

# Art as Invention

## *Sherban Epuré in Memoriam*

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Over three years ago, Letiția Bucur shared the devastating news with me: Sherban Epuré, her husband, suffered a spinal aneurysm. It meant, among other things, paralysis from the waist down and a never-ending succession of medical interventions. The artist was not prepared to give in. Living on borrowed time, he fully rededicated himself to his art.

Before emigrating to the United States in 1980—a rather difficult endeavor—he lived under the authoritarian regime of communist Romania. Not a few of his friends and relatives experienced the hell we associate with dictatorships. “If it doesn’t kill you, it makes you stronger” was the bon mot of those days. Those who opposed the suppression of freedom—including the freedom of artistic expression—either were censored or found refuge in forms that made it more difficult for the censorship apparatus and the secret police to detect. Epuré, together with some of his friends, followed this path. The “new Barbizon of the young painting in Romania”—as a critic, Ion Frunzetti, described it in 1974—discovered a superb corner of nature: Poiana Mărului (in English, “Apple Meadow”). There, they painted the village in a manner that qualifies, in retrospect, as aesthetic dissidence. Nothing idyllic, as the regime would have had it, but rather taking a subjective perspective, an aesthetic different from the official socialist realism. Maybe Epuré was less “at home” in the group of figurative painters or was already seeking his own language. But in spirit, he animated the resistance. Thrown out, for political reasons, of the Bucharest Polytechnic where he was studying, Epuré bore within himself a dedication to geometry that eventually changed his life. (At the same institute and at the same time, while I was studying electronics and computers, my own investigations into aesthetics began [1].) Our professor of cybernetics was Edmond Nicolau, a histrionic character who probably envied us for taking the liberty of seeking refuge in aesthetic issues. One of his articles

on art and cybernetics (1974) was illustrated with an image by Epuré. (Later, we found out to our disappointment, that, like many others whom we trusted, he was also on the payroll of the secret services.)

For Epuré, science became the backbone of his art. It took him little effort to abandon figurative art and fully dedicate himself to the aesthetics of abstract forms. In order to explain what happened, let me recall Mondrian, for whom painting landscapes was a step toward his abstractions. (*Neoplasticism* is the art-history label attached to his compositions.) Epuré abstracted from the landscape the expressivity of primal drawings. The same inspired the art of peasants, creating in the language of weaving a miraculous new world. Two articles published during that time in Romania (in *Arta*, the journal of the Union of Painters) explained the process in detail. He introduced the notion of Mathematical Realism: “The drawing is the outcome of the life record of the point navigating in space” [2]. What counts is the “experience of happiness brought by the discovery” [3]. Moreover: “The object is a pretext, a catalyst in expressing an idea” [4]. I hope that those who are interested in Epuré’s art will one day translate the two texts, which belong to the vast library of writings about the relation between art and mathematics that accompanied the work of artists seduced by new technology: among them, Ileana Bratu, Mihai Jalobeanu, Francis Goebés, Florian Maxa, Solomon Marcus and me.

There is as much art in mathematics as there is mathematics in art. Polykleitos conceived the perfect male nude by ascertaining a ratio ( $1:\sqrt{2}$ ) that endured until the “divine proportion” advanced by Luca Pacioli—an artist and mathematician—extended as far as in Leonardo da Vinci’s images. But nobody needs a rehashing of this narrative, which became almost trivial once automated mathematics—i.e. the computer—entered the stage of human activity, aesthetic activity included. Does Epuré deserve a place in this narrative? The question cannot be taken lightly. So many distinguished artists embraced mathematics via computers that the issue of legitimacy is almost irrelevant. A new aesthetics, or many, emerged. To distinguish in this fast-growing field between

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authentic contributions and the insignificant is not a matter of history so much as one of aesthetic awareness.

