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Leonardo da Vinci

Leonardo da Vinci (1452-1519) was an Italian painter, sculptor, architect, engineer, and scientist. He was one of the greatest minds of the Italian Renaissance, and his influence on the painting of the following generations was enormous.

Leonardo da Vinci was born on April 15, 1452, near the village of Vinci about 25 miles west of Florence. He was the illegitimate son of Ser Piero da Vinci, a prominent notary of Florence, who had no other children until much later. Ser Piero raised his son himself, a common practice at the time, arranging for Leonardo's mother to marry a villager. When Leonardo was 15, his father apprenticed him to [Andrea del Verrocchio](#), the leading artist of Florence and a characteristic talent of the early Renaissance.

Verrocchio, a sculptor, painter, and goldsmith, was a remarkable craftsman, and his great skill and passionate concern for quality of execution, as well as his interest in expressing the vital mobility of the human figure, were important elements in Leonardo's artistic formation. Indeed, much in Leonardo's approach to art was evolutionary from tradition rather than revolutionary against it, although the opposite is often true of his results.

Assistant in Verrocchio's Workshop

After completing his apprenticeship, Leonardo stayed on as an assistant in Verrocchio's shop, and his earliest known painting is a product of his collaboration with the master. In Verrocchio's *Baptism of Christ* (ca. 1475), Leonardo executed one of the two angels, a fact already recorded in the 16th century, as well as the distant landscape, and he added the final touches to the figure of Christ, determining the texture of the flesh. Collaboration on a major project by a master and his assistant was standard procedure in the Italian Renaissance. What is special is that Leonardo's work is not, as was usual, a slightly less skilled version of Verrocchio's manner of painting but an original approach altering it. It completely possesses all the fundamental qualities of Leonardo's mature style and implies a criticism of the early Renaissance. By changing hard metallic surface effects to soft yielding ones, making edges less cutting, and increasing the slight modulations of light and shade, Leonardo evoked a new flexibility within the figures. This "soft union," as [Giorgio Vasari](#) called it (1550), is also present in the special lighting and is emphatically developed in the spiral turn of the angel's head and body and the vast depth of the landscape.

Apparently Leonardo had painted one extant work, the *Annunciation* in Florence, before this. It is much nearer to Verrocchio in the stability of the two figures shown in profile, the clean precision of the decorative details, and the large simple shapes of the trees, but it already differs in the creamier modeling of the faces. A little later is Leonardo's portrait of Ginevra de' Benci, the young wife of a prominent Florentine merchant, in which her oily face with softly contoured lips is seen against a background of mysteriously dark trees and a pond.

Independent Master in Florence

About 1478 Leonardo set up his own studio. In 1481 he received a major church commission for an altarpiece, the *Adoration of the Magi*. In this unfinished painting, Leonardo's new approach is far more developed. A crowd of spectators, with odd and varied faces, flutters around and peers at the main group of the Virgin and Child, and there is a strong sense of continuing movement. In the background the three horses of the kings prance among intricate architectural ruins. However, the painting also illustrates Leonardo's strong sense of the need for a countervailing order: he placed in the center of the composition the Virgin and Child, who traditionally in paintings of this theme had appeared at one side of the picture, approached by the kings from the other side. Similarly, the picturesque ruins are rendered in sharp perspective.

The simultaneous increase in both the level of activity and the organized system which controls it will climax later in Leonardo's *Last Supper*, and it shows us his basically scientific temperament—one concerned with not only adding to the quantity of accurate observations of nature but also subjecting these observations to newly inferred physical or mathematical laws. In their paintings earlier Renaissance artists had applied the rules of linear perspective, by which objects appear smaller in proportion as they are farther away from the eye of the spectator. Leonardo joined this principle to two others: perspective of clarity (distant objects progressively lose their separateness and hence are not drawn with outlines) and perspective of color (distant objects progressively tend to a uniform gray tone). He wrote about both of these phenomena in his notebooks.

The *Adoration of the Magi* was, as noted above, left unfinished. In his later career Leonardo often failed over a period of years to finish a work, essentially because he would not accept established answers. For example, in his project for a bronze equestrian statue he began his work by delving into such matters as the anatomy of horses and the method by which the heavy monument could be transported from his studio to its permanent location. In the case of the *Magi* altarpiece, however, the unfinished state may merely result from the fact that Leonardo left Florence in 1482 to accept the post of court artist to the Duke of Milan. In leaving, Leonardo followed a trend set by the leading Florentine masters of the older generation, Verrocchio and Antonio Pollaiuolo, who went to Venice and Rome to execute commissions larger than any available in their native Florence.

Milan (1482-1499)

Leonardo presented himself to the Duke of Milan as skilled in many crafts, but particularly in [military engineering](#), asserting that he had worked out improved methods for shooting catapults and diverting rivers. Such inventions, as well as the remarkable machinery that Leonardo produced in Milan for stage pageants, point to his profound interest in the laws of motion and propulsion, a further aspect of his interest in living things and their workings. Again, this preoccupation differs from older artists only in degree.

