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Review of the Exhibition and Catalogue *Leonardo da Vinci: Engineer and Architect / Leonard de Vinci : ingénieur et architecte*

Museum of Fine Arts / Musée des beaux-arts, 22 May-8 November 1987, published by the Museum, pp. 359, 398 black-and-white illus. + 23 colour plates (English ed. used)

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FIGURE 38. Model of a centrally-planned church made after Leonardo da Vinci's autograph drawing in Ashburnham M.S. 2037, f. 5 v. (Photo: Montreal Museum of Fine Arts).

FIGURE 39. Installation shot of the main room on the second floor with the models made after Leonardo's drawings (Photo: Montreal Museum of Fine Arts).

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We are living in an era of the "blockbuster show" and are particularly susceptible on this continent to its fictive excesses, as is amply evidenced for example by the frantic attempts to defend the recent *Treasure Houses of Britain* exhibition in Washington, D.C.[1] Perhaps it is appropriate that such overindulgences are most visible in a country which is renowned for the special character of its "absolutely fake cities," a country that, by a reliable count, sports in California several reproductions of Leonardo's *Last Supper*, whose cumulative effect is to give you, the hucksters hope, "the emotion . . . more real" than seeing the ruined original would do.[2] The sad character of the "blockbuster" becomes even more poignant when one visits a truly distinguished exhibit where the ideas presented function on a variety of levels from popular to scholarly that inform the viewer of the high purpose and intentions of the organizers. Such a show was *Leonardo da Vinci: Engineer and Architect*.

This exhibition was organized by the Montreal Museum of Fine Arts under its director, Pierre Théberge, in collaboration with the Canadian Engineering Board, whose centenary was jointly celebrated. The actual shaping of the show was the work of Paolo Galluzzi, director of the Instituto e Museo di Storia della Scienza in Florence, and Jean Guillaume, director of the Department of Art History at the Centre for Renaissance Studies at the François-Rabelais University in Tours. They in turn enlisted the participation of several other outstanding Leonardo specialists in the writing of the catalogue, including Carlo Pedretti, Augusto Marinoni, Martin Kemp, Giustina Scaglia, Salvatore Di Pasquale, Andre Chastel, Luigi Furpo, and Pietro C. Marani. The catalogue, like the show, is divided into roughly two equal parts that treat in considerable detail Leonardo's activities and thoughts as engineer and architect.

The exhibit offered, for both the general public and the specialist, a veritable feast for the eye and mind. Although the co-editors modestly indicate in the catalogue preface that the show could only provide a general survey of Leonardo's engineering and architectural investigations, a review of the List of Works Exhibited[3] reveals the remarkable nature of the display: approximately one-third of all extant drawings were there and included

1 See the "Discussion of 'Art History and the Blockbuster Exhibition,'" *The Art Bulletin*, LXIX, 2 (June 1987), 295-98. Richard Spear's response is exceptional for its intellectual candor and frankness.

2 Umberto Eco, *Travels in Hyperreality*, trans. W. Weaver (London, 1986), 40, 16.

3 *Leonardo da Vinci: Engineer and Architect* (Montreal, 1987), 339-52.

eight notebooks in the exhibition, totaling more than twelve hundred folios. Not since Leonardo's death in 1519 has so much of his own graphic work been seen in one place; the exhibition was true to its stated aim of recreating an *Accademia vinciana*.

This graphic cornucopia was enriched with the addition of a considerable quantity of drawings by other Renaissance engineer-architects such as Francesco di Giorgio Martini and Giuliano da Sangallo and by 25 listed scale-models, of which all but one were made after drawings by Leonardo.[4] Of these, ten were created especially for the exhibit by Muséo Techni, Montreal, and are qualitatively equal to the large group of mostly well-known wooden reproductions of Leonardo's inventive designs sent from Florence. All of the complex model machinery was operational and permitted close inspection with the help of accompanying video displays of the particular principles of physics and mechanics that Leonardo considered in his characteristically small sketches and detailed drawings.

