

# The Self-Conscious Codex: Artists' Books and Electronic Media

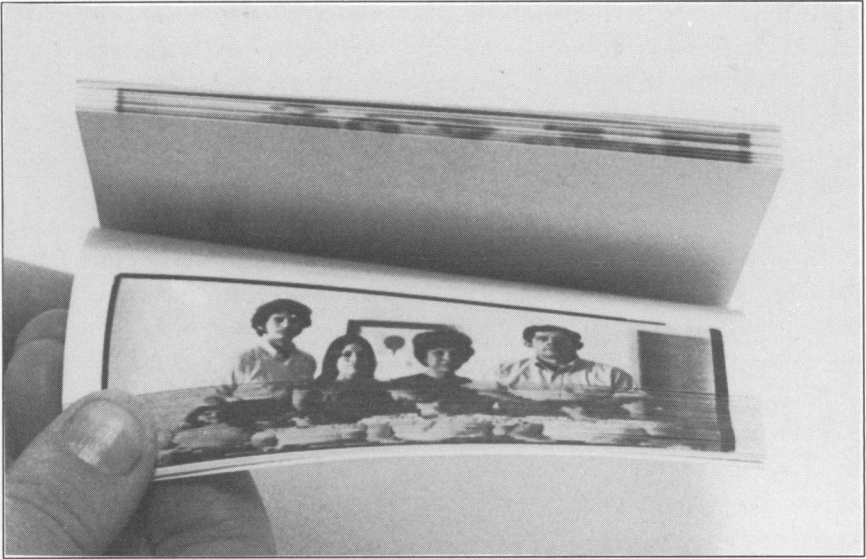
*Johanna Drucker*

THE CODEX FORM, CHARACTERIZED BY BOUND SHEETS fixed in a regular sequence of individual pages, has proved durable on account of its efficiency and flexibility through hundreds of years of use. Capable of containing vast amounts of information readily accessed and systematically ordered, it is deceptively simple in form. This apparent simplicity results in part from its familiarity, its pervasive presence in many aspects of historical and contemporary life. With the advent of electronic media, the codex book has become a favorite object in apocalyptic predictions of extinction. Rising printing and paper costs, shortage of storage facilities, and mouthings of ecological concerns over wood-pulp paper consumption have combined with a vision of a book-less library stocked with electronic databases, on-screen search machines, and dazzling innovations superseding the modest capabilities of the tried and true codex book. Warnings against the foolhardiness—and improbability—of the imminent demise of the book as a source of reference and pleasure meet with the same enthusiasm granted the wet-blanket comments of a chaperon at an old fashioned school dance. Sanely speaking, however, it seems sage to consider that in the immediate future the codex book, whatever it may be in the long run, is likely to have a profound effect on the conceptualization of new electronic innovations—and vice-versa. The process by which new forms of information storage, writing practice, and readerly interface will evolve will no doubt transform many of the conventions that have been standard aspects of book production. The excitement which such an interchange generates should not produce an either/or attitude towards electronic and traditional media; rather, emphasis should be put on the service of the conceptual insights that each, by its limitations and possibilities, provides to the other. The question this essay addresses, therefore, is precisely this: how will formal aspects of the traditional codex book be affected by and affect the conceptualization of electronic “books,” and vice-versa.

To answer such a question requires an initial reflection on the nature of the codex form—both an examination of the structural elements that

grant it specificity of function and of the conceptual premises enunciated by these formal elements. The books that most self-consciously explore the codex, attending to its potential as medium of expression and communication, are artists' books. Artists' books are works made as *primary* works of art—not reproductions of existing work that merely use a book format. The genre has a wide latitude of production values, conceptual parameters, and material qualities, but offers a useful point of departure for considering the codex as an artistic form. Sequence and finitude, the two major structural features of the codex, are glaringly apparent in the reductive compression of "flip-books." The flip-book format is designed to maximize the sequential fixity of the bound pages by making them work in imitation of the rapid-fire still frames of filmic animation. Because it is finite, the flip-book has a brief span in which to achieve its "punch-line" point, to move through the series of pages to the resolution of its short-lived visual narrative. Each page has to play its set part, and each has to operate within the sequence of the whole, for the book to work. But the result is also to obliterate the usual attention to the interior domain of the openings, or to see the impact of page turnings as a slow unfolding of one space after another. Emphasizing the book as a whole, the flip-book depends on ignoring and overriding the normally contemplative interaction of viewing on a page-by-page basis.

Conrad Gleber's *Raising a Family* (Chicago: Chicago Books, 1976) takes these compression features a step further, ignoring even the potential for animating an illusion of a figure or object in action on the page. Gleber's book takes the single image of a family photograph and puts it onto successive sheets so that the image appears to rise from the outside edge as the pages are flipped. The complex narrative implied by the title becomes represented by a single punning image, with the family "raised" to occupy a significant portion of the page. The book contains as many pages as a short novel, but all are put at the service of a single image. The book functions as an object, a single unit, rather than as a complex of articulated interlocking textual and/or visual elements. And yet, paradoxically, the single image that reveals itself is really an entire sequence, a single image shifted upwards on the page, which appears to "rise" through the solid, material form of the book. The material-object qualities of the book enable the pun, and provide the physical format in which sequence (the book's pages) disappears under the appearance of unity (the book block), just as the infinite implications of the title are subsumed under the single photograph of the family group caught at one particular moment of the lived continuum



1. Conrad Gleber, *Raising a Family*. (Chicago: Chicago Books, 1976). Reproduced with permission of the artist. Photo: Brad Freeman.

