

Kevin Clarke, *Portrait of Jeff Koons*, 1993, Cibachrome photograph, 72 x 48 inches. Courtesy the artist.

From the *Blood of Poets*

KEVIN CLARKE

Today, notions of individuality are dissolving, in part due to chemical procedures that alter a person's genetic makeup. In my photographs I explore portraiture by combining an "individual-specific" DNA sequence derived from the blood of my "sitter" with an image that I associate with the person. I photograph with a color negative and retain the negative in the final print.

In 1987 I began a collaboration with genetic research scientists and with a small company, Applied Biosystems, manufacturers of DNA-sequencing equipment and chemical agents. My graphics adhered to the following prototype: my own DNA was isolated from a blood sample, caused to self-replicate in a controlled way, and sequenced. The procedure focused on a specific region of my genome.

As new chemical procedures have come along, I have incorporated them into my portraits so that the portraits are state-of-the-science genetic representations. My guiding questions are notions of individuality and the point

when individual characteristics converge into a portrait. Although I use a systematic method, pictorially, I try to remain as free as possible.

My portraits include the dancer Merce Cunningham, his chromosomes shown with falling Mikado sticks; the musician La Monte Young, featuring a pastoral landscape with steeplechase; and artist Jeff Koons, incorporating a slot machine. The men and women I choose as subjects are people who interest me and with whom I am acquainted. Acquaintance helps when asking a person for some blood, and many of my requests have been greeted with silence.

As an experienced photographer I have been startled to recognize parallels between the methods of early photography and genetics. Both record substances regardless of scale. For decades, radiologists, crystallographers, and those who record karyotypes (photographs of chromosomes) have employed procedures inherently parallel to photography, the chemical reproduction of a world made visible in negative. It is not the thing itself that the geneticist views, but the shadow of the thing, its chemical trace.

In PCR (polymerase chain reaction), discovered by Kary Mullis, rapid automated DNA is isolated and separated from its helical opposite, like separating one half of a zipper from the other. One half is chemically induced to replicate. While replicating, the density of the bases of the newly generated nucleotide is measured and defined by a laser. The light from the laser allows an invisible substance to be captured and analyzed with precision.

Through genetics I have arrived at an approach to portraiture that is at the roots of photographic thinking. These are portraits with a focus on the invisible.

Note

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Artistic Vision and Molecular Genetics

AGNES DENES

Pattern-finding is the purpose of the mind and the construct of the universe. There are an infinite number of patterns, some of which are known; those still unknown hold the key to unresolved enigmas and paradoxes.¹

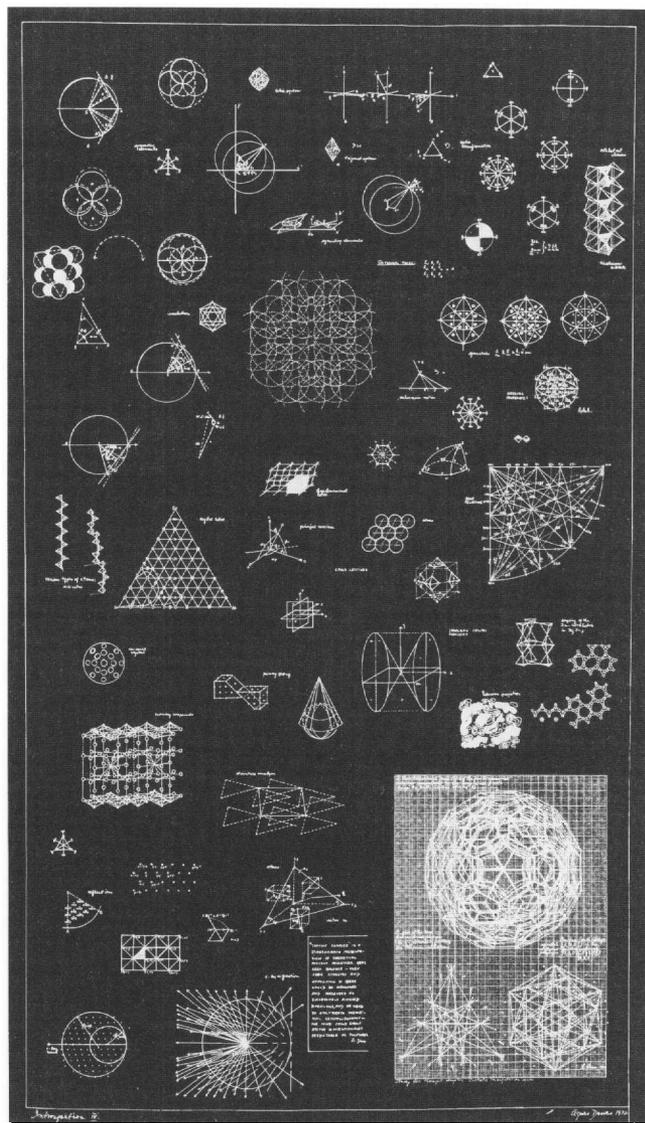
For over twenty-five years, I have been consistently synthesizing science into my art, exploring themes that have become prominent in the new genetics. Although my art was not created with genetic engineering in mind, it foreshadowed today's research developments