The exhibition was so arranged that the twenty-sixth model, a giant 750-kilogram flying machine made in Quebec, appeared to hover over the main entrance of the Museum. It drew visitors into the first section on the ground floor that was devoted to architecture. "No matter what field preoccupied Leonardo," Chastel notes in his catalogue essay on the problems of the artist's architecture in relation to his scientific theories, "it was his aim to approach it both as a theoretician and as a practitioner."[5] The full force of this statement was brought home to the visitor throughout the show, and the objectives of the artist and the organizers were clearly stated in the first room with its photographic collection of over 90 enlarged architectural drawings surrounding two stunning scale-models. These two models of a monumental doorway and a centrally-planned church were built expressly for the exhibit.[6] The latter reconstruction (Fig. 38) is a breathtaking marvel of the modeller's art, a fitting recapitulation of one of the Renaissance's most compelling sacred architectural forms, and a fascinating attempt to make fully three-dimensional an intricate interlacing of ideas whose centrality to Leonardo's architectural thoughts is brilliantly discussed in Guillaume's catalogue essay on the artist and architecture.[7]

4 *Leonardo*, 351-52.

5 *Leonardo*, 193.

6 Both models are listed (*Leonardo*, 352), but only the church reconstruction is illustrated and discussed in detail (*Leonardo*, plate XVII and 224-48; for a graphic reconstruction see fig. 284).

7 *Leonardo*, 207-86.

This essay seeks to delineate the outlines of approach to a systematic and comprehensive reconsideration of the vital role of Leonardo's architectural ideas throughout his life, a book-length investigation that Guillaume himself should do. In the meantime, the model and discussion bring to life in vivid three-dimensionality some of Leonardo's most intimate investigations on the matter and on his lifelong relationships with theory and practice. This model is one of the most stimulating new objects in the show, and is reflective of the increasingly careful critical attention that is being given to the scale-model in reconsideration of the leading Renaissance architects (as was recently seen, for instance, in the Raphael exhibit in Rome).

The show continued on the second floor where the visitor saw the bulk of the original drawings and notebooks interspersed amongst the other historical materials and the modern models. This part developed in a limpid manner Leonardo's commitment to engineering and science, and it followed the artist's career from his Florentine apprenticeship to his final French years. The high level of insight was sustained throughout the show in the several rooms that chronologically were devoted, first, to Leonardo's early training and confrontation with the rich tradition of the Florentine engineer-architect that was symbolized by the career of Brunelleschi; then to his mature ruminations on a seemingly infinite variety of machinery, which was visible in his drawings and in the scale-models that accompanied them (Fig. 39); and finally to his later speculations that were illustrated in several manuscripts, the most prominent being the 36 folios of the Codex Hammer (formerly Codex Leicester). All of these folios were on display in a huge triptych of glass panels that literally embraced the viewer in the room given over to their presentation. This intriguing aspect of his life's thoughts is magisterially chronicled in the second major essay of the catalogue, Galluzzi's meditations on Leonardo's career as a technologist, which cogently succeeds in debunking the common myths that still surround him and in establishing the clear forms of his inquiry based upon the author's historical reconstruction.[8] Read together, Galluzzi's and Guillaume's contributions provide everyone who unfortunately did not see the show with a full picture of the exhibit's novelties and bold new approaches to the eternal Leonardo questions: who exactly was he, what precisely did he do, and why did he do it?

In his own attempt to respond to these central questions, Galluzzi raises what is perhaps a basic

8 *Leonardo*, 41-109.

flaw in most Leonardo scholarship: "the enormous body of literature on Leonardo still betrays a striking hesitancy to present a precise definition of his personality—artist, architect, inventor, philosopher, scientist."[9] His essay begins to redress the imbalance by demanding that close attention be paid to Leonardo's development as an engineer. In this, Galluzzi underscores an aim of the show to present this and the other technological facets of the artist's personality in a precise way, so that the rich complexity and untidy creativity of his mind may emerge. In this, the organizers of the exhibit and catalogue are well aware of Leonardo's own dictum that "the abbreviators of works do injury to knowledge and to love, for love of anything is the offspring of knowledge, love being more fervent in proportion as knowledge is more certain, and this certainty springs from a thorough knowledge of all the parts which compose the whole."[10] Indeed, the serious student of Leonardo should read and reread this catalogue in conjunction with Martin Kemp's recent book in order to see exactly how the most innovative reconsiderations of Leonardo's life and works are currently being undertaken. It is, then, in the spirit of this show and of Kemp's marvellous investigation that I should like to reflect briefly on two "accurate outlines" that emerged for me as I visited the exhibit: the modern definition of Leonardo's personality; and Leonardo and time.

