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SLIDES, TECHNICAL DESCRIPTION OF SUBMITTED WORKS

Hardware: PC operating on DOS and Houston Instruments multipen plotters (DMP-52 (Boole book edition) and DMP-62 series (Ezekiel series). Chinese brushes adapted to fit plotter's drawing arm.

Software: Software written by the artist using Basic and Digital Microprocessor/Plotting Language (DM/PL, Trademark). This software, *Hodos*, along with a PC constitutes a personal expert system which automatically generates work following the artist's instructions. The code, evolved over a decade, has grown to thousands of lines. The *Ezekial Series* uses revised or new routines which the artist has not yet exhibited (as of February 1993).

ENTRY ONE: A1-A4. *Diamond Lake Apocalypse: Ezekial Series, Folio LNZ3, 44" by 30", 1993.*

A1. Full View

A2-A4. Details: central portion, bottom, top.

ENTRY TWO: B1-B4. *Diamond Lake Apocalypse: Ezekial Series, Folio LNZ4, 44" by 30", 1993.*

B1. Full view.

B2-B3. Details: central portion, top.

B4. Lower left initial. Black initial linework is code plotted with a #4 technical pen; shape is derived from relationship of initiating control points reflected on both the "X" and the "Y" axes. Gold applied by hand.

ENTRY THREE: C1-C6. Sample frontispiece and illumination derived from the control points of the sample; this is 1 of 125 frontispieces created for a limited edition of the *Derivation of the Laws* by George Boole. The limited edition has an original, "one of a kind" frontispiece and endpiece for each book. These were plotted with the artist's software demonstrating the reproduction of a family of forms derived from a single set of parameters. Using a "chaotic" system and a different "seed" for each piece, the artist generates his works in series with each work bearing a familial resemblance to the others in the series. This work is a tribute to George Boole whose "Boolean Logic" is essential for circuit board and software design.

C1. Frontispiece # AQ2, open size is 20 inches by 6 inches, 1990. 1 of 125 original plots. This "one of a kind" was plotted on Frankurt Text with 12 ink pens mounted on the plotter; Chinese brush adapted to the plotter for brush strokes.

C2. Illumination derived from the control points for Frontispiece # AQ2, 1992. Full view, 30" by 24". The control code for each frontispiece was archived making it possible to clone and/or improvise on the original. This kind of illumination is offered as an option for owners of each book. It is even possible to "feed" the original control points to recently evolved algorithms. For example we could now generate an Ezekial series version of the frontispiece # AQ2.

C3-C4. Details of illumination: top part and bottom part.

C5. Shows a sample page of 5 frontispieces as plotted before tearing.

C6. Shows a sample page of 5 endpieces as plotted before tearing.

EPIGENETIC ILLUMINATIONS

Epigenetic. The term *epigenesis*, borrowed from biology, refers to the process whereby a mature plant is grown from a seed or genotype (DNA). By analogy, the art work (phenotype) is "grown" from the software (genotype). The procedures for "growing" the work may be viewed as "epigenetic". This process was outlined in my paper "Epigenetic Painting: Software as Genotype" (TISEA (Utrecht), 1988) and published in *Leonardo* in 1990. The code (genotype) for each series of my works is capable of generating a family of forms with each being "one of a kind".

Intentions. For the past decade I have been writing code as a procedure for investigating form. My work seeks to unfold aesthetic possibilities through coded electronic procedures. My approach to art holds a reverence for the materials of earth and a sense of wonder about most things including circuit boards and computer languages. I strive to create well crafted works with iconic qualities that evoke mystery and act as signs pointing to some greater reality. The texture and quality of materials are carefully chosen and transformed in the process. For me, the work should have an aura that draws the casual viewer to pause for a moment recognizing that the work embodies a human endeavor going beyond material concerns.

The Work. Code generated scripts and illustrations are presented as "illuminated" pages reminiscent of medieval manuscripts. The scripts and illustrations were executed with a multipen plotter coupled to a PC. The plotter draws from an array of technical pens loaded with inks mixed in the studio. All brush strokes were plotted using Chinese brushes adapted to the machine's drawing arm. The program code is written in Basic with the plotter protocol in the Digital Microprocessor/Plotting Language. Each page, plotted on rag paper, is enhanced with a touch of pure gold or silver leaf, applied by hand. However the illuminated "initials" (design elements) are always code generated and machine plotted.

Structure. The "illumination" for each work was realized with code driven improvisations based on a single initiating stroke. This stroke, generated by randomly cast control points, can be seen in the brush strokes. Software procedures provide parameters to create reflecting or mirror strokes on either or both axes or none at all. The "script" headers and initials are derived algorithmically from the same set of relations; thus a "self-similarity" permeates the whole. The same algorithm and control point parameters were used for the asymmetrical Boole book frontispiece and the enlarged symmetrical illumination made to complement that specific copy of the book.

Content and Meaning. One could think of these *illuminations* as diagrams or visual analogues to the coded procedures with which they were made. The essential character of the finished work is derived from the "form-generating-procedure" or "algorithm" acting as *genotype*. For this reason one could say that the finished work is an epiphany (manifestation) of the artist's code.

Each work celebrates its code, especially the recursive routines which shaped its character. Parameter controlled recursive loops provide an awesome means for visualizing form-growing concepts. Such routines provide access to an infinity of visual worlds never before seen by the human eye. It is noteworthy that such procedures hold much in common with processes associated with crystallization and genetics.

These *Epigenetic Illuminations* invite us to savor both the beauty and the mystery of these coded procedures - not so much for their stark logic as for the grace and poetry they yield. These procedures provide a window on unseen processes shaping mind and matter. By doing so they become icons illuminating the mysterious nature of Earth and Cosmos.

Roman Verostko, Minneapolis, February 1993.

PHYSICAL STRUCTURE AND PROCEDURES:

- *papers*: Archival quality rag papers.
- *Pens and Inks*: Both steel and carbide tipped pens with refill wells are used. The artist mixes inks establishing a palette of from 6 to 12 colors for each work. The pens are mounted in pen stalls on the plotter (up to 14 available). Pen-change decisions are software controlled.*
- *draw lines*: All drawing activity is code generated. Most routines are initiated with randomly cast control points within preset parameters.*
- *brush*: A software brush routine causes the plotter to pause and call for a brush to be physically mounted on the plotter's drawing arm. The artist literally hands a loaded brush to the plotter on demand. Brushes are oriental and adapted by the artist to fit the plotter's drawing arm.
- *gold leaf*: A selected area on each illumination is handcrafted with genuine gold except for the frontispieces of the Boole book edition. "Initials" are code driven and plotted along with the rest of the work. Gold is applied only after the underlying strokes have been code generated and machine drawn.

**Software driven decisions* are derived from a randomizer and filtered through controlling parameters designed and preset by the artist. Each routine used by *Hodos* requires many such decisions for each loop.