

Manfred Mohr – the groovy German who taught computers to make art

The art world pioneer spotted the creative possibilities of algorithms back in 1968. He talks about working nights for 11 years, invisible 'hypercubes', and why computers can go to places 'I can't go because I'm standing in the way'

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Pioneers of abstract art own their territory in perpetuity. Paint-drippers walk in the footsteps of Jackson Pollock, minimalists contend eternally with Donald Judd, light artists live in the shadow of Dan Flavin. The stakes are high: either you're original or you're derivative, so it's not surprising that occasionally an artist goes so far out there, it takes a while for the world to catch up. Such an artist is Manfred Mohr.

Half a century spent in pursuit of the new doesn't seem to have worn him out at all. He's brimming with energy, a benevolent mad scientist, with a groovy German accent. "The most important part of art is innovation," he says. "That means that you do something which was not there before."

Not only was Mohr one of the very first artists to work with a computer, he was absolutely the first to allow the computer to generate, rather than merely execute, an artwork. Arriving at abstract expressionism in the late 60s, he was troubled, as only a German abstractionist could be, by how irrational his painting was. Then he picked up a book by German philosopher Max Bense.

"He said: 'If man can go to the moon, we can also have rational art,'" recalls Mohr. "I thought: This guy is right! But what is rational art?"

The earnestness with which Mohr approached the problem speaks of a particular time and place. Sure, he explains now, a straight line could be rational, but only in its form. For a line to be truly, rigorously rational, it would have to be logical even in its conception, its reasons for being there. How could this be executed?

Living in Paris, Mohr was lucky enough to form a friendship with the composer Pierre Barbaud, who was using algorithms to create music. Mohr, an accomplished musician himself, realised this represented an entirely new avenue of expression: "I suddenly understood that what I had to do was to write algorithms: rules and paths which you put together in a logical way," he says. By applying algorithms to lines, you could create what Mohr dubbed "programmed expressionism".

Mohr understood that to take his experiments further he'd need a bigger calculating machine: a computer. But in 1968, that meant a large, air-conditioned university building containing banks of equipment, punchcards and magnetic reels. He happened to read the Paris Institute of Meteorology was using a computer to draw weather maps. "So I went to this institute, like an innocent, and walked in and said: 'Can I work with you here?'"

Two weeks later, he was offered an audience with the director of the department. “We had a fantastic talk. He even put his hand around my shoulders and said, ‘When I was young I wanted to be an artist too.’ Then I knew I had the space.”

For the next 11 years, Mohr would go to the institute to work on his research at night, while the meteorologists used the computer during the day. He was the envy of peers trying to break into the field. “I was living in paradise,” he says wistfully, “No one had my machine.”

Like many creative people at the time, he was influenced by Marshall McLuhan, whose book *The Medium is the Message* (the title a play on his quote “The medium is the message”), suggested that humans extended themselves through machines. “Through the machine,” Mohr says, “I become the super-version of myself.” With the computer he could reach areas otherwise inaccessible, or as he puts it, “places that I couldn’t go into because I’m standing in my way.”

And, yet, there was still further to go. Each work, with its own individual mathematical underpinning, was unrelated to the next. He longed for a mathematical system, which he could play like a musical instrument.

His solution was the cube. “The cube is a structure of 12 lines, that I could play with by taking lines away or cutting them in to two or four parts.” At first, Mohr used a 3D cube, but after a time he realised the cube could be extended beyond visible space into six, eight or even 12 dimensions. From here on, things get weird, because such a “hypercube” – as Mohr calls it – can only be perceived by a computer, and only partially represented in 2D space.

So while these paintings may look like a compelling examples of abstract expressionism, they really represent the algorithms that underlie them: pure semiotics, rational in composition and execution. Mohr had not only proved his theory, he’d successfully materialised abstraction. “Let’s say, in 1000 years, if the machine is still working and someone runs the programme,” he says, “... [it will] still be my thought from today.”

Mohr’s ideas of the relationship between the artistic mind and the machine may seem far-out, but they prefigure the way we use technology every time we reach for our iPhone to Google something. Today, algorithms guide everything from where we have lunch, to what we listen to, to who we date next. In Mohr’s work, they are made visible, in all their weird geometric beauty. In 1968, he had already begun to conjure up the spirits of the age to come.

Artificiata II is at Carroll/Fletcher, London, from 12 February to 2 April. Manfred Mohr is also part of *Electronic Superhighway (2016-1966)* at the Whitechapel Gallery, London, until 15 May.

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