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Review:

Leonardo da Vinci. Corbis Reveals the Mysterious Writings of the Original Renaissance Man. Bellevue: Corbis, 1996, *MCN Spectra*, vol. 25, no. 2, Winter 1997/98, pp. 48-49.

(Not for Export. For Distribution within North America Only). CD ROM.

This CD-ROM is a splendid tribute to both the potentials and problems of multimedia. It is an edition of one Leonardo's manuscripts, the *Codex Leicester*, complemented by many other materials, which show how multimedia can help contextualize historical documents. There is a time line with four parallel streams to provide the viewer with Leonardo's biography, major events in history, art and discoveries of the period from 1400 to 1550. There is a virtual gallery of Leonardo's major paintings, his chief manuscripts, samples of his drawings concerning nature (17), engineering (17), and studies (4), as well as three lost works and twenty pertinent historical documents.

There are introductions by Oxford Professor Martin Kemp, and Bill Gates himself. Five tours, which are effectively mini-lectures, introduce us to the Life of Leonardo, the Life of the Master, his Treatise on Nature, the Body of the Earth, Of the Waters and the Heavens. These tours are supplemented by six exhibits entitled: Changing World, Engineering Water; Sun, Moon and Earth; Elements in Balance; Nature of Water and Light and Colo(u)r. The contents of the tours and exhibits draw substantially from Professor Kemp's award winning book, *Leonardo da Vinci. The Marvellous Works of Nature and Man*, (Cambridge Mass.: Harvard University Press, 1981). There is a guide to introduce us to principles of navigation, which are easy to use and fairly intuitive. There is a list of credits and all of these elements are referenced in an home page in an elegant tree form. For those unfamiliar with the Renaissance this CD offers a beautiful introduction.

From a standpoint of technology, a serious effort has been made to provide something that can be used on "everyday" machines, namely, a 486/33 or better, 12 MB of RAM, 256 colour Super VGA display, double speed CD-ROM and 8 bit Windows compatible sound card, and Windows 3.1 or Windows 95. The quality of reproductions is generally surprisingly good. The CD-ROM is designed for use at a resolution of 640 x 480 but works beautifully at 1024 x 768. The images are designed to be seen on 14" monitors. Using a larger monitor (17" or 21") does not substantially change the size of the images. Using NT poses no problems for the images but there are sometimes problems with the sound card.

Much can be said about both the edition and the contextual materials. The *Codex Leicester*, was written c. 1505-1515, was acquired by Lord Thomas Coke, the Earl of Leicester in 1717, bought by Armand Hammer in 1980 (using monies from Occidental Petroleum) and resold after his death to Bill Gates in 1994. The CD-ROM reproduces each of the original folios of the *Codex Leicester*. Being left handed, Leonardo wrote

almost all of his works in mirror script. Thanks to the Corbis software, Codescope, one can view each of these folios either in mirror form, or right-side round, complete with a transcription and English translation. While extremely attractive this approach precludes a careful parallel reading of original, transcription and/or translation. Each page is provided with insights, a synopsis of the argument and an outline of the written order (Leonardo did not always simply write from top to bottom). With regard to contents, six major topics have been identified: dynamics of water, rivers and seas, body of the earth, astronomy, atmosphere, and experiments. As one clicks on these topics, the relevant pages for that topic are highlighted in a schematic summary of the manuscript which is very useful.

The English translation is by the world's most prolific Leonardo scholar, Professor Carlo Pedretti, who has also re-arranged the folios in what he believes to have been their original order. While all this is very stimulating, we are not told about an earlier edition of the *Codex Leicester* by Gerolamo Calvi (1909), or about Pedretti's edition, where it was called it the *Codex Hammer*, nor are we given a serious explanation why the pages have been re-arranged. Here is a case where this CD-ROM is unfortunately de-contextualizing the original manuscript.

