Leonardo da Vinci: the drawings and the public response

Clare Hurley
21 April 2003

"Leonardo da Vinci, Master Draftsman," an exhibit at the Metropolitan Museum of Art, New York, January 22—March 30, 2003. With an additional 30 drawings by artists relevant to his development, particularly Andrea del Verrochio

Catalog of the exhibition edited by Carmen C. Bambach. Metropolitan Museum of Art/Yale University Press, 786 pp., $65.

A recent exhibition of 118 drawings and one unfinished painting by Italian Renaissance artist Leonardo da Vinci (1452-1519) attracted 350,000 visitors to the Metropolitan Museum in New York City.

The number was a record for a show of drawings. Visitors routinely waited upward of an hour and a half to get into the galleries, and once inside had to struggle among hundreds of other viewers to catch a glimpse at best of the small, delicate, undoubtedly precious drawings of a genius who lived half a millennium ago.

Cynics will suggest that those attending were merely drawn by a celebrated name. Or, pointing to attendance figures at other current "blockbuster" exhibitions in New York, they will contend that for certain layers of the population an appearance at certain art events is a kind of social obligation. None of this, however, explains either the numbers of visitors or the seriousness of their response to the works on display.

Can it be wondered at that people seek out an inspiring artistic experience with such intensity, almost desperation, at this particular moment in history? As hundreds of thousands of people poured into the Leonardo exhibition, the US government was busy preparing its criminal assault on Iraq and then unleashing it. Broad layers of the population instinctively grasp that a Leonardo, a Shakespeare, or a Michelangelo represents a different principle from the human element presently in power in Washington and elsewhere. Experiencing Leonardo's art in this context contains an inherent, albeit inarticulate, element of protest.

The choice of drawings and the particular nature of da Vinci as an artist are also significant. Drawings, more than finished works (such as paintings, sculptures), retain traces of the creative process at its most intimate and vivid.

Although da Vinci's *Mona Lisa* is probably the most famous single painting in history, the artist's legacy is best preserved in the vast number of sketches, diagrams and notes that have come down to us. If one includes every scrap, these number over 4,000 sheets. Considering the fragility of paper, this is miraculous, and probably due to many of these pages having been bound as notebooks.

By contrast, the number of his remaining paintings is at most 15, including finished and unfinished work, signed and unsigned. Two of his murals, one being the *Last Supper* in the Refectory of St. Marie della Grazie, in Milan, and the other in the Sale delle Asse, Castello Sforzesco, are so deteriorated as to offer only a hint of the original, due to unsuccessful experiments the artist made with varnishes. None of his projects for sculptures was ever realized.

It is not just an accident of circumstance that Leonardo's drawings more than his other projects form the basis on which we know him. *Disegno*, the art of drawing, was the crux of his artistic being, the medium most suited to his enterprise of observing the material world, not merely to reproduce it in art, but to explore and understand it scientifically.

The roots of Leonardo's draftsmanship are to be found in the workshop of his teacher/master Andrea del Verrochio, which he entered as a teenager in the 1460s. The quick sketch from life of different positions, the technique of *sfumato* —the soft, smoky rendering of form by means of shadow, and the mathematical approach to proportion and perspective were taught by Verrochio, and can be seen in his own drawings on display in this exhibit.

In the tradition set by Vasari in his *Lives of the Most Famous Painters, Sculptors and Architects*, Verrochio's ability has been downgraded in favor of the superiority of his pupil, but if one is honest, it is not see easy to tell which drawings belong to whom without reading the titles.

These early Renaissance artists still worked within the medieval guild system in which artistic production was governed by a standard set of technical skills more than by ideas of individual artistic genius, though the change in emphasis to the latter can be said to begin precisely with Leonardo. The development in the economic and hence social configuration realized over the course of the fifteenth century, which transformed feudal into capitalist modes of production, and the changing role of artists within this structure is complex and beyond our scope here. (For more on this aspect, Arnold Hauser's *The Social History of Art*, Vol II, Routledge, 1999 is particularly useful.)

Of most relevance here, and to today's viewers, is the often forgotten or misunderstood role played by skill in these drawings. We view these drawings as nothing short of miraculous, and the most common reaction in the exhibit was one of utter amazement that a human being could produce such renderings of reality in lines that still fairly bristle with life.

But Leonardo and others learned how to do this; they studied with and taught others. Their accomplishments may have been more or less individually successful, and Leonardo's drawings are more than just skillful, but the point is that they treated drawing as an attainable human ability, not as a manifestation of divine genius. Their endeavors were animated by a scientific, rationalistic approach, one that was not cold or soulless, but full of a passion to explore all of human experience and the visible world, and a belief in its ultimate comprehensibility.

Thus most of the material left us by Leonardo is in the form of notes, diagrams, sketches from observation, botanical and anatomical studies, technological plans for tools and weapons, "grotesques" in which the effect of changing proportions in the human face is explored, studies for paintings and sculptures, and more. To view them is to catch a glimpse of the creative process.