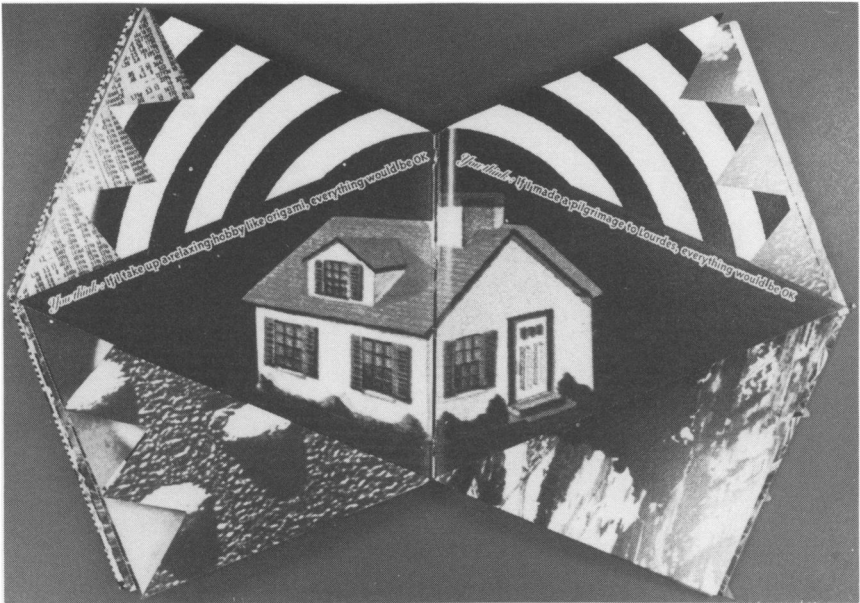
Gleber's piece is perhaps the most fundamental embodiment one can imagine of the crucial features of a bound codex. But there are, of course, other features to the physical form that this work does not exploit to full advantage. Sequence and finitude may be the two descriptive attributes of the codex, but the articulation of time and space within a book are produced through many means—textual and visual, substantive and formal, as well as physical and material. One of the distinguishing features of artists' books is their capacity to call attention to the often ignored potential of the way each of these elements contributes to the production of meaning in the work as a whole. Properties of paper, for instance, such as smoothness, softness, degree of whiteness or opacity, translucence or reflection, affect even the most neutral-seeming use of this material. Paper that is bound against the grain causes a book to open with great difficulty, an effect that has as much value in the right circumstances, as the most flexible of easy openings has in others. The point is that a degree of self-consciousness about these effects permeates artists' books in a way that resonates into the viewer/reader's general experience of books as a whole. There is a seductive quality to material and tactile sensation with which we are familiar as readers, even if in the normal reading situation we tend to ignore its significance. That such properties do not transfer into the virtual

environment of electronic media goes without saying, though there are other properties—color intensity, movement, effects of the monitor's display capability, that offer themselves instead. Electronic media are not "immaterial" except in relation to the properties of extant media—whose material properties are greatly diminished when pre-existing work is replicated in digital form. But the specific materiality of the electronic form is a factor in producing works of art in the new technological environment.

Certain of the features of the spatial structure of the book form, such as the edges of pages and the sequence of pages, do not, for instance, have a direct corollary with the sequence of a hypercard stack of "pages" in a file, nor with the "edges" of the screen or an element within it. In a conventional book, one encounters the various spaces, particularly those of the page and the opening, as a fundamental way that interconnections among visual or verbal elements are structured into a work. The Japanese photographer Masao Gozu, for example, worked to overcome the boundedness of the literal space of a page in his book *In New York* (1984). Gozu filled each of his pages with a single image of a window framed with a bit of the building. The book's size (slightly larger than 8-1/2" x 11"), combined with the fact that the images bleed off the page, provided continuity between the represented space of the pictures and the imagined conceptual space of the street with which they are contiguous. In other words, the reader, holding the book open, occupies the space into which the people who sit in Gozu's windows stare, thus connecting the space of the book as an object with the illusory space of its representation. This effect is partially structured into the images and their placement on the page, but is also produced on account of the scale—the book opens to comfortably fill the field of vision while the act of holding the book forges a connection and identification of the reader with the space enclosed.

This capacity to surround a "reader" with sensation could be even more fully realized in a virtual environment where the effect of immersion won't be purchased at the price of having to overcome the physical distance of holding a book. One can imagine a virtual version of Bruce Nauman's *L.A. Air* (Multiples, 1970), for instance—with its palette of pollution-stained pages, produced as a sequence of color fields of varying optical densities, but the sense of a record (witness and testimonial) with which the book is associated will fall away. Likewise, the defining quality of a page's edge, with its delineation of illusory space and non-illusory space—that limit of the representational field and the "beyond" of that field so key to traditional media—suffers two transformations in electronic form: it is either blurred entirely, as in the example of the virtual "sensur-

round” experience, or else standardized, in the case of the image on a monitor. A page edge like that of Philip Zimmermann’s *High Tension* (Rochester: Visual Studies Workshop Press, 1993), with its sharply cut points, is a physical, rather than visual, effect, just as the small size of the flip book is part of what makes its particular form manageable. The choices of scale and measure are an integral aspect of a page’s edge specific to its material embodiment. In Zimmermann’s case, the “edginess” of the work is communicated through this material reinforcement.