The rich materials in the tours and exhibits are well worth study. They are replete with beautiful images. These are frequently from Leonardo's manuscripts, but are mixed with other drawings such that the untrained reader may not always be entirely clear as to what is by Leonardo and what belongs to others. In the case of Leonardo's drawings we are frequently provided with images that have been truncated. In the case of the Sala delle Asse (in the Castello Sforzesca), for instance, we are provided with a little section with no clue that this covers the whole room. This little section includes a Latin inscription telling us that the fresco was done in 1495, although the caption insists that it was painted in 1498. There may be evidence for contradicting the stated date but then it would be appropriate to provide such evidence (if it exists) rather than assume that all readers will be ignorant of Latin. On a number of occasions and consistently in the Leonardo da Vinci Gallery section, details or small versions of paintings are provided. When clicked these become larger images which require scrolling to be seen entirely. In future it would be useful to have an intermediary step which provides a full screen size image. It is also surprising to find no use of Apple's Quick Time techniques which have found their way into standard CD-ROMs of galleries such as the Louvre, and the Uffizi.

The CD-ROM was produced using Macro-Media and has a beautifully professional feel to it. There are intriguing juxtapositions of images. Backgrounds are often provided with their own underlying images. On occasion the interests of elegance compete with the substance at hand. For instance, in the section on the *Codex Leicester*, the background image is a polygon taken from the *Codex Atlanticus*, which has no connection at all with the treatise at hand. It may well be that a reader unfamiliar with Leonardo finds this attractive, but a scholar will probably find it distracting because it means that such editorial decisions were made on grounds of aesthetics rather than content.

The tours and exhibits provide a helpful introduction into some major themes of Leonardo and his times. For example, the tour on the Mind of the Master has sections on Uniting the Universe, Building Biology, Flight and Crisis in Complexity. The tour entitled Treatise on Nature gives a survey of Leonardo's extant manuscripts, reviews their history, suggests why water was such an important theme and broaches Leonardo's macrocosm-microcosm analogies. In the tours and more so in the exhibits there are a number of animations and experiments to help make Leonardo's synthetic and often cryptic drawings come to life. This is very useful although we are not told whose interpretation they represent in each case. Throughout there are quotes from Leonardo in translation. Unfortunately, their precise source is not always indicated. For instance, in the Nature of Water exhibit, each of the seven shells on page four has a quote with no hint as to its provenance.

Each of the sections tells us exactly how many pages are devoted to the topics at hand. In all the six exhibits contain some eighty screens which would probably amount to some twenty printed pages. The CD-ROM thus maximizes the appearance of content. For example the exhibit On Light and Colo(u)r has subsections on Painted Background (4 pages), Colo(u)r Mixing (3), Atmosphere (4), Colo(u)r Glazing (3), and Perspective (3). For purposes of initial orientation this is excellent. On the other hand, Leonardo spent hundreds of pages on perspective and we are given no clue as to where these three pages fit into his work as a whole. Here is a case where an electronic edition could readily provide some reference to the larger context or at least refer us to the standard literature on the field. On this theme, a scholar will note that almost all the quotes are from the *Codex Leicester*, which is appropriate inasmuch that this is the main manuscript under discussion. On the other hand, its 36 folios (i.e. 72 pages) represent approximately 9% of Leonardo's extant works and all but a handful of experts will be in a position to weigh precisely how the contribution of this one text fits into his lifetime's achievements. In all fairness some hints are given. In the exhibit on Engineering Water the authors tell us that the "probable purpose" of the *Codex Leicester* was "to collect his water studies for an eventual book for hydraulic engineers".

It is true that Leonardo had various plans to write about water. An attempt to reconstruct his *Treatise On the Motion and the Measure of the Waters*, was published in 1826. Of this no mention is made, nor of the present author's views¹ that the *Codex Leicester* is mainly a draft for a major work on cosmology. In his early work Leonardo was particularly fascinated by the anatomy of the human body which he came to see as a machine.² This led him to study the nature of mechanical forces. Gradually he became more directly fascinated by the cosmos. There is scattered evidence that he developed a primitive form of telescope. He became convinced that the moon had oceans like the earth, indeed, that each planet was at the centre of its elements, which effectively meant a rejection of the traditional geocentric universe. The study of the earth's waters thus became the necessary background for a much more ambitious work on the *Moon and its Waters*. In this context we recognize that Leonardo's enduring fascination with optics and perspective had an underlying motive. Like all serious observers of the heavens from at least the time of Aristotle onwards, he was trying to discover ways to determine the veracity of vision and be certain that he was not simply looking at celestial illusions. In

other words there was a grand plan that actually united the seeming chaos of this multi-faceted mind. This possibility is not refuted or even considered by the present CD-ROM.