The modern profile of Leonardo is based to a considerable degree on the Vasarian model. Part of the "striking hesitancy" of the literature to deal effectively with his unique being is still due to the ongoing (if unacknowledged) persistence of the Vasarian notions of artistic growth, production, achievement, and the cult of genius. In many senses, the operative word is "artistic" as it was commonly understood during the Renaissance and specifically employed by Vasari throughout his book, for Vasari's biological model of historical growth and perfection necessarily contains within it the assertions that genius is the ultimate and fundamental attribute of supreme artistic life and that the individual works are an outward and visible sign of this inward and spiritually given grace. In Vasari's grand scheme—and to a striking degree in that of modern scholarship on Leonardo as well—Leonardo is the apparent exception to the biographer's rule of artistic supremacy because he evidently made so little art, which for Vasari meant primarily painting, sculpture, and architecture. Vasari dealt with the apparent paradox by imputing to him one of the best-known and most-quoted sayings in his life of Leonardo: "He explained that men of genius sometimes accomplish most when they work least; for, he added, they are thinking out inventions and forming in their minds the perfect ideas which they subsequently express and reproduce with their hands."[11] We shall probably never know whether Leonardo did in fact say that, but my own intuition and knowledge of his life and production militates against such a possibility; indeed, as the exhibition and catalogue make self-evident, one obvious fact is that Leonardo's hand was hardly ever at rest. What is required now is that we undertake to define Leonardo's personality not primarily as Vasari would have it, but rather as the man himself lived and shaped it.

The catalogue and Kemp are, in this regard, most reliable guides; they collectively take as given the obligatory reintegration of the multitude of seemingly disparate parts. One of their principal aims is to demonstrate that the cult of genius that has grown up around Leonardo is largely a myth reflecting our fragmented impressions of him rather than his own self-perception. In this reconstruction, a crucial early document, if only because it predates virtually all of the extant graphic legacy, is an early revealing autobiographical statement: the artist's famous letter of late 1481-82 introducing himself to Duke Ludovico Sforza of Milan. In it, as Kemp says, the artist drafted his own testimonial.[12] Leonardo boldly announced from Florence that he had secrets to share with the Duke regarding military engineering and architecture. He listed ten general categories of services that he was prepared to offer; his final item of expertise, so he claimed, lay in his ability to design public and private buildings, to make sculptures in marble, bronze, and clay, and to create paintings.

For Kemp and Galluzzi, the letter has an aura of extravagant confidence and exaggeration, having been written by one who was trained in the traditional Florentine artistic *bottega*, but both recognize that Leonardo was not idly boasting. Actually, the thrust of both authors' arguments is to substantiate beyond any reasonable doubt Leonardo's capabilities in the specific areas that he listed; and they show that the artist's claims were, if not a commonplace in Tuscan-trained artists, at least not unique to Leonardo. But an underlying assumption in recent discussions of this letter is that he was still in 1481-82 first and foremost a Renaissance artist in the Vasarian mould. I would

9 *Leonardo*, 41.

10 Quoted in Martin Kemp, *Leonardo da Vinci: The Marvelous Works of Nature and Man* (Cambridge, Mass., 1981), 349.

11 Giorgio Vasari, *The Lives of the Artists*, trans. G. Bull (Harmondsworth, England, 1977), 263.

12 Kemp, *Leonardo*, 78.

argue that this letter reveals many wondrous things about the artist, most significant of which is his emerging intellectual and theoretical position, for the letter is also testimony to his metamorphosis into someone "quite exceptional—and not just an artist."[13] This metamorphosis lay beyond the outer limits of Vasari's comprehension, which has persisted in obscuring our recognition of the whole person until quite recently. The letter becomes, then, a synoptic verbal portrait of the 30-year-old man whose subsequent 37-year career would be spent more or less expending his energies and imagination in proportion to the priorities he established, or at least set out, in this sketch. One of the truly bold successes of Kemp's and Galluzi's writings, and an overall achievement of the show and entire catalogue, is the redefinition of Leonardo's historical profile more acutely in accordance with his own production than had earlier been the case and the shifting of emphasis from the artistic to the technological. Given this, we should now reconsider our own underlying assumptions about his life and work in relation to that of a traditional, even exceptional, Renaissance, or Tuscan, artist, and inquire of the extant legacy what its ultimate message may be. This letter is a significant early, prescient indication of Leonardo's life-long confrontation with theoretical and practical matters related to these loose categories. As a lucid statement of intent, the letter is revealing; as an enunciation of Leonardo's regard for time, it is very suggestive.