2. Philip Zimmerman, *High Tension*. (Rochester: Visual Studies Workshop, 1993. Reproduced with permission of the artist. Photo: Brad Freeman.

Pages have an inside edge as well as an outside one, and in a tightly bound book the gutter becomes a mysterious crevice into which material can appear to disappear, be swallowed or discharged, while a book that opens flat displays the full space of its interior juxtapositions, page to page, marking the boundary at the spine as neutrally or conspicuously as the work requires. But the physical act of turning, of handling a page to reveal the next opening, contains the element of surprise at each successive spread, because of the peeling back motion of the page—rather than the simple shift of place in a file that marks the sequence of “pages” in an electronic text. The oldest of film clichés—that simulated sequence of turn-

ing pages—now finds its electronic form in video games and CD-ROM formats that fetishize the esoteric mystery of the book as a sacred text or tome, turning those pseudo-pages before the eye to replicate that gradual process of revelation. Such simulacral mimeses seem likely to be short-lived—the process of manipulating independent units of text or image within the newly discrete bounded spaces of an electronic file will develop their own aesthetic, and these quotations of form will seem as quaint as the ductal patterns of the early typefaces that copied the characteristics of penstrokes into the resisting material of hard metal. Attention to the demarcation of interior spaces in the codex has also been explored by artists working in the book form, for whom this quality of discreteness carries conceptual implications as well as material ones.



Karen Chance, *Parallax*. (Atlanta: Nexus Press, 1987). Reproduced with permission of the publisher. Photo: Brad Freeman.

Marcel Broodthaers, for instance, in *Mademoise* (1986) makes several clever jokes about the interconnections among pages that play upon their physical separateness: in one instance an animal supposedly gnaws through from one side of a page to another, and stains or marks are part of another's progression through the book, as if they were signs of an actual movement. The space of the book as a whole becomes linked conceptually through this literalizing of its material construction. Interior space is a physical fact, of course, measurable and delimited, but in *Parallax* (Atlanta: Nexus Press, 1987) Karen Chance took full advantage of the interrelations of the continuous spaces of an accordion-fold book. The narrative weaves a tale of two men, one straight, one gay, interacting through incidental contacts between their otherwise separate lives. Various visual elements, such as windows, doorways, or other opportunities offering interpenetra-

tion of spaces along sightlines, are actually cut through the stiff stock on which the book is printed. These openings are constructed to work in both directions of the cut, so that what is framed in one direction (a portion of the page on the flip side of the accordion) is different from what is framed and revealed in the other, and elements that are part of a full image become an isolated view within the frame. Thus the literal spaces of the openings become articulated within the whole according to a physical logic inherent in the accordion structure.

Interior space need not be physically constructed: the same size page contains the potential for less or more visual space depending upon design—there are pages whose visual or textual complexity makes them labyrinthine traps for the eye, spaces into which one peers and through which one wanders even within the limited dimensions of a bounded page. The use of translucent or transparent sheets creates a doubled space of overlay, an effect that has been used to create a subtle sense of dimensionality in Joan Wolbier's book, *Arachne/ Amaranth* (Arlington, VA: True Grid Editions, 1983)—a work that does not reproduce well since the illusionary effects are flattened in the reproduced image. Wolbier uses abstract forms in layered patterns making a shape that is three-dimensional within the translucent spaces of the book. John Crombie looped the running texts of his work *Spreading the Word* (Paris: Kickshaws, 1987) over the edges of pages and wove them throughout the book as a whole, interconnecting the discrete pages in a pattern of reading. Interior subdivisions multiply the space of the book, with the book-within-a-book structure operating as the most elaborate method of achieving such expansion, and flaps, cut-strips, and methods of slow revelation and transformation adding their own additional spaces as well. The obvious electronic parallel takes the form of the linked files of a hypertext document or the elaborate interconnections among web sites that allow for an infinite unfolding of interior "spaces" within a single electronic "page." But it is the very need to put these terms in quotations when discussing electronic documents that calls into question their relation to precedents in the physical domain of the book. The structural boundedness of the book and the discreteness of the delimited page make the expansions produced by intercutting, insertion, or other means, into significant gestures, inserting tension in the necessarily finite form of the codex; the theoretically infinite extension of an electronic document can't register such elements as a meaningful transgression of limits.

