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Conversations – Interview by Anika Meier – 24.07.2023

BENJAMIN HEIDERSBERGER: THE TRANSITION FROM ANALOG TO DIGITAL
GENERATIVE PHOTOGRAPHY AND ALGORITHMIC ART

Benjamin Heidersberger has devoted a part of his life to carrying on his father's legacy. As a pioneer in generative photography and algorithmic art, Heinrich Heidersberger left behind an extensive oeuvre consisting of his distinctive RHYTHMOGRAMS as well as, among others, photographs of architecture, macro shots, and experiments with lightning in nature. His explorations in the fields of generative photography and algorithmic art have gained international recognition. His RHYTHMOGRAMS are part of the collection of the Museum of Modern Art in New York. Recognising the relevance of his father's early experiments with generative photography, Benjamin Heidersberger continues to educate and spread his father's work, finding an echo in today's generative art movement. Located in Wolfsburg, the Institute Heidersberger is home to the artist's body of work as well as his hand-made device, the RHYTHOMOGRAPH, a pendulum that creates traces of light on photographic material via a mechanically linked mirror and a point source of light.

In conversation with Anika Meier, Benjamin Heidersberger discussed Heinrich Heidersberger's legacy, his evolution as an artist, his impact on the art world of today, and the mission of the Institute Heidersberger.

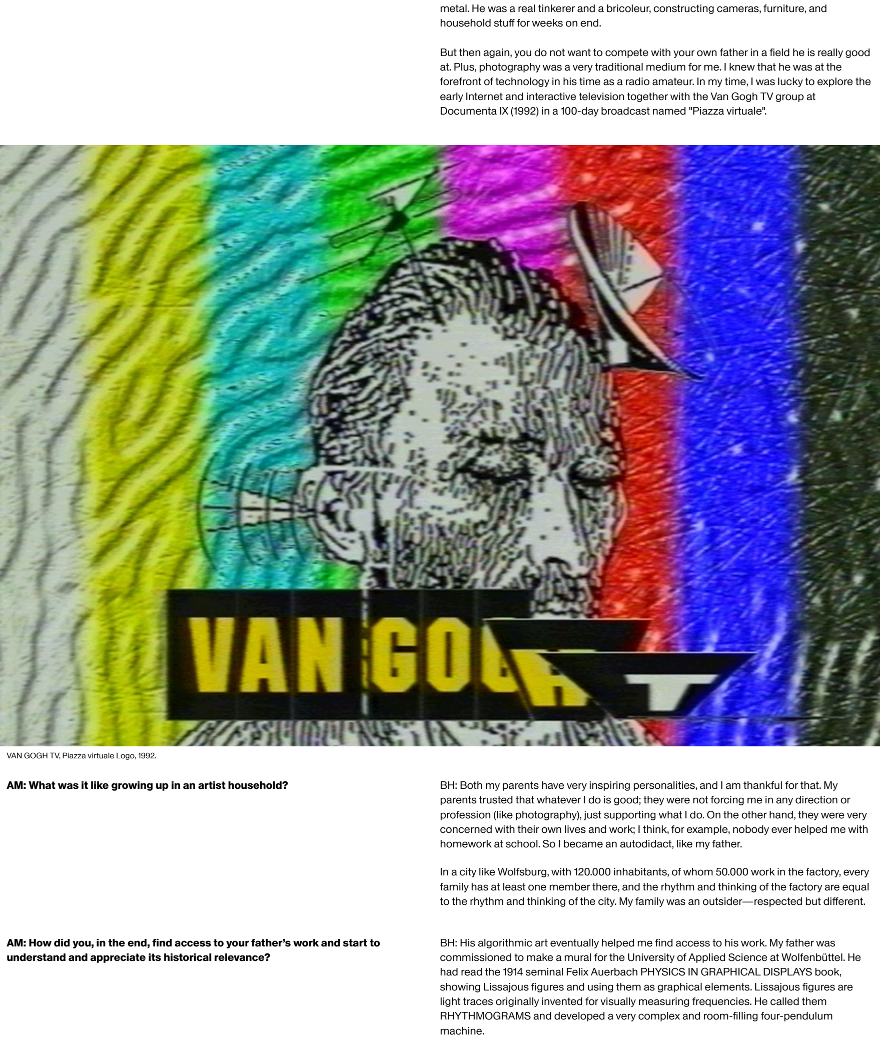
Anika Meier: When did you first come into contact with the art of your father, Heinrich Heidersberger?

