistic creations. The foundation of all this is his knowledge of perspective, shadow, anatomy, zoology and botany. This paper aims to analyze Leonardo da Vinci's creative methods based on his artworks and explore his creative philosophy.

2. Learning from Nature and Showing Nature

This paper takes the *Virgin of the Rocks* as an example to figure out how Leonardo learnt from nature and use science as a tool in his creation. From Leonardo da Vinci's works, people can know about the application of the above views. For example, in *Virgin of the Rocks* Leonardo accurately and vividly depicted the cave and other settings. He also employed light deftly to make the Virgin the focal point [2]. The background of a bright sky successfully set off the major characters, provided a sense of depth in space, and transformed the Virgin's picture into the personification of love.

Virgin of the Rocks by Leonardo da Vinci exists in two editions. One is housed in the Louvre, and the other is in London's National Gallery. However, there is substantial disagreement over whether Leonardo painted all or a portion of the National Gallery's artwork [3]. Geologist Ann Pizzorusso examined Leonardo's works of art from a geological standpoint. She compares the two versions' renderings of geological formations and comes to the conclusion that Leonardo did not paint the rocks in the piece on display at the National Gallery [4].

There is neither a throne nor the framework of a building in the painting. Leonardo places the figures in a cave among the rocks, and lets the landscape play an important role. He reflected the cliff in the clear water and decorated it with the leaves of various plants. Flowers and plants, water, cliffs, stalactites... The elegant and lovely image of the Virgin is in this atmosphere, and the landscape and characters are integrated. In the painting, the Virgin is in the middle, St. John is on the left, and the baby and the angel are on the right, forming a stable pyramid. Mary makes up the top of the pyramidal figure group by extending one hand to hug John and raising the other above the head of the Christ child in a blessing. John looks up at the Christ child while reclining with his hands together in prayer. The angel is supporting the Christ child as he sits toward the front of the picture and extends his right hand in a blessing gesture toward the kneeling John. The entire scene appears well-balanced and vibrant.

Leonardo drew this picture in the manner of smoke. He has created a fantastic environment here with these amazing rocks, which are harsh yet peaceful, cryptic and interesting, and which extend out into the distance before disappearing into the mist. *Virgin of the Rocks* has reached a new level in scientific realist and artistic adaption, marking the heyday of Leonardo da Vinci's creation [5].

In *Virgin of the Rocks*, the painter showed great interest in rocks and flowing water. It is worth noting that in this landscape, the painter used the principle of air perspective. He further created a new painting method called sfumato. "Sfumato" is, in Leonardo's own words, "blending colours, without the use of lines or borders. make people feel like they can see the air in the painting, and the depth of the picture space." The three-dimensional modeling requires that the light shines on the body, while the background is dark [6]. But for Leonardo da Vinci, this relationship is more complicated: "When we see an object that is darker than the environment, people find that it is brighter as it is farther away from us. On the contrary, when an object is brighter than the environment, it becomes darker as it is farther away from us."

3. Expressing People's Thoughts and Feelings

3.1. Paints from Reference Materials and Models

Carefully observe nature as the original material, artistic beauty is the concentrated expression of natural beauty. His famous paintings such as *Virgin of the Rocks* and *The Last Supper* are all based on solid basic sketching skills. It is known for its keen observation, and is particularly adept at employing diagonal lines of various densities to depict the minute variations in light and shadow. Each of his works is based on his sketches.

When he drew *The Last Supper*, he integrates different parts of different people to create the image of Jesus. The purpose of the sketch is to collect the most beautiful or characteristic details from nature as the original material for refining in practice, so that the beauty of art is the concentration of realistic beauty [7]. This is his way of creation. Leonardo da Vinci pointed out: " People's usual actions,

gestures and expressions must be compatible with their thoughts and feelings." He, therefore, believes that dynamics, gestures, and expressions are the best ways to show the characters' inner lives in a picture. *The Last Supper* is a great illustration. The human dynamics hypothesis of Leonardo da Vinci had a significant influence on later art theory and practice.

