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RESEARCH REPORT

Science in the Art of the Italian Renaissance II: Leonardo Da Vinci's Representation of Animals in His Works¹

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ABSTRACT. Leonardo Da Vinci combined science and art in a number of his works and studies. This combination of science and art is very evident in the depiction of animals in his works. Leonardo studied both the anatomy and physiology of animals in order to render them with scientific precision. This included dissections of numerous animals and studies on their movements in nature. Leonardo Da Vinci, unified science and art, as is evident in the realistic and scientific depiction of animals in his works.

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INTRODUCTION

Leonardo Da Vinci, the great artist and scientist of the Renaissance, showed a keen interest in nature in his works. His interest not only manifested itself in his drawings and paintings, but also in his scientific inquiries. This interest is evident in the many observations and writings Leonardo made on such varied subjects as botany, zoology, human anatomy, comparative anatomy, physiology, and geology (MacCurdy 1958). His interest in animals is evinced by the exact realism and life given to animals in his works of art. This exacting nature is also obvious in one of Leonardo's most complete treatises. This treatise, *On the Flight of Birds*, is considered the first "systematic analysis of the principles of flight" (McLanathan 1966). Leonardo's interest in birds, among other animals, was likely formed during his youth. His fondness of animals was so great that he was rumored to buy caged birds and free them (Vasari 1946). Leonardo made many studies of animals, with cats, dogs, and horses as frequent subjects. In order to compose many of his studies, Leonardo relied on close observation of the animal and at times dissections of their underlying features. Leonardo would use these dissections of animals' body parts to compare them with human body parts. Leonardo compared the arms of men and monkeys and the legs of men and horses (Clark 1988), and by doing so became a pioneer in comparative anatomy. The interest that Leonardo showed in animals, and in their energetic and realistic depiction, was unique in his time. Other Renaissance artists, such as Michelangelo and Raphael, were more interested in the humanity and divinity represented in their works. Leonardo, while not neglecting humanity and divinity, put nature in a more elevated position than other artists of the day. The naturalistic and energetic depictions of animals in the art of Leonardo Da Vinci stemmed from his love for animals and his dedication to scientific inquiry.

DISCUSSION

Before examining a number of the paintings that

Leonardo made that featured animals, it is informative to examine his sketches and other works. Leonardo was known to keep collections of animals for study. These animals, including lizards, hedgehogs, newts, and snakes, were used to construct a shield with a monstrous face (MacCurdy 1958). Leonardo also made a mechanical lion that sprouted lilies (Vasari 1946), and he attached wings, a beard, and horns to a lizard to make it into a monster (Vasari 1946). These flights of fancy once again show Leonardo's intense interest in the animal kingdom. Leonardo's many sketches and his virtuosity in making representations of animals also show this interest. A very interesting example of these studies is his silver point and pen study of twenty-seven cats and a dragon from 1507-8 (McLanathan 1966). This study shows cats in a multitude of poses, some solitary and some in interaction with other cats. The cats are finely drawn with a great amount of detail in each individual cat. The cats are indeed individuals, with a variety of types and expressions. Some of the cats have rather timid expressions while others look ferocious. The cats are involved in a variety of activities; some appear to be creeping across the ground while others are wrestling amongst themselves. Adding to their realistic depiction and activities is the great use of modeling and shadow. Each individual cat or group of cats has clear gradations of shade within their bodies and shadows falling below their bodies. The lighting source that creates the shadow appears to emanate from a different source for each cat or group. A very enigmatic portion of the study appears to be the dragon. It occupies a position in the midst of the cats, but does not directly interact with any of them. The same skill evident in the cats is also evident in this fantastic beast. This work clearly shows Leonardo's love and interest in cats (McLanathan 1966), as well as Leonardo's skill in depicting these animals.

Keeping with the theme of domesticated animals, Leonardo did a number of studies of dogs. One particular dog reappears a number of times in his works and is thought to be a member of Leonardo's household (McLanathan 1966). This dog is extremely realistic in nature. Individual hairs on its coat are obvious, claws are detailed, and the musculature of the dog's shoulder and leg is clearly defined. Furthermore, ligaments and tendons

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are also shown in the paw areas. Once again a light source creates different degrees of shadow on the dog's body.

Probably the animal most sketched by Leonardo was the horse. There is good reason for the profusion of studies of horses done by Leonardo. A number of Leonardo's projects, both realized and unrealized, had horses as part of their program. In 1481, Leonardo made a number of studies for his *Adoration of the Magi*. The studies included various views of horses. These drawings are extremely detailed, even showing creases in the necks of the horses and various aspects of the face of a horse. In the actual *Adoration of the Magi*, the horses are shown in dynamic action. These rearing horses would be a reoccurring motif in Leonardo's work (Clark 1988). Another of these projects was an equestrian statue for the Duke of Milan, Ludovico Sforza. The statue would be of the Duke's father, Francesco Sforza and would be very large in scale and done in bronze (Clark 1988). Many preparatory drawings were done for the monument, and Leonardo was determined to make a horse with ideal proportions. The envisioned horse would be rearing up on its back legs, a position never attempted in history for this type of statue (McLanathan 1966). The preparatory drawing from 1488 for this work shows the power that this work was intended to have. With the horse and rider in dynamic movement above a soldier that is about to be crushed, the completed work would have been impressive. Other studies show highly detailed views of the horse, as well as studies of how horses walk. However, the bronze version of this work was never cast, and a full-scale clay model was destroyed by archers (McLanathan 1966). The massive model was marveled over as a "great mass of inert matter [that] had been given form and life" (Clark 1988). In this work, Leonardo established a nobility for the animal second only to man, and hoped to create a union of antique art and mathematics (Clark 1988). Other works by Leonardo also included horses. These works include more detailed drawings and studies of horses rearing up on two legs for both the *Battle of Anghiari* and *St. George and the Dragon*. One of the studies for the *Battle of Anghiari* has the horse actually galloping (Clark 1988), once again showing Leonardo's interest in the movement and vitality of this magnificent animal. Even though works by earlier and later artists, such as Piero Della Francesca's *Battle of Constantine* (1454-58), Domenico Veneziano's *Adoration of the Magi* (1439-41), Sandro Boticelli's *Adoration of the Magi* (1470-73), and Giulio Romano's horses from the *Palazzo De Te* (1527-34), all show horses of detail and realism, none of them gives the vitality or action that Leonardo's horses have. This vitality stems from Leonardo's love of animals and his wish to show them in their full grandeur.