As a matter of fact, Epuré's art originates in mathematical considerations independent of the "mathematical machine." A great part of his initial work did not involve computers. The impressive evidence of his creation in the period 1969–1971 shows works that are the outcome of mathematical and cybernetic consideration. He described in detail the language of geometric forms leading to folding and iterative structures. The drawing is simple, the colors are minimal. This is a vectorial space that, after reiterations, became more and more complicated. (He used the word *complex*.) In his mind, there are two players: the artist and the artwork. They exchange information such that each new visual rendition returns new insights to the artist. The final judge was an intuition-driven process. In this ascertainment, we become privy to the secret of his art: Automated mathematics is the source of a large number of variations. This allows the artist to investigate a large aesthetic space. But intuition, not computable, is the final judge. When Harold Cohen's AI-based Aaron started producing images, the issue of "what stays" versus "what is junk" came up. The final judge, as with Epuré's production, was intuition. The machine does the work; the artist selects. And authenticates. The generative geometry that Epuré developed is not made up of rules mechanistically applied for permutations but a living process: Each step in the construction of the image guides decisions leading to the next step. The S-Band is a morphological "rug." It is the outcome of an interactive virtual machine defined by 12 variables: geometry (3), color (8) and background. A first look recalls the structure of origami, although Epuré's bands do not fold into a desired form but rather into an open-ended family of shapes. Epuré claimed that he was actually inspired by Romanian folk rugs, which indeed seem the embodiments of a line seeking to escape from the underlying raster. His loom was not mechanical but mathematical. In this sense, the primitive loom of folk culture—a beautiful artifact embodying aesthetic sensitivity—is yet another computer before computation became what we have experienced in the last 60–70 years. (See my memoir on this theme in *Leonardo* [5].)

Epuré began his work in the Romania of the 1960s. The mathematics and cybernetics (in essence, feedback loops) that guided him were relatively simple. Imagine the simplest fractals: Maintain self-similarity within a triangle and, before you know it, you have built a snowflake by hand. But after a number of reiterations, as Mandelbrot (the "father of fractal theory") learned, the process becomes so complicated that you would rather have a machine do it. Epuré discovered the computer late; his exploration of what he called the S-Band (S being the first letter of his first name) produced intricate hand-generated constructions that, when put on display at the Edinburgh Festival (1971), were automatically considered examples of computer art. He was the computer—a label used when those in charge of vast calculations for astronomy applications were looking for people who could perform them. It took some time before Epuré's explorations of the aesthetic space he discovered in the Romanian decorative arts would

make it to a computer—more precisely, to a Macintosh. This machine, known for its computer graphics capabilities, eventually became his tool of choice. Consumer-grade printers still had to catch up with Epuré's precise and expressive handwork before he could produce art-quality printouts. But once such quality was achieved, driven by his aesthetic discoveries, the printer became a production tool. The shop at the Museum of Modern Art carried some of his productions for a long time.

The S-Band is part of the broader aesthetics of what Epuré called Intrinsic Art. The Meta-Phorms (from meta+metaphor+form) and the protruded sculptures derived from his planar art are part of this aesthetic universe that, rather than taking reality as a reference, uses the intrinsic aspects of the interaction between the artist and the forms he generates.

Picasso, never too shy in describing his creative process, came up with a formulation that might help us understand Epuré's aesthetics, declaring: "*Je ne peins pas ce que je vois, je peins ce que je pense*" (I paint objects not as I see them, I paint what I think). Epuré would say: "I paint forms as I invent them." Actually, in his *Leonardo* article describing his Intrinsic Art [6], he opens with "My work is very much about invention," before trying to explain what it means. Epuré connected with Frank Malina, who started *Leonardo* as a rather modest publication during his years in Paris, exactly because Epuré recognized that his own view of art was close to science, from which a renewal of aesthetics was supposed to take place [7], from the invisible—scientific thought—to the tangible—aesthetic artifacts of undisputable originality that contribute to the richness of the aesthetic landscape of our time. Although he shied away from public events we associate with computers and art, Epuré gained respect for a dedication not subject, in his view, to recognition. There is a record of public presence beginning in 1971 with the Paris Biennale through 1973 with the Edinburgh Festival [8], reaching an apex in a distinguished presence at the New York Digital Salon (1995–2001), SIGGRAPH (2005–2006) and beyond. His works are in the collections of important museums: Victoria and Albert (London) and the National Gallery of Art (Bucharest), among others of the same renown.