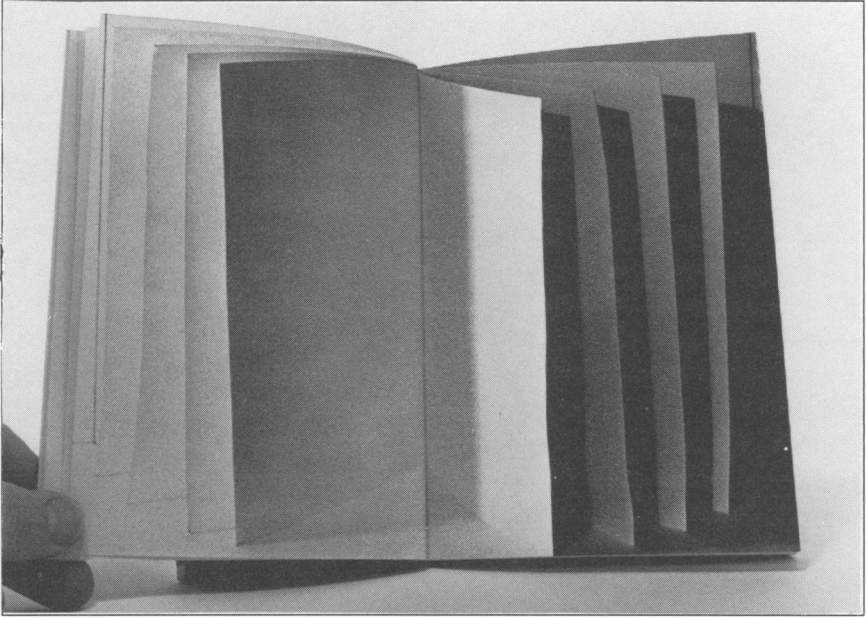
Just as the space within a book can be understood as both literal and conceptual, so time and its related concept, *timing*, can be manipulated

through physical as well as representational means. A “slow read” contrasts with a “page-turner”, a fact that can be underscored or put into counterpoint and resisted through the use of large type, small text blocks, or a tiny type size that gives the page a dense and interminable feeling. A work that concretizes the sense of time as space within the interior dimensions of a book is Jon Voss’s *Wartelist* (1984). Voss’s work consists, at its most pared down, of a single folded sheet. The outside front flap contains the words “Wartelist” (“bus stop”) and the first opening presents the reader with the image of a person sitting on a bench on the extreme left, and a bus apparently leaving the page on the extreme right. The two are connected by a roadway stretching through an empty landscape. Voss has designed the work so that interior pages may be added that contain only more road and more landscape—each added page contributes to the wait between the bench and the bus. In principle there is no limit to the number of pages that can be added, as each are identical and equally continuous, conceptually speaking. Practically, the “creep” of the pages would make the book too awkward an object after about ten or twelve interior sheets were added. In such a work, time has been concretized, rendered as a literal and spatial feature of the book. The pages are both lapsed time and extended space, the place of reading and dwelling within the sequenced sheets.

Voss’s work presents time, which is to say, the structure of the work allows time to be made tangible and perceptible through the experience of the book. Other artists have represented time through visual or verbal means, as in the case of Sol Lewitt’s *Brick Wall* (New York: Tanglewood, 1977), a work that documents the changes of light over a brick wall, mapping the lapsed time between positions of the sun. A photographic work, this book represents and references time, but the structure of the book has no particular time-based features to distinguish it from any other sequenced set of pages. Any physical book object necessarily has a time-based aspect to the experience it offers, but sequence and finitude factor into this experience on the plane of reference as much as in the structure of the work. There is no fixed temporality of reading, any more than there is a predetermined measure of time for scrolling through a document or reading a screen, scanning headlines in electronic or traditional media, or staring at a page to decipher its contents. The finitude of the codex is overwhelmingly a spatial rather than a temporal feature of its form. But there is an aspect of the codex’s structure that emphasizes what might be termed its *punctuality*, or the making of definitive spaces as moments within the continuum of the whole. The opening is the distinguishing



punctual feature of the book, and though not always self-consciously attended to, its capacity to be remade anew in each turning, each revealed space within the whole, has the capacity to make a break that is temporally modular as well as spatially discrete.



4. Helen Douglas and Telfer Stokes, *Real Fiction*. (Yarrow, Scotland: Weproductions, 1987. Reproduced with permission of the artists. Photo: Brad Freeman.

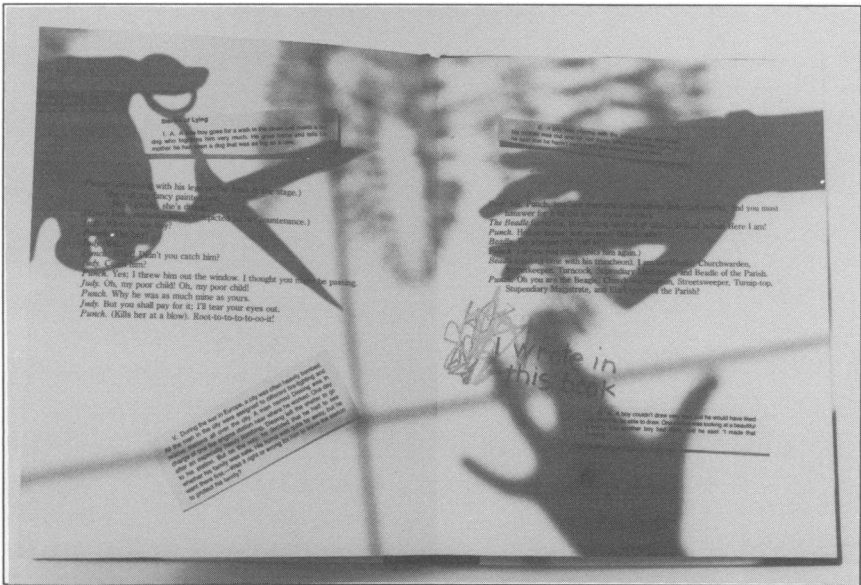
There are many artists' books that are highly self-conscious about the codex form, calling attention to and exploiting features of its concrete and conceptual properties. Helen Douglas and Telfer Stokes's collaborative work, *Real Fiction* (Rochester: Visual Studies Workshop Press, 1987), makes the interplay of representation and "real" referred to in the title into an investigation of the book as a space of illusion. A series of visual and verbal openings alternate as the images move through the photographic representation of a book that is gradually transformed into an image of a rural house in the process of being remade. The photographs begin with an image of an open book, exactly the size and shape of the actual book (thus creating the illusion of staring into half a dozen page openings) while the text suggestively weaves together themes of architecture ("threshold" and "door") with metaphors of a spatialized narrative of interrelations. The photographic image of the book's pages are modified, a whole cut open at