Benjamin Heidersberger: I am the oldest son of my father's second marriage with the actress and theater director Renate Krüger. My family moved from Braunschweig to Wolfsburg when I was six because the city gave him an atelier in the castle, together with a dozen other artists, to inspire the city's atmosphere, heavily influenced by the Volkswagen factory.

I grew up quite nerdy, reading a lot and doing mainly physics, chemistry, and electronics experiments. At age 15, I built my first computer with telephone relays and later studied physics, biology, and computer science at the Technical University of Braunschweig for a while. But then I met the painter and sculptor Peter Elsner, and we formed the interdisciplinary artist group "Head Resonance Company", working in the fields of music, performance, architecture, computer, and video. And later, I worked a lot with the group Minus delta t, participating in the "Bangkok Festival" in 1983.

So from the very beginning, I was on my own trip, aside from photography. My father, being 51 years my senior, left every morning at eight o'clock and returned late in the evening. He had himself built a paradise at the castle with a huge workshop, darkroom, and studio, where I learned a lot from him. Photography, of course, but also working with wood and metal. He was a real tinkerer and a bricoleur, constructing cameras, furniture, and household stuff for weeks on end.

But then again, you do not want to compete with your own father in a field he is really good at. Plus, photography was a very traditional medium for me. I knew that he was at the forefront of technology in his time as a radio amateur. In my time, I was lucky to explore the early Internet and interactive television together with the Van Gogh TV group at Documenta IX (1992) in a 100-day broadcast named "Piazza virtuale".



VAN GOGH TV, Piazza virtuale Logo, 1992.

AM: What was it like growing up in an artist household?

BH: Both my parents have very inspiring personalities, and I am thankful for that. My parents trusted that whatever I do is good; they were not forcing me in any direction or profession (like photography), just supporting what I do. On the other hand, they were very concerned with their own lives and work; I think, for example, nobody ever helped me with homework at school. So I became an autodidact, like my father.

In a city like Wolfsburg, with 120.000 inhabitants, of whom 50.000 work in the factory, every family has at least one member there, and the rhythm and thinking of the factory are equal to the rhythm and thinking of the city. My family was an outsider—respected but different.

AM: How did you, in the end, find access to your father's work and start to understand and appreciate its historical relevance?

BH: His algorithmic art eventually helped me find access to his work. My father was commissioned to make a mural for the University of Applied Science at Wolfenbüttel. He had read the 1914 seminal Felix Auerbach PHYSICS IN GRAPHICAL DISPLAYS book, showing Lissajous figures and using them as graphical elements. Lissajous figures are light traces originally invented for visually measuring frequencies. He called them RHYTHMOGRAMS and developed a very complex and room-filling four-pendulum machine.

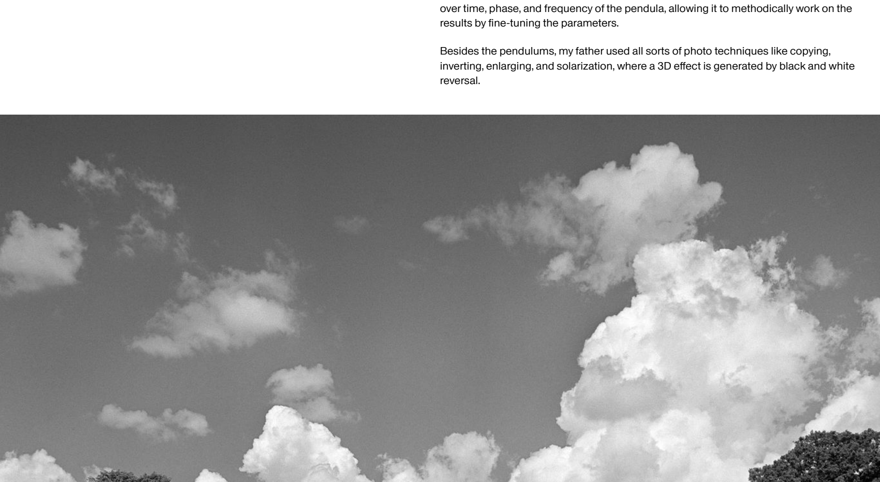
I understood that pendulums can be simulated by oscillating filters in an analog computer, and at the age of 23, I rebuilt his RHYTHMOGRAM machine electronically, generating the output on an oscilloscope screen. Today, this is called oscilloscope art.