To take just one example, in *Studies of an Infant Holding a Lamb* (cat. No. 94), three sketches of a child holding a lamb are juxtaposed. The slight variation in the position of the head in each sketch (none of them are more than two inches high) lends each a mood both unique and exquisite. The painting for which this was a study, if it was ever executed,

is not extant, so we will never know which of these compositions the artist ultimately chose. Nor if we did, would it replace the effect of exploring these delicate modulations.

Also on this sheet are notes in Leonardo's right-to-left mirror writing, for which as a lefty he was famous. On the other side one finds more notes, a diagram for what looks like a furnace, and another of rollers, which look like a press. Looking more closely, one also finds a tiny (one inch) sketch of the head of an old man, the delicate outline of a leaf, and another sketch of the child with a lamb, this one a mass of soft, almost unintelligible charcoal lines, upside down relative to the rest of the page.

Viewed from a contemporary perspective, the fragmentary nature of this work strikes a chord with the postmodern sensibility that endows with undue profundity the mere, or merely clever, juxtaposition of material, without hierarchy and often without sense.

It cannot be forgotten that this was not, however, Leonardo's sensibility. From his notes, which have been transcribed, and are not just obscure scribbles, it is clear that he considered painting a science, on an equal par with mechanics, biology or mathematics.

The exhibit includes *Eight Double Sided Sheets from the Codex Leicester* (cat. No. 114), which are dense pages of writing, interspersed with diagrams in which Leonardo speculates on the composition of the earth, moon, and sun, and the particular nature of the light emitted by the latter two. Why moonlight was less bright than sunlight was a topic of debate, and Leonardo offered the theory that the moon's surface was covered with water, the waves of which reflected some but not all the sun's light. He includes diagrams of choppy waves showing how the sun's light is fragmented on them. He continues examining the nature and movement of water, and even sketches a surprisingly contemporary looking spray showerhead.

On the bottom right of sheet 2B is an exquisite sketch of a crescent moon. The blocking of light by the shadow of one sphere on the surface of another is also reminiscent of an eclipse. The artist is known to have witnessed a full eclipse of the sun on March 16, 1485.

In manuscripts describing an artist's course of study, he examines the nature of light and shadow and their effect on color, the life and structure of things, their right proportions at rest and in motion, the laws of perspective and composition. He also left extensive studies of human anatomy based on dissection of animals and anatomical writings of others. (The practice of human dissection of the corpses of criminals was begun in the sixteenth century, but only under extremely controlled conditions. Leonardo probably was present at one later in his life, in 1510.) He also left botanical drawings, a charming study of a crab (cat. No. 28), and treatises on architecture.

In addition to the sciences, an extremely comprehensive category, Leonardo wrote tales, allegories and fables, prophecies, jests and riddles, which were a vogue in Italian courtier society.

The fact that some of his scientific conclusions were limited by the parameters of medieval, as derived from classical Greek, science does not diminish the value of his approach. Nor does it matter that one couldn't paint a painting based solely on his instructions.

What he communicates primarily in his manuscripts and drawings is two-fold: first, that knowledge is grounded in our observation of the material world, and, second, that from the understanding thus gained of the workings of nature, one can extrapolate and predict developments which, while not directly observed, are also true.

"First I shall test by experiment before I proceed farther, because my intention is to consult experience first and then with reasoning show why such an experience is bound to operate in such a way. And this is the true rule by which those who analyse the effects of nature must proceed: and although nature begins with the cause and ends with the experience, we must follow the opposite course, namely, begin with the experience, and by means of it investigate the cause." (*The Notebooks of Leonardo da Vinci*, Oxford University Press, 1986, p.6)

He was thereby able to anticipate such technological developments as the submarine and flying machines a full 500 years before any such thing was realized. We find this incredible, and yet we are no less capable of anticipating future developments, just as we are no less capable of drawing, if we were to train ourselves—which rarely happens in art schools today. As our technological and scientific mastery advance, we should become more, not less, astute.

Until the material basis for them developed, Leonardo's projects remained on the level of plans. But this did not prevent him from drawing the conclusions suggested by experience not only of the natural, but of the human world as well. His most profound realization was to understand the dual purpose to which our technology can be put.

So in his notes on the submarine, he explicitly says he does not divulge in entirety what he has discovered about the human ability to stay under water for long periods

"...on account of the evil nature of men who would practise assassinations at the bottom of the seas by breaking the ships in their lowest parts and sinking them together with the crews who are in them; although I will furnish particulars of others which are not dangerous, for above the surface of the water emerges the mouth of a tube by which they draw breath, supported upon wine skins or pieces of cork" (p. 97 of *Notebooks*).

In other words, he will tell us how to make a snorkel, but not a submarine! (And this at a time when most people did not even swim.)

This caution, and the responsibility Leonardo takes for the consequences of his researches, is instructive, and must be borne in mind (but is largely overlooked in the exhibition notes) when considering his sketches for armaments (cat. No. 48-49a), his studies of ballistics (cat. No. 50) and other drawings of ordnance, such as that of a *Cannon Factory* (cat. No. 51).

He was not, as one might mistakenly conclude, indiscriminately engaged in the production of the daisy cutters and cluster bombs of his day, along with his other scientific and artistic projects. But neither was he hermetically sealed from the society of competing princes in which he lived.