the base, as in a child's schematic making of a paper house. Thus the pages that have been the image of a material "support" become a structural form, while the type on the alternating pages appears to float above the paper, casting a shadow downward. The illusion of space is treated literally, while the literal space (the page) is used to support an illusion. The idea of a book as only a representation, a fiction, is rendered "real" through making it stage its own deconstruction in visual and textual terms. Though the substance of this book goes beyond mere self-referentiality, it provides the critical insight into the book as a form suggested by its subtitle, "An Inquiry into the Bookeresque." Stokes and Douglas also emphasize development—the unfolding of the book's content across the time and space of its structured sequences. Any opening removed from this order would be hard pressed to stand on its own—the visuals and the text depend upon each other, and on their specific place in a fixed relation, in order to be read—just as the whole is produced only through the sequential unfolding.

Not all books are so resolutely linear, even within the fixed parameters of the bound format. In the most obvious instance, the forward momentum of a narrative provides a compelling sense of development, while in the least obvious instance, a series of independent works—poems, photographs, drawings—can be thoughtfully sequenced according to subtle elements of juxtaposition. At yet another extreme, artists work against the progression of the book form. The inevitable one-thing-after-another aspect of the bound codex can create its own tensions. In *Three Soliloquies* (1977), photographer and artist Todd Walker has orchestrated conversations and visual dialogues across the gutter space of a book, as a contrast to the normal, linear left-to-right movement. Other artists have reinforced the static potential of the book as a series of articulated but discrete spaces whose sequential relation is merely incidental. The unbound codex, card stacks and loose sheets in a box or portfolio, are the final dissolution of those forced linkages against which the conceptual unity of the book can be defined.

A work like Janet Zweig's *Heinz and Judy* (Boston: Photographic Resource Center, 1985) maximizes the conceptual parameters of the book as a place of dramatic enactment, literal surfaces, and strategies for the construction of illusion. With its prevailing monochromatic tone, the book at first appears to be a black-and-white photographic work with text. On closer examination, the pages turn out to be color reproductions of black-and-white photographs that contain additional color elements. The visual images that fill each page are photographs of a shadow play between two sets of hands that address each other in gestures cast onto a curtain or veil.

The hands are invisible, and the sheet that traps their shadowed form is dimensionally unstable, rippling and varying their shapes. The actual page, however, remains a flat surface on which snippets and fragments of a text have been placed—as if cut from a yellowed piece of paper. These cast their own shadows onto the paper sheet, so that the printed surface is, in representational terms, part way between the invisible hands that play out their drama behind the scenes, and the textual elements that rest on its supposed surface. The effect is subtle, but conceptually sophisticated, placing literal and represented surfaces of the page into conflict with each other. And the conflicts expressed in the texts (there are several other layers to this multivalent piece) focus on psychological assessments of gender roles and behavioral differences between male and female children. Additional elements—such as a scribbled crayon mark, the wanton trace of an errant child idly leaving its handiwork—make yet another, literal, use of that page. Printed in color, this crayon scribbling makes the work seem to have its own history as an object, one in which the integral unity of artist's work is annotated according to the random nature of events. Books are objects as well as spaces of representation, Zweig is clearly announcing in *Heinz and Judy*, and this capacity to circulate freely in the world, as autonomous objects with their own trajectories and routes, is a part of the aesthetic identity that gives their cultural status a particular charge.



5. Janet Zweig, *Heinz and Judy*. Boston: Photographic Resource Center, 1985. Reproduced with permission of the artist. Photo: Brad Freeman.

As the concept of the book moves into the electronic environment, one of the key aspects of its identity that risks serious transformation is precisely this condition of independent existence. The book as an object has a longevity and shelf-life that is not dependent upon an energy source, equipment, software, or any other apparatus. Whether it is a manuscript or printed work, a book's object-identity gives it a unique mobility among artforms—dependent of individual performance and less physically vulnerable than a painted image or sculptural object. Book artist Brad Freeman makes this point clearly in the introduction to his catalogue, *Offset*, when he states that "because it exists as a portable unit, the book becomes a travelling exhibition—over its lifetime a book can insinuate itself into unforeseen locales" (New York, Interplanetary Productions, 1993). Freeman's point has been made emphatically by many artists involved with books, particularly those for whom the concept of the multiple is a key factor of their production. The idea of the multiple combines the idea of access with the idea of circulation—one can imagine that a website provides instantaneous and simultaneous access to a large audience, but the *site* of circulation is highly circumscribed, bound to its electronic support, and dependent upon complex interfaces that extend way beyond the sense system of the human organism. It doesn't take much technological imagination to suggest that at some future point solar-powered units for data-lite tasks such as text storage and retrieval will have a portability similar to that of the current paperback, but the dependence on electronics will always make *processing* a part of the object in a way that concrete and traditional books have not required—data in electronic form is by its nature *encoded*, while information in material formats is by its nature available without transformation—to the eye, the hand, and to our sense of weight, texture, touch, and smell. All of these aspects are part of the information of the book—its history and identity as well as the sum of its significant import.