Heinrich Heidersberger, Mural in Wolfenbüttel, 1955.

AM: I've visited the Institute Heidersberger in Wolfsburg, in the castle you've just mentioned. The machine is room-filling and, from what I understood, still fully functioning. How does it work?

BH: My father used four pendulums. Their movements are mechanically coupled to a mirror. The mirror deflects a point of light onto a photo plate, recording the ten minutes of time it takes for the pendulums to come to rest. What is very unique is the precise control over time, phase, and frequency of the pendula, allowing it to methodically work on the results by fine-tuning the parameters.

Besides the pendulums, my father used all sorts of photo techniques like copying, inverting, enlarging, and solarization, where a 3D effect is generated by black and white reversal.



Wolfsburg Castle, 1962.

AM: It's a drawing machine that creates artwork based on generative photography and algorithmic art. Would your father have agreed? How did he position the RHYTHMOGRAMS within the history of art?

BH: Gottfried Jäger called it generative because, as far as I understand, an image is generated as opposed to traditional photography, where you have an object, a lens, and an image. I prefer algorithmic (named after the Persian polymath al-Khwarizmi (ca. 780–ca. 850)) because a more or less autonomous formula or machine is between the artist and the art, acting out the artist's intention.

With the advent of digital computers, we live in the age of algorithms, which now control our lives in every aspect. The RHYTHMOGRAMS sometimes look like digital art, but in fact they are analog with all the imperfections and glitches, marking the transition from analog to digital. Also, in the lifetime of my father's work, the perception of photography changed from handicraft to art; that might have been a driving force.

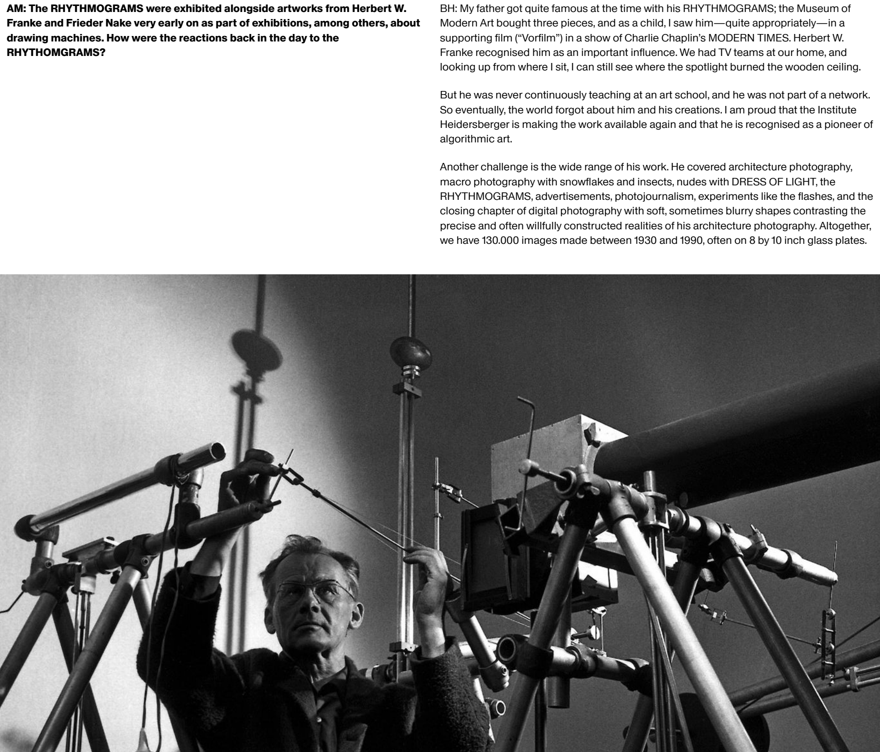
He was an intellectual, and he knew about the history of art, but I never heard him talk about his position there. He just did it because he had to, following an inner vision. Others then called him a pioneer.

AM: The RHYTHMOGRAMS were exhibited alongside artworks from Herbert W. Franke and Frieder Nake very early on as part of exhibitions, among others, about drawing machines. How were the reactions back in the day to the RHYTHOMGRAMS?