3.2. Expressing the Spiritual World of the Characters Is Important

Leonardo clearly stated: "A good painter should describe two main things—man and man's thoughts." This is actually a concentrated reflection of the emphasis on the human-centered zeitgeist in the field of painting. It was under the guidance of this idea that da Vinci engaged in the study of human proportions and human anatomy with great enthusiasm and energy in theory, and emphasized that painters should go deep into life to observe people's vivid gestures and expressions. He advocated that painting requires not only form, but also divine likeness, and that the dynamics of the portrait should express the "intention of the heart" of the character. He said:" The most important problem in painting is that each character's actions should express its mental state, such as desire, ridicule, anger, pity, etc." A character who best expresses his excitement with his movements deserves the most praise. These insights were undoubtedly a powerful blow to the medieval ascetic theory of art, which brought new life to art. In Leonardo's pen, the portrait no longer has the abstract dull, rigid face of medieval painting, but a living person in real life.

4. Expression of Human Posture

If a painter wants to be good at designing human gestures, it is necessary for him to understand the structure and anatomy of tendons, bones and muscles. As a firm humanist in the Renaissance, like other creative geniuses of his time, Leonardo da Vinci was very interested in studying the human body's structure and thought that the human body was the most ideal creation of nature. The idea that "man is a small universe" dominated the artistic practice of the Renaissance. Anatomy is necessary knowledge for the true expression of human posture.

Anatomy was very important to Leonardo, and he spent more than 40 years studying it, starting at Verrocchio's workshop and continuing into his senior years. Leonardo believed that human anatomy was the key point to understanding human dynamics, and movement is the source of all life, and it could express the intention of life in the best way [8]. Almost all of Leonardo's works show the inner world and his desire to depict emotions, especially in St. Jerome. In the picture, people can see his knowledge of anatomy.

If a painter wants to be good at designing human gestures, it is necessary for him to understand the structure of tendons, bones and muscles. In the painting, the saint is withered and ashamed, and prays for forgiveness. At the same time, his right arm is stretched and intends to hurt himself with stones in his hand. Though a sinner, there was still power in the eyes of Saint Jerome in the wilderness.

4.1. Anatomy and Leonardo da Vinci

Leonardo’s study of anatomy was an attempt to get a better idea of how the human body was constructed and how it worked. Although it is unknown when Leonardo began to study anatomy, it is reasonable to assume that his interest in the subject was piqued while he was an apprentice in Verrocchio's bottega in Florence. Drawing numerous studies of muscles, tendons, and other apparent anatomical components, Leonardo swiftly developed a mastery of pictorial anatomy. Leonardo's anatomical drawings contain several studies of the human skeleton and its components, as well as of muscles and sinews. He conducted research on the skeleton's mechanical operations and the muscle forces acting on it that foreshadowed the field of biomechanics as people know it today. Leonardo also paid special attention to and documented how aging and human emotion affected physiology, particularly the impacts of wrath. Many of the characters he depicted had obvious facial deformities or symptoms of the disease.

4.2. Saint Jerome in the Wilderness and Anatomy

Leonardo's efforts paid off. His knowledge of anatomy resulted in many masterpieces. The *Mona Lisa*, his crowning achievement and arguably the most recognizable painting in the world, is regarded as his finest creation, and his *Vitruvian Man* drawing also enjoys a high reputation. Leonardo's many works show his firm knowledge of human body structure, including those unfinished works like Saint Jerome in the Wilderness.

In an oil drawing for an unfinished painting, Saint Jerome is depicted retiring to the Syrian desert in his later years, where he lived as a hermit. The saint is shown kneeling in a rocky environment and gazing toward a crucifix that is discernible in the painting's upper right corner. Jerome's face, haggard from fasting and penitence, is at a three-quarter angle. His eyes show drive and willpower at the same time. He is typically depicted holding a rock in his right hand and beheading himself as penance. The lion, whom he trained to be his friend after removing a thorn from its paw, is sitting at his feet. The saint's traditional symbols include a lion, a stone, and a cardinal's cap.

On the left side of the panel, Leonardo painted a lake surrounded by rugged mountains that were shrouded in mist. The sole distinguishable landmark on the right is a barely drawn chapel that can be seen through the crack in the rocks. Jerome's status as one of the Doctors of the Church in Western Christianity may be hinted at by the church's presence. The saint's oblique trapezoid form is used in an inventive composition for the artwork. The lion's sinuous form, which forms an "S" across the bottom of the painting, contrasts sharply with the angular forms. Additionally, Jerome's Latin translation of the Gospel of Mark includes the lion as a symbol of strength and might. Saint Jerome's shape is a precursor to the Virgin Mary in the Virgin of the Rocks. The depiction of the neck and shoulder muscles is regarded as Leonardo's earliest anatomical sketch.