Italy in the fifteenth century was a collection of principalities, or, in cases such as the Medici's in Florence, with their strong ties to the merchant class and preference for ruling ex-offcio from behind the scenes, virtually family firms. De Medici, Borgia, Sforza—these and other families struggled not only within their own ranks for power, with the occasional fratricide, they also struggled with other rivals both local and neighboring. Shifting alliances between the princes and the increasingly powerful bourgeois families gave political life in Renaissance Italy its treacherous reputation. Commissioning art had its role in such power politics.

Leonardo by birth was from Vinci (hence da Vinci.) He was the illegitimate child of a notary and a farm girl, both of whom then married people from their own rank. When his father's wife died in childbirth, he moved from his grandfather's farm to his father's household in Florence. He did not receive the education typically afforded the educated classes of the day, and never mastered Latin, the language used in most scientific texts, making his self taught intellectual accomplishments all the more impressive.

He was inscribed as an apprentice in Verrochio's workshop for an artisan's career instead. In 1481, he was sent by Lorenzo de Medici ("Il Magnifico") to deliver a lyre to the Duke of Milan. Once there, he apparently sent his famous letter, offering his services as a military engineer, sculptor, architect, and painter to Ludovico Sforza ("Il Moro").

The drawing of the *Cannon Factory* dates from 1482-85 when, in his early years in Milan, Leonardo sought to impress Ludovico with his engineering skills. It shows numerous nude laborers in a cannon foundry at work on a gigantic barrel held up by a tripod and rope pulleys. The little

figures strain and stretch in unison as they work. Ranged in the background are other cannon barrels and tools, and in the foreground is a foreshortened mold of some sort on rollers.

The drawing is perhaps most fascinating for showing the power of collective labor way before its time, and certainly as only infrequently recorded in art. It brings to mind Diego Rivera's fresco cycle of the *Detroit Automobile Industry* in the Detroit Institute of Art, despite the vast difference in scale and distance in time.

Fascinating as the drawing is, Ludovico apparently was not impressed enough to commission any ordnance. The general feeling among Leonardo's patrons seems to have been that the artist's plans were impractical (which they usually were) and he already had a reputation for not completing work on time. However, by 1490, Ludovico did commission an equestrian monument to commemorate his father, Francesco Sforza, the first Sforza duke of Milan.

Several dynamic studies of a rider and rearing horses (cat. No 53, 87, 88,) close-ups of horses' legs in different positions (cat. No. 63) and elaborate technical drawings (cat. No. 64) for the mold that would have been required to cast this gigantic statue (planned to stand 31 feet 6 inches from the ground without the rider, and weigh150,000 pounds!) are all that remain of this project. Leonardo spent most of his effort on trying to overcome the technical challenges involved—the mold was to be buried upside down in the ground, but its closeness to the water table and resultant humidity would have caused major damage. In the end, Ludovico's father-in-law, the duke of Ferrara, took the bronze instead to cast, of course, a cannon.

But speculating on the designs for weapons, the creation of which, after all, posed the same technical challenge as casting a bronze sculpture, should not be taken to indicate any relish for war on Leonardo's part. In one of his prophecies he says,

"Creatures shall be seen on the earth who will always be fighting one with another, with the greatest losses and frequent deaths on either side. There will be no bounds to their malice; by their strong limbs a great portion of the trees of the vast forests of the world shall be laid low; and when they are filled with food, the gratification of their desire shall be to deal out death, affliction, labour, terror, and banishment to every living thing; and from their boundless pride they will desire to rise toward heaven, but the excessive weight of their limbs will hold them down. Nothing shall remain on earth, or under the earth, or in the waters that shall not be pursued, disturbed or spoiled, and that which is in one country removed into another. And their bodies shall be made the tomb and the means of transit of all the living bodies which they have slain.

"O earth, why dost thou not open and hurl them into the deep fissures of thy vast abysses and caverns, and no longer display in the sight of heaven so cruel and horrible a monster" (ibid., p. 254).

Nor was he incapable of imagining destruction on a scale as large and wanton as that which we are witnessing today; however, he could only conceive of something so vile as the work of necromancy, an art that he felt men would ever strive, but fail, to learn from nature.

"For I know that there are numberless people who, in order to gratify one of their appetites, would destroy God and the whole of the universe. If this art (necromancy) has never remained among men, although so necessary to them, it never existed and never will exist" (ibid., p. 12).

How could it be otherwise that Leonardo, who understood so intimately the marvels of nature and mankind, would recoil at its destruction by means of the very technology that is its crowning achievement?

In one final drawing, *Head of the Virgin in Three-Quarter View Facing to the Right* (cat. No. 108), we have the woman's face that only Leonardo could draw, suffused with a haunting beauty, the eyes looking slightly aside with an expression of infinite tenderness, the features soft yet strong, even slightly androgynous, the hair a loosened mass of curling shadow.

For an artist who drew so much from observation, his women, despite superficial differences, all seem to have this same enigmatic face. Into it Leonardo has concentrated everything he experienced through his many and varied studies of what is most beautiful in this world, and most human.