BH: My father got quite famous at the time with his RHYTHMOGRAMS; the Museum of Modern Art bought three pieces, and as a child, I saw him—quite appropriately—in a supporting film ("Vorfilm") in a show of Charlie Chaplin's MODERN TIMES. Herbert W. Franke recognised him as an important influence. We had TV teams at our home, and looking up from where I sit, I can still see where the spotlight burned the wooden ceiling.

But he was never continuously teaching at an art school, and he was not part of a network. So eventually, the world forgot about him and his creations. I am proud that the Institute Heidersberger is making the work available again and that he is recognised as a pioneer of algorithmic art.

Another challenge is the wide range of his work. He covered architecture photography, macro photography with snowflakes and insects, nudes with DRESS OF LIGHT, the RHYTHMOGRAMS, advertisements, photojournalism, experiments like the flashes, and the closing chapter of digital photography with soft, sometimes blurry shapes contrasting the precise and often willfully constructed realities of his architecture photography. Altogether, we have 130.000 images made between 1930 and 1990, often on 8 by 10 inch glass plates.



Heinrich Heidersberger, Self portrait with Rhythmograph, 1962.

AM: When we go even further back in time, the poet Jean Cocteau was very impressed by your father's work and collected a few RHYTHMOGRAMS from him as a birthday present for Picasso. What do you know about this story?

BH: In a 1962 letter to my father, Jean Cocteau wrote about the RHYTHMOGRAMS: "Let's admire even if we cannot understand! That's the only way to escape the darkness of Cartesian philosophy." Cocteau, as you know, was a French poet, artist, critic, and more. He was one of the foremost voices of the surrealist, avant-garde, and Dadaist movements.

That is really a strong statement. Cocteau's text was for the exhibition at the Brusberg Gallery in Hanover that year, and Monsignore Otto Mauer (who founded Gallery nächst St. Stephan in Vienna) was speaking at the opening.

My parents were on their honeymoon visiting my father's friend Erik Hesselberg, captain of the Kon-Tiki, on the Cote d'Azur when Cocteau dropped by on the way to Picasso's birthday party and was looking for a present, which he found in the RHYTHMOGRAMS.

AM: Your father started his artistic career as a painter. How did he get from painting into architecture and photography, and from there into building this machine?

BH: He actually started as an architect, studying in Graz for a while in the late 1920s. Then he set out for Paris in 1928 with his friend Eduard Zak from Linz and went to Fernand Leger's Ecole moderne. He bought a camera at the flea market to reproduce his paintings when the drugstore made a mistake developing the plates, so he did it himself. With this knowledge, he fled with his first wife through Europe and ended up in Berlin, working for architect Herbert Rimpl and later the Braunschweig School. In Wolfenbüttel, he was commissioned to create a mural and needed graphical elements. He invented the RHYTHMOGRAMS and constructed the machine. My father always stressed the importance of chance in life.

Heinrich Heidersberger, 03782_000_068.

AM: Has he considered himself a pioneer?

BH: I never heard that from him.

AM: Did he move on once he had solved a problem for himself?

BH: Interesting point. He started with the RHYTMOGRAMS in 1953 and ended in 1965. After that, he made the coloured ones in 1973, but with shapes that already existed. He had exhausted the possibilities and moved on. Same with DRESS OF LIGHT in 1949. He had made that gigantic projector from a cooking pot and projected patterns on women's bodies. The series was published in the German magazine Der Stern and caused quite some reactions, as we know from the letters to the editor. But, for example, he never tried to combine DRESS OF LIGHT with RHYTHMOGRAMS. Another vision and project had taken hold of him.

Article in STERN #45, 1949.

AM: Your father hasn't limited himself to one genre. He was interested in taking photographs of humans and explored nature photography. Very early on, he was fascinated by snowflakes and later lightning. What was he looking for?