The issue that has galvanized the greatest amount of critical attention in contrasting electronic and traditional media, however, is not the object status of the work, but the notion of a distinction between linear conventions of the printed text and possible alternatives. Most of these discussions mistake the fixed form of the printed support for a rigid programmatic determination of reading. The experience of browsing a book, of flipping from index to notes to marginality and back, let alone of reading a tabloid newspaper, with its deliberately fragmented and polylinear pathways through its pages, quickly belies the myth of this convention. More to the point, however, is the fact that every act of reading a text in any conven-

tional language is still, in spite of generations of poetic and commercial fragmentation, a word-by-word linear process. What excites the champions of hypertext formats is the unfixing of language from the apparent restraints of linear material structures. The novelty of such formats may, in fact, have certain advantages for information storage and access. Though the manageability of information-dense books such as telephone directories, encyclopedias, dictionaries and other reference tools is already extremely high, the cross-referencing of entries and the possibility of electronically sorting mega-databases has obvious advantages.

There are several models for conceptualizing such electronic information bases—the archive, the hypertext, and the idea of a matrix of modules without fixed relations. The archive is clearly derived from its conventional precedent, while the other two are more dependent upon the fluidity of electronic media for their conception and function. The archive concept lends itself particularly well to electronic environments because of the capacity of digital storage to contain vast amounts of varied kinds of information—and even to display them as simulacral documents upon the screen. Like a good filing system, an archive has an apparent order to it—but in electronic form this is merely an illusion and not a physical sorting of items into files, folders, and drawers of a cabinet. The archive's unique character is its capacity to structure knowledge through multiple schemes of organization. The database archive, as opposed to the concrete archive, can be re-organized and re-hierarchized according to keywords, themes, chronology, or many other attributes, thus offering the possibility for processing the information into significant patterns without disturbing the database itself. Nothing needs to be missing from the archive in order to be part of another, even simultaneous, reading of it. That these advantages are just as likely to be used for tax assessment, social control, and surveillance as for scholarship and creative work, goes without saying, but this doesn't preclude the envisioning of imaginative possibilities.

Hypertext achieves its particular mutation of the conventional text through its capacity to link sections of the document in a mutable sequence. Choosing a path or course through a hypertext document, one navigates its units according to one's whim—within the limits of the diagrammatic relations programmed into the piece, of course. Certain hypertext programs allow the reader to write into the existing text, altering its content, style, structure, or outcome, though hypertext can also be accessed with a certain passivity that comes closer to conventional reading—letting the story unfold on the screen according to the author's logic, making significant choices only where the story forks. Again, this compares with

the reading of a newspaper or magazine in which multiple stories proceed through pages with “continued” instructions moving the reader to “page x” in a maze of interlocking fragments. The reader most likely deviates along the way, reading a snippet of another story, an advertisement, or a personals column while progressing through the first text. The habits of reading conventional print tend toward ignoring these intervening distractions, though the potential for reading a complex, fragmented print form (the daily paper) as a single work, is always there. Hypertext, because of its electronic environment, unlocks the elements from the fixed space of the material support, increasing the sensation of mobility and flexibility.

A final image of an electronic reading experience is that of moving through a matrix of information that has not been linked according to an archival hierarchy or a set of story strings. The paths through such a field are associative—each choice of movement brings another set of modules into simulacral proximity (as in a virtual environment) in a three-dimensional model in which such modules are constantly being arranged and rearranged as the reader courses through them. Such a reading process has little to do with conventional narrative or reading patterns—the result would be more like a montage. Each module might have a time-based aspect, unfolding as a unit of sound, music, or performance to structure an ongoing text. But the temporal aspect of linearity—the linear aspect of human perception of time—seems unlikely to be altered by this experience. The chronological inevitability of the human lifespan marks the farthest limit of the hold of such a linear concept on the imaginative life—demonstrating that linearity is not an aspect of printed media, but a reflection of the processing of human perception into meaning. The idea that this would actually change because of the potential to move freely through units of text, image, or information seems profoundly naive.

The technological issues that currently offer potential to transform printing and publishing—the production of books in traditional and/or electronic formats—move from the most basic use of the computer as a means of direct print production to its role as a tool in complex multi-disciplinary processes. The constraints of printing media such as letterpress, relief printing, and engraving, caused a more strongly demarcated distinction between letters as visual forms and images as visual forms, than at any point prior to the invention of moveable type, or after the widespread use of photographic methods in high-speed printing, in the mid-19th century. Moveable type, cast in hot metal and dependent upon the use of a single “body” size for efficient setting, is easily the most rigid of printing technologies. Including images or deviant characters—even mixing sizes