Leonardo began working on his most sorrowful picture during a trying time in his life, soon before leaving for Milan in 1482. Saint Jerome in the Wilderness is a magnificent visual depiction of the artist's emotional anguish at the time, despite the fact that it is only partially completed. In order to express his emotions, Leonardo designed his hero according to the structure of tendons, bones and muscles. Leonardo started this painting in the 1480s, but only after he learned about the shape of the sternocleidomastoid muscle on the human's neck in 1510s, did he finish that part of his work, which made this painting also notable for how well it demonstrates Leonardo's anatomical knowledge. The picture of a saint in his or her old age withdrawing to the wilderness as a penitent was clearly represented through the accurate drawing of the cheek and neck muscles that cover the saint's muscles and bones in this incomplete painting. Such subtleties can only be depicted by an anatomically knowledgeable painter [9].

4.3. Leonardo's Influence on Renaissance Anatomy

Leonardo, one of the greatest artists in history, is generally referred to be the founder of the High Renaissance [10]. A few of the qualities that distinguish Leonardo's work include his inventive painting techniques, in-depth knowledge of anatomy, light, botany, and geology, interest in physiognomy and how people express emotion through expression and gesture, innovative use of the human form in figurative compositions, and subtle use of tone. He emphasized the importance of science, and hold the idea that painters need to acquire knowledge of perspective, photography, human anatomy, and so on. They need to use science as a guide in their creation to faithfully reflect the form of nature. In the meantime, they also need science to enrich and combine with their imagination to create an image that doesn't exist in the natural world. With this point, Leonardo went beyond being a painter. As an engineer, he conceptualized weapons of war, flying machines, water systems, work tools, and the double hull. And he also became known for his substantial discoveries in anatomy. Leonardo himself claimed to have dissected 30 bodies during his lifetime.

Leonardo combined anatomical and physiological studies even though his early anatomical studies mostly concentrated on the skeleton and muscles. Prior to examining how each bodily part functions when the body is moving, Leonardo first studied the human body's static structure. This eventually led him to investigate the internal organs. He was particularly interested in the brain, heart, and lungs

among them as the "motors" of the senses and of life. The famous anatomical drawings, which are among the most important contributions to Renaissance science, include the results of his study. A relationship between natural and abstract representation serves as the foundation for the drawings. He used sections in perspective, replicated muscles as "strings," indicated hidden components by dotted lines, and created a hatching method to portray body parts in transparent layers that allow an "insight" into the organ. Over 240 intricate drawings, including those of the heart and vascular system, the sex organs and other internal organs, as well as one of the earliest known scientific depictions of a fetus in utero, were created by Leonardo. He also penned nearly 13,000 words in an anatomical book. However, Leonardo's Treatise on painting only included a small portion of the anatomy information.

5. Conclusion

Leonardo da Vinci was a natural scientist and philosopher whose worldview is closely related to materialism. Leonardo held the view that knowledge comes from feeling and that everything in nature is subject to the law of inevitability. Leonardo also emphasized the significance of theoretical generalization. People must begin with their own experiences and learn about the causes of those experiences.

Leonardo inherited and developed the "imitation theory" of ancient Greece and Rome, emphasizing the teaching of nature and opposing the detachment from nature to copy the works imitated by others. Imitating nature requires re-creation, and it is necessary to express nature in the artist's mind. Leonardo of the Arts Renaissance demanded that rational thinking be added to the reinvention of nature. Reproducing nature does not mean copying it. In order to disclose the rules of nature and produce artistic images that nature does not have, artists should employ reason and imagination to compare, select, and manipulate objective objects in their works of art.

In the same way, Leonardo valued the expression of human thoughts and emotions, and valued the beauty of the human body. Leonardo used science to know, and to draw. But it does not mean that the combination of painting and science makes the painting lose its artistic value. On the contrary, because the artist has a scientific mind, it strengthens the expression of the painting. The works such as "Virgin of the Rocks" mentioned this time are powerful proof.

Although Leonardo is an artist and scientist, he still did not equate artistic creation with science. His drawings are not scientific atlas. The development of "imitation theory" in the Renaissance not only emphasized the source of art from nature, but also aimed to express "art above nature". His inheritance and development of "imitation theory" has a profound impact on the art and science of later generations. With Leonardo da Vinci's paintings, art in the Renaissance reached its artistic peak, and their efforts also paved the way for the later development of science and art.

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