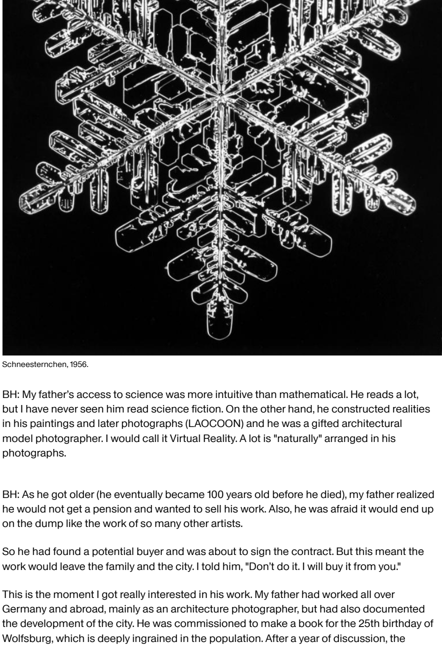
BH: I know from conversations with him that he was looking for some unifying principle behind the obvious appearance of things. He often talked of Radiolaria, described by Darwinist Ernst Haeckel in KUNSTFORMEN DER NATUR. Of course he knew of sculptor and later photographer Karl Blossfeldt and his URFORMEN DER KUNST. Finally, W. A. Bentley's SNOWFLAKES IN PHOTOGRAPHS comes to mind. The application of simple laws leads to complex appearances, and in that way, he wanted to show the beauty of the universal laws of physics through what he called RHYTHMOGRAMS.

AM: When it comes to nature, has he looked at it through the lens of technology and translated it into a traditional medium?

BH: Well, first of all, nature played an important role in his life and in his work. He was a member of Wandervogel, a popular movement of German youth groups that protested against industrialization by going to hike in the country and commune with nature in the woods. There are stories of him canoeing on the Danube River in Linz.

There is a body of macro photographs of insects (AUGEN WIE MÜHLENRÄDER), snowflakes, and later orchids. We had a greenhouse at home. He had a massive fish tank and was an amateur astronomer with a small observatory, which he also built himself. My father showing me the rings of Saturn with his own telescope is a dear memory.

In his later days, he became interested in Rupert Sheldrake, whose theories of morphic resonance are criticized as pseudoscience. So technology allowed for access to nature, and on the other side, my father was a keen observer of nature.



Schneesternchen, 1956.

AM: Writers and artists had started writing about VR and the metaverse in the 1970s. Someone like Herbert W. Franke had thought about the metaverse for decades and had a very clear vision of it. Has this been something that also occupied your father?

BH: My father's access to science was more intuitive than mathematical. He reads a lot, but I have never seen him read science fiction. On the other hand, he constructed realities in his paintings and later photographs (LAOCOON) and he was a gifted architectural model photographer. I would call it Virtual Reality. A lot is "naturally" arranged in his photographs.

AM: When and why did you decide to take care of your father's estate?

BH: As he got older (he eventually became 100 years old before he died), my father realized he would not get a pension and wanted to sell his work. Also, he was afraid it would end up on the dump like the work of so many other artists.

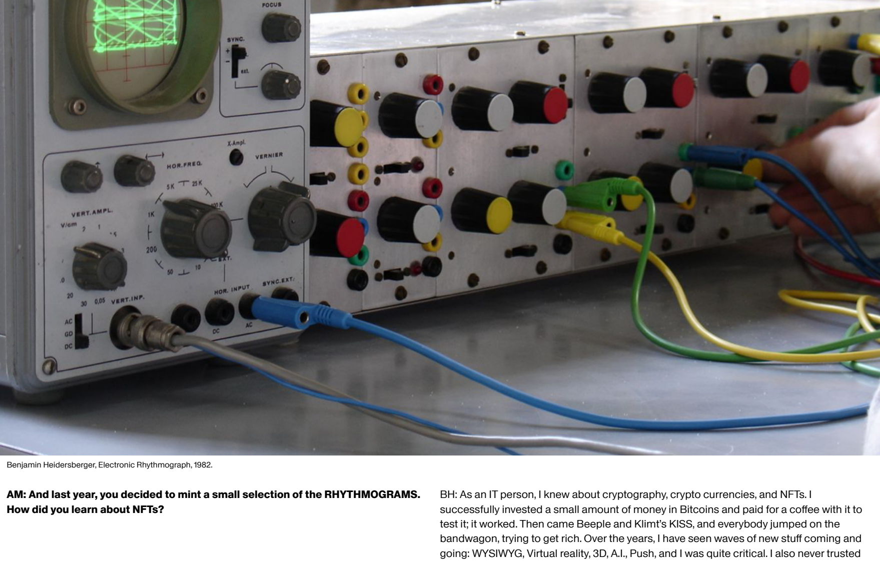
So he had found a potential buyer and was about to sign the contract. But this meant the work would leave the family and the city. I told him, "Don't do it. I will buy it from you."