within a line—stretched the technological limits of the medium. But the capacity of an engraver to render verbal elements in elegant, imaginative, and legible ways always preserved the calligraphic potential for linguistic invention in print form, and the interweaving of visual and verbal elements. Stone lithography, and its high-speed counterpart, photo-lithography, had rendered the visual/verbal distinction moot in technological terms. The imaginative drawings of 19th-century artists allowed the blending of visual and verbal modes that participate in the synaesthetic sensibility of late 19th-century Symbolists, as well as that of the Arts and Crafts movements, bequeathing a legacy of self-conscious attention to the visual properties of language to the early 20th-century avant-garde. In the electronic environment, letters and images may enjoy such flexibility, but they need not. There are software programs that treat letters as objects, respecting their identity, and others that treat them as elements of a pixel-structure subject to the same transformations and mutations as any other image. Further extending the mutability of electronic media, keyboarded input may be output as a musical score, a code for a textile pattern, a visual image or any other of a dozen possibilities. This fungible, mutable quality of language as information (of anything as information in the electronic environment) is unique to electronic media. There is no longer any necessary relation between the form of input and the form of output—because all data assumes the same binary form in the storage system of the electronic processor, independent of material support.

In terms of the professions of printing and production, electronic media collapse many functions that were formerly independent skills of the publishing industry into the single responsibility of the person at the computer. Such skills as design, typesetting, layout, mechanical paste-ups, stripping, imposition and so forth are now folded into electronic darkroom programs. The effect is often disastrous, since individuals unfamiliar with the traditional techniques have little expertise in interpreting the complex technological aspects of these programs in a way that yields results at the same level of professionalism conventionally provided in a standard job shop. The first-generation result has been bad design, murky half-tones, poor production values, and an overall degradation of day-to-day printing—and a gain in convenience of access. For artists, the potential to perform all kinds of visual and design manipulations in the clean comfort of the home office or studio, rather than in the chemical-laden environments of traditional print shops, is a significant advantage. The major remaining difficulty is that of moving from a well-resolved document displayed on the monitor screen to some form of hard-copy output. The advantage of

websites is that they obviate such a need, allowing that the electronic environment will be the terminus point, as well as the site of generation, of the work itself. But despite its use of texts, images, animation and sound, websites are a different species from codex books. They have many advantages — flexibility of scale within an image, potential for movement through the depicted image or text, and an infinitude of interior spaces. But the gap between one electronic space and the next is infinitely divisible, and the signifying function of discreteness, on which the codex book depends, is fundamentally absent from the electronic environment. Sequence is an active feature of structure in both websites (and other electronic media such as CD-ROMs) and books, but the relation of sequence to form lacks the punctual definition of the material object, when it shifts into the electronic environment. Boundedness has little meaning in the flexible environment of electronic space, and the terms of meaningful relations are structured according to distinctly different parameters than those of the finite book. In both cases, the “reading” experience is time-based and linear, no matter how spatialized and visually diverse the representation, in keeping with the fixed chronology of human processing.

The final specter raised by electronic media seems to be the threat posed to certain values of artistic labor and production. Never highly valued, though extremely fetishized, artistic labor is assessed in contemporary culture according to a highly distorted scale—with an exaggerated value at the high end and a less-than-liveable wage at the lower extreme. One of the few means artists have found by which their individual expression could reach an audience beyond their immediate circle has been through books; clearly this function is duplicated and in many ways more fully achieved by websites and electronic activity. Access remains limited to those who are on-line—possibly the same elite who have had an interest in artists’ books, and possibly not. But the issue of labor in relation to production doesn’t disappear in electronic media—it seems to intensify—since the question of return on investment of time, talent, energy, and imaginative thought is clearly an open one in the electronic world. Very few artists live off of book production. The number of consumers is too small, the audience too rarified, the systems of distribution too limited, but there is a return on artistic labor in the production of books, which seems to disappear immediately in an electronic site of production. Increasingly, it is those artists who have institutional relations to the web, are part of a teaching or production environment, or who make their living in some industry-related area, who seem to have access and skills to navigate the web. This, again, merely replicates the situation in artists’ book production,

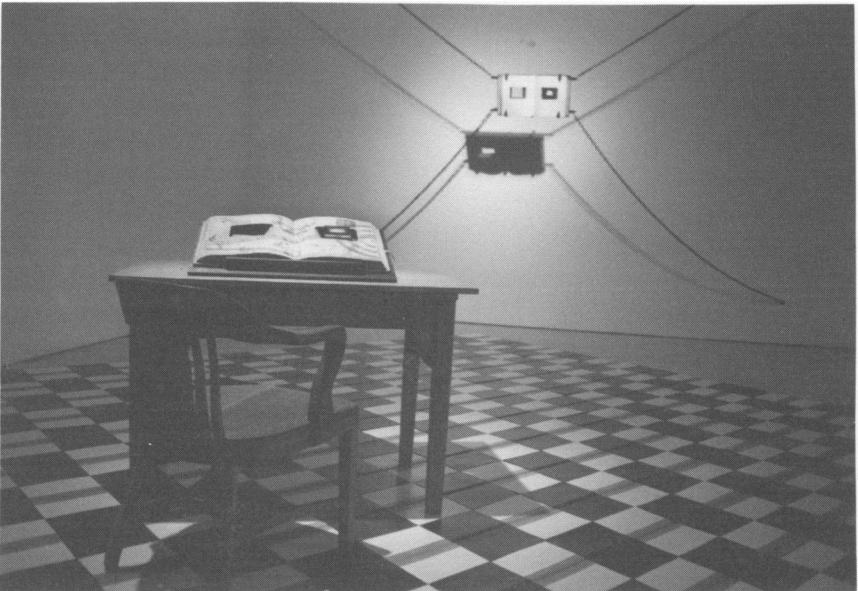


where most serious practitioners acquired skills and access to equipment by working in print shops, design studios, art schools, or other industry-related environments.