Leonardo's first Milanese painting is the altarpiece *Virgin of the Rocks*. It exists in two versions: the one in Paris is earlier and was executed by Leonardo; the one in London is later, and there is controversy as to whether Leonardo participated in its execution. A religious brotherhood in Milan commissioned an altarpiece from Leonardo in 1483, and it is also a matter of argument as to which version is the one commissioned. Some scholars believe that

it is the London work and that the Paris version was painted while Leonardo was still in Florence. But this view requires some remarkable coincidences, and the more usual opinion is that the picture in Paris is the original one executed for the Milanese commission and that it was taken away by Leonardo's admirer the king of France and replaced in Milan by the second painting.

Although the *Virgin of the Rocks* is a very original painting, it makes use of a venerable tradition in which the Holy Family is shown in a cave. This setting becomes a vehicle for Leonardo's interests in depicting nature and in dimmed light, which fuses the outlines of separate objects. The artist once commented that one should practice drawing at dusk and in courtyards with walls painted black. The figures in the painting are grouped in a pyramid.

The other surviving painting of Leonardo's Milanese years is the [*Last Supper*](#) (1495-1497), commissioned by the duke for the refectory of the convent of S. Maria delle Grazie. Instead of using fresco, the traditional medium for this theme, Leonardo experimented with an oil-based medium, because painting in true fresco makes areas of color appear quite distinct. Unfortunately, his experiment was unsuccessful; the paint did not adhere well to the wall, and within 50 years the scene was reduced to a confused series of spots. What we see today is largely a later reconstruction, but the design is reliable and remarkable. The scene seems at first to be one of tumultuous activity, in response to the dramatic stimulus of Christ's words "One of you will betray me," which is a contrast to the traditional static row of figures. But the 12 disciples form four equal clusters around Christ, isolated as a fifth unit in the middle. Thus, Leonardo once again enriches the empirical observation of vital activity but simultaneously develops a containing formula and emphasizes the center. This blend of the immediate reality of the situation and the underlying order of the composition is perhaps the reason the painting has always been extraordinarily popular and has remained the standard image of the subject.

In its own time, the *Last Supper* was perhaps less well known than the project for a bronze equestrian statue of the previous Duke of Milan, on which Leonardo worked during most of his Milanese years. He wanted to show the horse leaping, a technical problem of balance in sculpture that was solved only in the 17th century. Numerous drawings of the project exist.

Besides apparatus for pageants and artillery, architectural projects also occupied Leonardo in Milan. He and the great architect [*Donato Bramante*](#), also a recent arrival at the court, clearly had a mutually stimulating effect, and it is hard to attribute certain innovative ideas to one of them rather than the other. The architectural drawings of Leonardo, very similar to the buildings of Bramante, mark the shift from the early Renaissance to the High Renaissance in architecture and show a new interest in and command of scale and grandeur within the basic harmonious geometry of Renaissance structure. No buildings can be attributed with certainty to Leonardo.

When Leonardo's patron was overthrown by the French invasion in 1499, Leonardo left Milan. He visited Venice briefly, where the Senate consulted him on military projects, and Mantua. He planned a portrait of Isabella d'Este, Duchess of Mantua, one of the most striking personalities and great art patrons of the age. The surviving drawing for this portrait suggests that the concept of the later *Mona Lisa* had already been formulated.

Florence (1500-1506)

In 1500 Leonardo returned to Florence, where he was received as a great man. Florentine painters of the generation immediately following Leonardo were excited by his modern methods, with which they were familiar through the unfinished *Adoration of the Magi*, and he also now had a powerful effect on a still younger group of artists. Thus it was that a younger master passed on to Leonardo his own commission for the *Virgin and Child with St. Anne*, and the monks who had ordered it gave Leonardo a workroom. Leonardo's large preparatory drawing was inspected by crowds of viewers. This theme had traditionally been presented in a rather diagrammatic fashion to illustrate the family tree of Christ; sometimes this was done by representing Anne, the grandmother, in large scale with her daughter Mary on her knee and with Mary in turn holding the Christ Child. Leonardo sought to retain a reference to this conceptual pattern while drawing sinuous, smiling figures in a fluid organic interrelationship. Several varying designs exist, the last version being the painting of about 1510 in Paris; this variety suggests that Leonardo could not fuse the two qualities he desired: an abstract formula and the immediacy of life.

During his years in Florence (1500-1506), even though they were interrupted in 1502 by a term as military engineer for [Cesare Borgia](#), Leonardo completed more projects than in any other period of his life. In his works of these years, the emphasis is almost exclusively on portraying human vitality, as in the *Leda and the Swan* (lost; known only through copies), a spiraling figure kneeling among reeds, and the *Mona Lisa*, the portrait of a Florentine citizen's young third wife, whose smile is mysterious because it is in the process of either appearing or disappearing.