This is the moment I got really interested in his work. My father had worked all over Germany and abroad, mainly as an architecture photographer, but had also documented the development of the city. He was commissioned to make a book for the 25th birthday of Wolfsburg, which is deeply ingrained in the population. After a year of discussion, the mayor of the City, Rolf Schnellecke, and the city council finally gave their okay to institutional funding. And I got to know the photo engineer Bernd Rodrian at the Museum Ludwig, and together we founded the Institute Heidersberger.

AM: The Institute Heidersberger is in Wolfsburg. What does your everyday work look like?

Bernd Rodrian is the Head of the Institute and curator, and I am the owner and general manager. There is a lot of administration, banks, and the IRS. I do a lot of the necessary political work (the Institute is 75% financed by the City of Wolfsburg) and networking. The daily operation of the Institute is Bernd's job. In the 20 years we have been working together, we have exhibited all over Europe, in Cuba, and in Japan, often together with contemporary artists. In 2021, we coordinated a 50-year commemoration of my father's POWER STATION OF THE VOLKSWAGEN AG, a photograph that symbolizes the close relationship between the City and the factory. Even a local bakery cooperated with a cake carrying the picture.

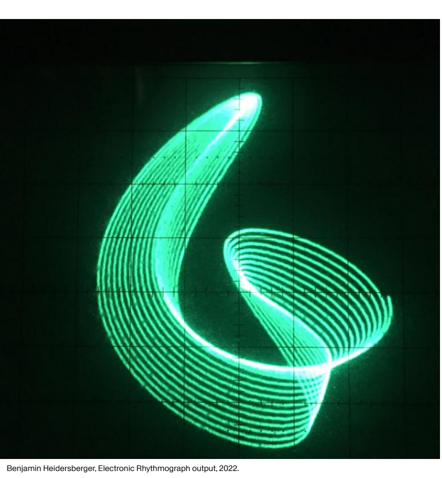
Then there is the merchandising through our webshop, and in cooperation with shops in Wolfsburg, we are earning about 30% of our budget. We handle almost weekly requests for historical images from architects, city planners, and museums.



Benjamin Heidersberger, Electronic Rhythmograph, 1982.

AM: And last year, you decided to mint a small selection of the RHYTHMOGRAMS. How did you learn about NFTs?

BH: As an IT person, I knew about cryptography, crypto currencies, and NFTs. I successfully invested a small amount of money in Bitcoins and paid for a coffee with it to test it; it worked. Then came Beeple and Klimt's KISS, and everybody jumped on the bandwagon, trying to get rich. Over the years, I have seen waves of new stuff coming and going: WYSIWYG, Virtual reality, 3D, A.I., Push, and I was quite critical. I also never trusted the figures with anything related to the Internet.



Benjamin Heidersberger, Electronic Rhythmograph output, 2022.

AM: Why did you decide to make your father's work available for collectors as NFTs?

BH: For many years I have been trying to understand the art market, which I assumed to be mediated by gatekeepers, curators, museums, journalists, and galleries. NFTs, in theory, offer the chance of disintermediation by connecting producers with consumers. Plus, new technologies always bring a new distribution of power. But with the market flooded with mediocre quality, the old gatekeepers are back. Humans need humans as a level of trust. So in the process of exploring NFTs, I came full circle and got to know some interesting

people that I used to call gatekeepers.

AM: I assume it's hard to guess, but what do you think? How would your father have responded to NFTs?

BH: My father was always open to new technologies, so I guess he would have loved it. In his final years, he worked with digital photography, which is an interesting work of its own. He understood, at least in theory, the internet by calling it a big library. On the other hand, NFTs are artificially limiting a potentially unlimited resource. He understood photography as a medium of unlimited reproduction, and creating value by limitation was not his strategy rather than just taking a good picture.

Heinrich Heidersberger, 03782_000_271b.

AM: What are your plans for the future with the Institute and your father's legacy?

BH: When I bought my father's work, I promised to keep it together and make it publicly available. But then again, one has to take into account one's own finality, and I have to find a place where his work is permanently safe and available. This can be a foundation, a public organization like a city or a museum, or the blockchain. Let's see.

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