Among the works Epuré entrusted to the Victoria and Albert—a respectable repository of computer art—is a large artist's book, *Method and Roses*. Let us take a look at one spread (Fig. 1). It is self-explanatory—each page comes with an example above it. The invented aesthetic space constitutes a narrative: from one generated image to a family, sharing formal qualities through aesthetic coherence. Page after page, the narration continues. The method and the roses are to be understood in their unity, as in the generative grammars describing biological entities. In some ways, the book suggests that the space explored will become a multidimensional space. To show how this unfolding from point-line-surface-volume takes place, at the beginning is the "formula," something like a still-unfolded protein (Fig. 2).

Of course, readers of this extended obituary will not necessarily delve into the syncretic description Epuré provided.



Fig. 1. Spread from Sherban Epuré, *Method and Roses*, inkjet print, 2015. (© Sherban Epuré)

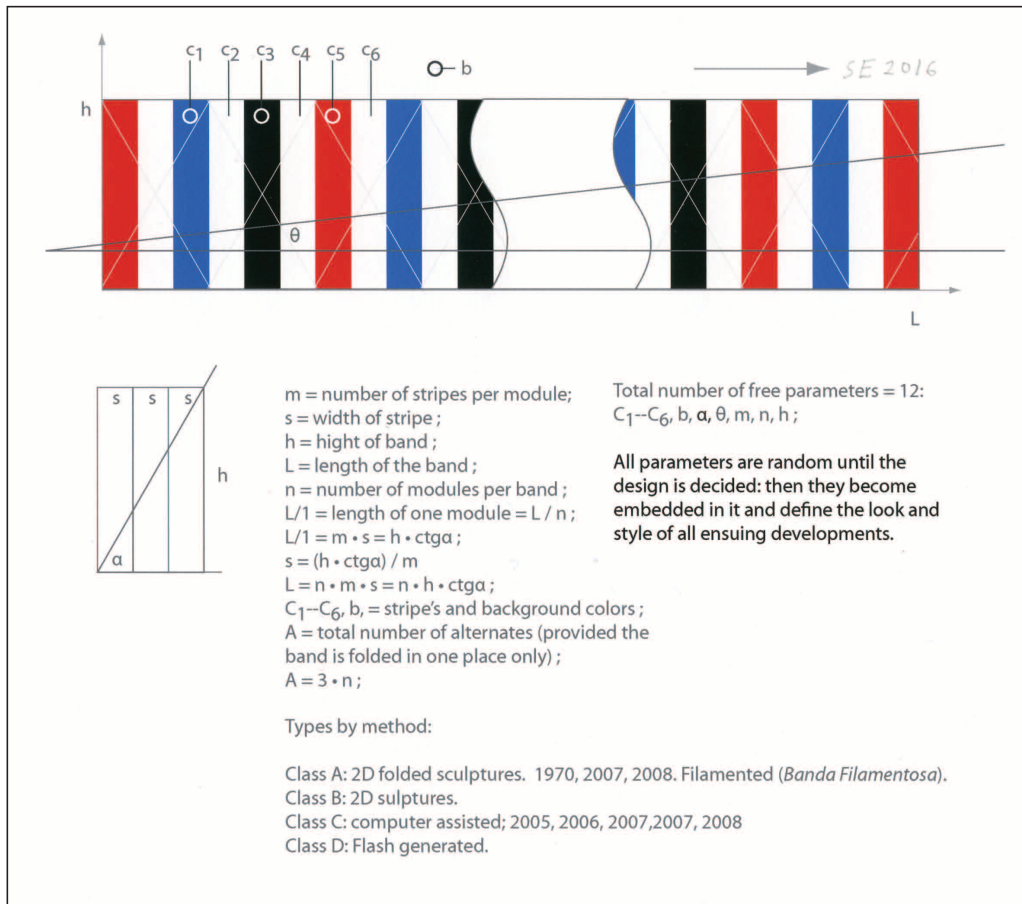


Fig. 2. The invented aesthetic space in compressed form (a structural description). (© Sherban Epuré)

But from the description, he generated examples such as in Color Plate D. No doubt that if Epuré could have found the opportunity, the large-scale works reproduced here would have made for a very convincing aesthetic invention show. They scale in amazing ways, a quality not necessarily intrinsic to other works.