Kemp has underscored the importance of time for Leonardo, calling attention to one of his earliest surviving notations that may well express a deeply held personal statement:

> O time, devourer of all things, and O envious age, you destroy all things and devour all things with the hard teeth of old age, little by little with lingering death. Helen, when looking in a mirror, seeing the shrivelled wrinkles of her face made by old age, wept and contemplated bitterly that she had twice been ravished.[14]

This note, written around 1480, is a loosely reshaped translation of a passage from Ovid's *Metamorphoses*, which he undoubtedly found in an Italian version as he did not yet have sufficient command of Latin to read and translate it himself critically. For Kemp, its literary associations are indicative of the artist's interests at the time and they "exude a strong air of conscious virtuosity in expression."[15] Well that may be, but as I walked through the exhibition with this notation in mind, I found myself asking what time may really have meant to Leonardo in its ramifications. Did it mean, as Vasari broadly suggests throughout the Life, that Leonardo had time on his hands, that he spent large chunks of it doing little productive work; or did Leonardo make more subtle and sustained use of it? I was particularly struck by the question as I stood in the room where the Codex Hammer was on display in its glass triptych and was enfolded in the 18 sheets whose 36 sides, all completely covered in word and image, were on view.

Leonardo's investigations in the Codex Hammer focus on the "body of the earth," and are amongst his most sustained observations and speculations in the extant graphic legacy. Characteristically, well-developed written considerations are found in his late notebooks, in those surviving manuscripts that were done after 1505. This Codex deals largely with physical geography, and in many respects may have seemed to many to have been the least visual "object" in the show. Kemp has shown how in this notebook "Leonardo's greater consciousness of the many natural resistances to force led him to qualify the Aristotelian ratios of power, time, distance and weight."[16] The Codex is, amongst other things, an extended argument against antiperistasis. Fully one-quarter of the manuscript is devoted to the geography of water, and the patterns of Leonardo's mind project themselves most movingly, as the large sections of continuous text with their tiny illustrations flow from folio to folio. Kemp sees this Codex as a detailed debate that Leonardo had with himself regarding a broad series of theoretical and scientifically practical matters related to the earth; it is to be set in the larger context of his late sustained arguments on the heart and of his reflections on the macrocosm.[17]

It is all of this and more. Standing, as it were, in the mirrored image of his mind before the Codex, it becomes self-evident that the manuscript also illustrated the physical fact of its manufacture. For Leonardo, such manuscripts as this and the others on view were created carefully and systematically. The exhibit displayed three of his well-known pocket-sized notebooks, dating to the 1480s and illustrative of a working procedure that he continued to employ until his death—namely, the initial notation of an idea in a little book, and its eventual transfer later to a larger manuscript as part of a bigger plan. All this required time, and Leonardo took whatever time was necessary to complete the hundreds of thousands of tran-

13 Kemp, *Leonardo*, 348.
14 Quoted in Kemp, *Leonardo*, 86.
15 Martin Kemp, "Late Leonardo: Problems and Implications," *Art Journal*, XLVI, 2 (Summer 1987), 98.
16 Kemp, *Leonardo*, 304.
17 See Kemp, *Leonardo*, 304ff

scriptions that are contained in his extant notebooks. The 36 folios of the Codex Hammer are crammed with text and illustrations. Leonardo may have taken 70 to 80 hours (by rough calculation) simply to transcribe the manuscript. How much time did he take thinking about, preparing, and outlining his debate with himself? How much time would he have used conceiving of and completing the other notebooks known and lost? What does this then suggest to us when the totality of the graphic production is measured against his artistic projects and achievements? Normally, when preparing a study of a Renaissance painter, sculptor, or architect, these and related questions prompt speedy replies in the larger context of evaluation of a life's works. When asked of Leonardo, however, the substratum of that life must first be uncovered and analyzed, which the show and catalogue admirably do.

Such questions as these may seem too simple almost to ask in relation to the seemingly infinite complexity that was Leonardo. Nevertheless, Leonardo himself early recognized the force and ferocity of time, and his life became an affirmation of his agile ability to avoid its ravages because he caught and held his spirit not in a mirror but on paper (and concurrently on panel and wall). His notebooks chart the exact course of his odyssey. In the last analysis, the paper cities and world that he built and bequeathed to posterity were constructed on a "rigorously technical and critical approach." He was a planner of enormous vision, which is exemplified in this catalogue and exhibition; he projected his "limitless faith in the creative and healing power of reason"[18] with such conviction that the accurate outlines of his life and work can still be recovered today.

18 Luigi Furpo, "Leonardo as Urban Planner," in *Leonardo*, 301.

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