Although the most numerous and thorough depictions of animals are to be found in Leonardo's drawings, animals play a large part in a number of his paintings as well. In these paintings, Leonardo branches out and depicts such animals as the ermine, the swan, and the lamb. As in his depictions of cats, dogs, and horses, Da Vinci brings realism and vitality to the animals found

in these compositions. The first of these works is the *Portrait of Cecilia Gallerani* from 1483-8. This work shows the title woman holding an ermine, a member of the weasel family. The ermine is included in the portrait for two reasons. First of all, the Italian word for ermine is a pun on Cecilia's last name. Secondly, the ermine was a symbol of the lover of Cecilia and commissioner of the work, Ludovico Sforza (Clark 1988). The detail and precision with which the ermine is executed is once again incredible. The head is modeled expertly, giving the viewer the impression of the skull, the texture of the skin and the lay of the fur (Clark 1988). The musculature and other underlying features of the leg of the ermine are also brought out. The ermine also seems to echo Cecilia, both in pose and in their underlying demeanor. Their poses are similar, with both the woman and the ermine intently gazing to the right, their eyes fixed on something outside of the picture. The demeanor of the ermine as a sleek, alert predator seems to echo the demeanor alluded to in the representation of Cecilia. The inclusion of the ermine in the work seems to strengthen the picture's meaning, as well as its composition. Once again Leonardo has elevated the nobility of an animal and made it almost the equal of humans.

Another work that has an animal in a prominent position in it is the *Leda and the Swan*, done before 1504. Although the original by Leonardo is lost, there are numerous copies that show, at least in part, Leonardo's intentions (Clark 1988). The subject of this work is a mythological story in which Zeus takes the form of a swan and impregnates Leda. This was Leonardo's only mythological painting and was of a scene not depicted before and rarely depicted in later times. The reason Leonardo may have chosen this subject is to show the closeness of man to nature and the animals. In all of the copies of the work, nature is shown in its full glory. The vegetation is lush and the swan is lifelike, with a twisting neck. This twisting neck echoes the contrapposto of the beautiful, nude form of Leda. Leonardo clearly has a definite interest in the beauty of the swan in this work, an interest obvious also in his *Treatise on Birds*, where he refers to the swan as the "great swan" (MacCurdy 1958). Once again Leonardo synthesizes his scientific and artistic ability to create a representation of an animal that is not only realistic but also magnificent.

A final painted work in which Leonardo brings reality and grandeur to an animal is the *Madonna and Child with St Anne* from 1508-10. This pyramidally arranged work shows the Virgin, her mother St. Anne, the Christ child, and a lamb perched on a high escarpment. The figures are all relating to each other through both gazes and physical touching. Nature is once again important in this work, with a large tree in the middle ground and various geologic and aquatic features in the background. The infant Christ is grabbing the lamb, which as the sacrificial animal, symbolizes his death for the sake of mankind (Clark 1988). As with the other works, the lamb is highly detailed and realistic. The viewer gets a sense of the bumpiness of the lamb's coat by looking at the work. The lamb's foreleg also seems frozen in motion as it pushes out of the lamb's frame as if to walk,

The lamb is also shadowed, with a shiny feel to the fleshier or harder parts of the body. Once again Leonardo has given vibrancy and nobility to his animal subject. In the case of this work, the nobility is used to symbolize a manifestation of God who makes the ultimate sacrifice for mankind.

CONCLUSION

Leonardo Da Vinci's representations of members of the animal kingdom are stunning and almost unequaled. His use of scientific premises without losing expressive vitality in representing the animals is remarkable. His interest in animals is evident not only in his works of art, but also in his scientific and literary endeavors. Leonardo was equally skilled at drawing a horse, observing a bird in flight, or compiling a bestiary. His works elevated animals to a new grandeur not found in artists of his time and seldom in later times. Da Vinci's multitude of studies of animals showed he wished to know each of the animals in detail. Furthermore, his paintings that include animals show the connections between man and animal. Not only did Leonardo create numerous wonderful pictorial depictions of animals, but he also increased humankind's

knowledge in such fields as comparative anatomy and biophysics along the way. Vasari (1946), writing of Leonardo, comments "beauty, grace and talent are combined in such bounty that in whatever that man undertakes, he outdistances other men and proves himself to be specially endowed by the hand of God." This beauty, grace, and talent are all evident in the realism and grandeur of Leonardo Da Vinci's representations of animals.

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