and the realization that we need to know who we are and where we are heading, and that some of this information lies in the mapping and visualization of invisible, elusive processes. Scientific innovation can go hand in hand with innovative art that seeks to overcome its boundaries in order to explore the invisible, underlying structures and operations of existence.

Around 1966 I began work on *Visual Philosophy*, an investigation launched across a wide range of human knowledge in an attempt to create a flow of communication among disciplines alienated through specialization. The work evolved into a visual expression that incorporated scientific and philosophic thought and a spectrum of analytical concepts questioning human evolution, value systems, and the survival of the species. My investigations included the sciences and technology, theology and linguistics, future urban planning and global issues of survival. I created visual metaphors for such abstract concepts as time, evolution, thinking processes, mathematics, and logic.

Many of my works, such as the *Introspection* series, have explored genetic metaphors. *Introspection I. Evolution* (1969–71) is a seventeen-foot mural that traces human evolution through man's physical and cultural development. *Introspection II. Machines, Tools, & Weapons* (1972) investigates and charts the growth of technology and man's understanding (lack of) his own inventions (i.e., what will man do with gene literacy?), while *Introspection III. Aesthetics* (1972) analyzes the processes of art making and reads the art by penetration of its layers and surfaces. *Map Projections* (1973–79) maps space and human perimeters, while *Thought Complex* (1972) diagrams combinations of thought sequences to arrive at brain functions (pattern recognition, capacity for inventiveness), creating possible maps for the mind. *Syzygy* (1972–73), another work completed around this time, is an anatomical study of reality. It is a visual metaphor for time/space infinity, illustrating that the human mind can transcend barriers of time, space, even its own cognition. *Strength Analysis—A Dictionary* (1971) maps language—words, signs, and symbols—the bits and pieces that make up the “script” of human communication (my personal Genome Project took eleven years to complete, seven of which were spent buried in Webster's unabridged dictionary, 1965–71). *Morse Code Message* (1969) brings into analytical view another intangible and invisible system—religion. When “the word” is translated into veiled signs and symbols, “the meaning of the message” is allowed to re-emerge as new insight.

Pattern recognition, mapping, sequencing, decoding, and visualizing make up the language of molecular genetics. Finding invisible patterns, interpreting the text, and applying the results is what the Genome Project is all about. When art renders into visual form these analytical processes, the hybrid becomes the script in a new language of seeing and knowing: a summation and dramatization of



Agnes Denes, *Thought Complex—Mapping the Mind: Sequential Visualization of Combinations of Thought Patterns as Applied to Theoretical Crystallography*, 1972, ink, 36 × 22½ inches. Courtesy the artist.

new associations and analogies. The powerful tools of this new science can thus be enhanced by the equally powerful tools of artistic vision, image, and metaphor, which become expressions of human values with profound impact on our consciousness and collective destiny.

There are many questions that remain to be answered. Can this benign force be a match for the forces unleashed by the full knowledge of the human genome? What will the benefits, ethical ramifications, and overall impact of a genetically manipulated future be for our civilization? Will genetic engineering change humanity forever?

Note

1. Agnes Denes, “Evolution and the Creative Mind,” was written in 1967 and delivered as a lecture in 1974 at the National Gallery of Art, Smithsonian Institution, Washington, D.C. It was later published in part in Agnes Denes, *Book of Dust—The Beginning and the End of Time and Thereafter* (Rochester, N.Y.: Visual Studies Workshop 1989).