In a collection of essays in a printed book, each essay has a clearly named author and each can be judged in their own right. In this CD-ROM, by contrast, the author is officially Corbis and although a series of scholars are mentioned there is no clue as to who was responsible for which section. At one point, for instance, it is claimed that the *Codex Atlanticus* has over 4000 pages. At another point the same manuscript is described as having 1750 sheets. There is a discrepancy of some 500 pages between these two claims, which differ from the standard claims of Professor Pedretti who is thanked in the credits. Who is responsible for these divergences? We clearly need new electronic equivalents of footnotes to establish authorship of individual bits of a complex multimedia work. If we are unable to blame anyone, we would need blame all.

The credits do provide us with useful glimpses into the team which created this product. Besides Professor Martin Kemp, it includes two of the foremost authorities on Leonardo da Vinci, namely, Professor Carlo Pedretti (UCLA), and Dr. Pietro Marani, of the Brera Museum as well as Professor Paolo Galluzzi, Director of Istituto e Museo di Storia della Scienza, who has directed excellent work on Leonardo now connected with G7 pilot project 5. Alas, none of this is included or even mentioned in the context of this CD-ROM. Other scholars include Professors Janis Bell, Jon Bridgman, Claire Farrago, James Riley, Janis Shell and Harry Yeh. Most of the remaining twenty five pages are taken up with the photographers, editors, and of course, the institutions which have co-operated. Here the scholar notes some striking omissions, notably some of the pre-eminent collections and institutions connected with Leonardo including the Ambrosiana Library, the British Library, the Czartoryski Museum (Cracow), the Louvre, the Institut de France and the Collection of Her Majesty Queen Elizabeth II at Windsor Castle. Due credit is given to four members of the Harris Hydraulics Lab of Washington University, who have reproduced an interesting series of Leonardo's experiments on water, but no mention is made of the work of Professor Enzo Maccagno, who has spent a lifetime studying Leonardo's work on water and hydraulics. No mention is made of two the greatest experts on Leonardo in the past generation, Augusto Marinoni and the late Dr. Kenneth Keele.

If the purpose of the CD ROM were to reach only a popular audience, then it would be defensible to omit miniscule discussions of the greatest experts who go into unnecessary detail for a general public. One discovers, however, that the words of the late Lord Kenneth Clark are cited in the text (in the time line for Leonardo under Cecilia Gallerani in 1490), but he does not appear in the credits. On other occasions also the work of other scholars has been borrowed, as Mark Twain would put it, without acknowledgment. Indeed in the absence of any bibliography on the CD-ROM, an unsuspecting reader could receive the distinct impression that this team has been the first to tackle the subject of Leonardo da Vinci, an impression which will rapidly be dispelled by anyone who takes the trouble to consult the standard bibliography by Professor Mauro Guerrini, which provides no less than three substantial tomes full of titles of literature.³

The new owner of the *Codex Leicester* paid many millions for the treatise. It is a complement to his modesty that, in marked contrast to the last owner, he continues to refer to it as the *Codex Leicester*. He has gone to considerable expense in producing a very attractive CD-ROM with all the elegance of an authoritative edition. This dream would have been much more convincing if its authors had also acknowledged that their work is part of a much larger tradition. As it is, they have succeeded in producing a thing of beauty which, as Keats said, is a joy forever. On the other hand, they have also followed a fashion of the day to reduce great men to pithy summaries, a trend against which Leonardo in his day was already opposed. It is important to remain patient for a day when the pendulum of scholarly fashion swings back and the new technologies are used to show the richness of Leonardo's complexity and not just a complexly rich summary.

¹ See the author's *Leonardo's Method*, Brescia: Ateneo di Brescia, 1991. The full documentation for this claim is provided in two volumes, as yet unpublished, because comprehensive editions are out of fashion at present.

² On this the late Dr. Keele has provided as near definitive a statement as is presently possible. See his *Corpus of the Anatomical Studies in the Collection of Her Majesty Queen Elizabeth II at the Royal Library, Windsor Castle*, New York: Johnson, 1979-1981 (for which Professor Pedretti provided a new chronology and other notes).

³ Mauro Guerrini, *Bibliotheca Leonardiana 1493-1989*, Milano: Editrice Bibliografica, 1990, vol. 1-3.