Ultimately, the formats of electronic art and communication seem destined to develop their own logic, and the tropes that designate books as material objects will disappear, as irrelevant and not particularly useful. But it is my conviction that the capacity of the human organism to process data into meaning depends upon editing, elimination, finitude and focus, rather than upon the superstimulatory overload of the senses. Editing towards meaning is a fundamental skill of human survival, through the selection of pertinent information, which accumulates in a significant pattern. The capacity to sense fragmentary, random, and non-significant sequences of information results in sensation, not meaning. Linearity does not seem so much a habit of print as print is a reflection of the need for a degree of organization in the encounter with the world—the embodiment of the moment-by-moment sequencing of perception and process, sensation and thought. No one's experience of existence is rigidly fixed into a single temporal sequence—the expanding matrix of sensation registers as a continually shifting field within which consciousness attempts some kind of monitoring towards meaning. Visual systems have always belied the simplistic belief in the hold of linear patterns of language on thought, and the synthetic reproduction of concepts and ideas in the electronic environment encourages the most flexible of interchanges among modes of representation, and thus of perception. When the mind wanders from the orderly progression of words in a line, on the page of a book, on the face of a monitor, it engages in a wash of sensation that does not necessarily correspond to language. The symbolic field of its representation—principally linguistic—and the logic of human understanding, are profoundly linked to chronological time. Ultimately, the repleteness of the material world, its infinite variety and specificity, will always find only a simulacral phantom in representational modes—and in this regard, the electronic forms of writing, image-making, movement, sound, and even tactile sensation, will always depend on the capacity of humans to give a significant shape to this data. The richness of the material world did not make it art—any more than the information density of the electronic environment makes it artful. It was never the capacity for inclusion that rendered life or thought or experience meaningful, but the decisive processes of exclusion. As artists, we have always had infinite possibilities—the blank page, the waiting monitor, the keyboard, the fresh tubes of paint and the empty canvas are all equally charged with potential. The function of art has been

to render some of those significant. Sequence and finitude, boundedness and significant relations of juxtaposition and developed interconnection are the legacy of the codex book to electronic media. This is not meant to privilege the value of order over chaos, meaning over sensation, or pattern over random stimulation, but merely to point out the distinction between the raw materials of sensation and the forms of artistic expression.

It is clear that certain conventions of the codex form—indexing and access devices, the metaphor of the “page” and so forth—will find their simulacral equivalent in the electronic book. It is equally evident that there will be new paradigms and new parameters in the ordering, structuring, and experiencing of data, as the new technologies mature to the point of finding new patterns of thought and creative expression. Whether these forms will be so different from books as we have known them that it becomes pointless to try to articulate them as new versions of an old idea—just because they contain language, images, and are read doesn’t mean they have to be called books—or whether they will evolve into something entirely new, it’s clear for the moment that electronic and conventional media are in dialogue to forge new forms and new definitions. Special effects aside, the problem of the book remains what it has always been—the challenge of having a means to express material and language in form and image.



6. Marshall Reese and Nora Ligorno, *The Corona Palimpsest*. (New York: Christenrose Gallery, 1995.) Reproduced by permission of the artists. Photo: Mark Daniels.

Nora Ligorano and Marshall Reese, in a 1995 installation piece, *The Corona Palimpsest*, structured their inquiry into these new relations by inserting a video monitor into a codex book as a framing device. This was a real book—bound, with its finite and sequential pages richly decorated with visual images, painted, screened, and stencilled. The installation contained a second book, suspended by heavy metal chains, in which a second video monitor played a loop of eyes, watching you, the reader at the first book, which contained a poetic text (by Reese). A video camera monitored the entire scene, and the floor of the installation, comprised of remaindered books, was arranged in a checkered pattern like a linoleum floor. To engage with the installation, one had to walk on the books, an evident act of transgression. What seemed to be offered in that work was not so much a choice between an old medium and a new one, but a problematic recognition that there is no choosing *either* one as if it *replaced* the operations of the other. If the tropes of the book form shape the metaphors of the new technology, then the conceptual construct that emerges in the hybrid process will return its transformative template to earlier form, and both will be changed in the process. The current tension of the book (its anxiety about identity in relation to new possibilities) reflects the present tense of electronic media continuing to come into being. This is not a contrast between the space of the real and the space of the virtual, but between two modes of imaginative life for thought, language, and the eye—each competing to determine relations of history, language, and thought. As the page was once written, so the monitor now redraws itself. The new temporal logic of history remains to be seen. Now the transcript is watched, not just read—and in return is watching its readers, who struggle to preserve some illusion of participation in the process. Where will the marginalia appear, the annotations of the reader, if the history that writes itself in the future is always on the inside of a glass surface that resists inscription? Whose idea will have been a moment on the screen, and whose will have been impressed on the receptive pages of a more tangible memory, when both are proved to be material traces of the elusive processes of thought and human experience?

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