Leonardo's great project (begun 1503) was the battle scene that the city commissioned to adorn the newly built Council Hall of the Palazzo Vecchio. In the choice of theme, the *Battle of Anghiari*, patriotic references and the wish to show off Leonardo's special skills were both apparently required. Leonardo depicted a cavalry battle—a small skirmish won by Florentine troops—in which horsemen leap at each other, churning up dust, in quick interlocking motion. The work today is known through some rapid rough sketches of the groups of horsemen, careful drawings of single heads of men which are extraordinarily vivid in suggesting immediate response to a stimulus, and copies of the entire composition. Leonardo began to paint the scene, experimenting with encaustic technique (the paint is fused into hot wax on the surface of the panel), but he was called back to Milan before the work was completed. A short time thereafter, the room was remodeled and the fragment was destroyed.

Both the *Battle of Anghiari* and the *Mona Lisa* contain their animation in neatly balanced designs. In the battle scene, the enemies are locked in tense symmetry; in the portrait, the crossed arms form the base of a pyramid capped by the head, which gives the lady her quality of classic rightness and prevents the less than full-length portrait from seeming incomplete and arbitrarily amputated at the lower edge.

Milan (1506-1513)

Called to Milan in 1506 by the French governor in charge, Leonardo worked on an equestrian statue project, but he produced no new paintings. Instead he now turned more and more to scientific observation. Most of his scientific concerns were fairly direct extensions of his interests as a painter, and his research in anatomy was the most fully developed. Verrocchio

and other early Renaissance painters had attempted to render the human anatomy with accuracy, but Leonardo went far beyond any of them, producing the earliest anatomical drawings which are still considered valid today, although he occasionally confused animal and human anatomy and accepted some old wives' tales.

The notebooks Leonardo was now filling with data and drawings, later piously arranged by his heirs, and the visual intensity that was always his starting point reveal his other scientific interests also: firearms, the action of water, the flight of birds (leading to designs for human flight), the growth of plants, and geology. Leonardo's interests were not universal: theology, history, and literature moved him little. All his interests had in common a concern with the processes of action, movement, pressure, and growth; it has been rightly said that his drawings of the human body are less anatomical than physiological.

Last Years

In 1513 Leonardo went to Rome, where he remained until 1516. He was much honored, but he was relatively inactive and remarkably aloof from its rich social and artistic life. He continued to fill his notebooks with scientific entries.

The French king, Francis I, invited Leonardo to his court at Fontainebleau, gave him the title of first painter, architect, and mechanic to the king, and provided him with a country house at Cloux. Leonardo was revered for his knowledge more than for any work he produced in France. He died on May 2, 1519, at Cloux.

His Influence

Leonardo's influence on younger artists was enormous; it is often said to have first affected his teacher, Verrocchio. By the time Leonardo left Florence in 1482, he had already begun to influence the city's most talented younger painter, Filippino Lippi, only 5 years his junior. During the 1490s Filippino and [Piero di Cosimo](#), another admirer of Leonardo, were the leading painters in Florence. In Milan, Leonardo overwhelmingly dominated a rather weak generation of artists, who were soon turning out smiling Madonnas in imitation of his style.

Leonardo's greatest impact came in Florence just after his return in 1500, when young artists already conditioned by the master's early work were able to absorb and transmit his message rather than merely copy the superficial aspects of his style. Fra Bartolommeo soon reflected this new approach, as did [Andrea del Sarto](#) shortly afterward.

On a subtle and more significant level, Leonardo at this time transformed the two greatest young artists to come in contact with him. Raphael came to Florence in 1504 at the age of 21, eager to increase his knowledge of perspective and anatomy, and he quickly revealed Leonardo's influence in his portraits and Madonnas; his results were less intellectual, psychological, and energetic and more coolly formal, but with Leonardo's vitality. About 1503 Michelangelo changed from a sculptor of merely grand scale to one whose figures are charged with energy. This may be seen in the contrast between Michelangelo's *David and St. Matthew*.

From this time on Leonardo influenced, directly or indirectly, all painting, as Vasari implies. His influence on science was much less, although his drawings may have been known to the

anatomist [Andreas Vesalius](#) and had an effect on his great publication of 1543. However, most of Leonardo's scientific observations remained unknown until the same questions were again investigated in later centuries.

Further Reading

Jean Paul Richter edited *The Literary Works of Leonardo da Vinci* (2 vols., 1883; 2d rev. ed. 1939). Two excellent books are Kenneth Clark, *Leonardo da Vinci: An Account of His Development as an Artist* (1939; rev. ed. 1967), which is relatively brief and emphasizes Leonardo's work as a painter, and Ludwig H. Heydenreich, *Leonardo da Vinci* (trans. 1954), which is more detailed and concerned with the definition of his personality. A collection of essays which shows all sides of *Leonardo's genius* is C. D. O'Malley, ed., *Leonardo's Legacy: An International Symposium* (1969). An illuminating collection of articles is Morris Philipson, ed., *Leonardo da Vinci: Aspects of the Renaissance Genius* (1966). Leonardo's scientific work is emphasized in Ivor Blashka Hart, *The World of Leonardo da Vinci: Man of Science, Engineer and Dreamer of Flight* (1962), and Richard B. McLanathan, *Images of the Universe: Leonardo da Vinci, the Artist as Scientist* (1966). A fine specialized study is Arthur E. Popham, ed., *The Drawings of Leonardo da Vinci* (1945). ?

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