It would be inappropriate to celebrate Sherban Epuré as a computer artist. It would be like celebrating Stephen Wolfram as a computer geek. Let us remember that Wolfram's *A New Kind of Science* is, like Epuré's concept of the S-Bands, an intellectual structure. From very few elements, Wolfram reinvents the scientific description of science. Epuré is an artist, Wolfram a mathematician. Epuré submits to us not demonstrations but rather aesthetic inventions. The computer is incidental (but in many ways unavoidable). That I had the privilege of interacting with both Epuré and Wolfram explains why I bring them up in one breath. I wish I had found the opportunity for them to meet.

Value judgments are not for us to make. Time remains an ever error-free judge. Epuré was not interested in (but well capable of) programming. His art was different in nature from that of users of computers as new tools or in imitation of classic tools. Although he wrote about the algorithm, in reality his work is not reducible to a recipe that anyone else could apply in order to generate art. In the years before his passing, I was in contact with many galleries, agents and art collectors about ways to bring his large body of impressive art to the public's attention. The ZKM in Karlsruhe still owes me

an answer. I had conversations with the Maecenases—i.e. art patrons—of our time. One was Mark Cuban, not only a sharp shark but also a rather bright spirit. He asked: Couldn't any art be reverse engineered and recreated? How would you stay unique? Where would it be platformed? On canvas or . . . ? Of course, Mark Cuban is not into aesthetics (thank God!—or whatever one might feel like exclaiming). But his questions made me think further about why no one else, with full access to Sherban Epuré's digital files, could create anything comparable to what he left behind. Inventions, once made, are always copied—ergo society's patent protection laws (which are always as good as the money protecting them). Even already-famous classic works of art are copied. (A new market for copies proves to be extremely profitable.) With the advent of digital processing, the copy is almost always better than the original, never mind that it is increasingly difficult to distinguish between them. However, the act of creation, as an instance of discovery or invention, remains unique. And authentic works of art bear this uniqueness as testimony to the even-more intriguing uniqueness of those who—to the final breath—put their own lives into it. Mark Cuban might add to his record: opportunity missed. Art is always more than a startup, and it remains the best investment ever when time confirms its uniqueness. Meaning is priceless.

It is in this spirit that I will continue to encourage those passionate about authentic art to preserve Sherban Epuré's legacy.

## Acknowledgments

During the summer of 2016, Sherban Epuré and Letiția Bucur (always involved in her husband's artistic journey—"my God on Earth," he called her in our last conversation) introduced me to the "secrets" of his art. We spent a long time with what he called his algorithm—in reality a dynamic model of impressive generative performance. A fruitful conversation with Erwin Kessler, the founder of the Muzeul de Artă Recentă/Museum of Recent Art (MARE) in Bucharest, who is quite familiar with Epuré's work as well as with aesthetic dissidence in Romania, deserves to be highlighted. So does Vasile Cornea, a passionate researcher of aesthetics and its connection to mathematics, with whom I carried on a correspondence regarding Epuré.

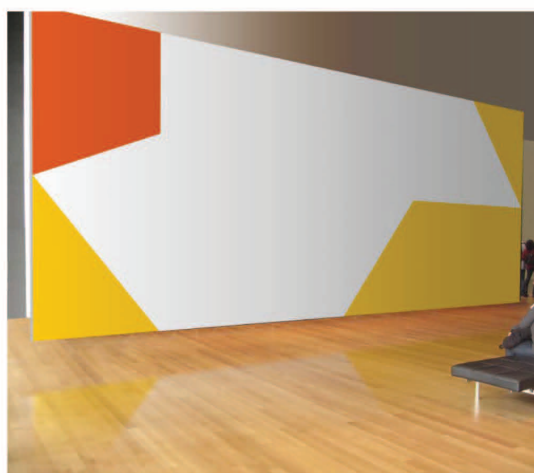
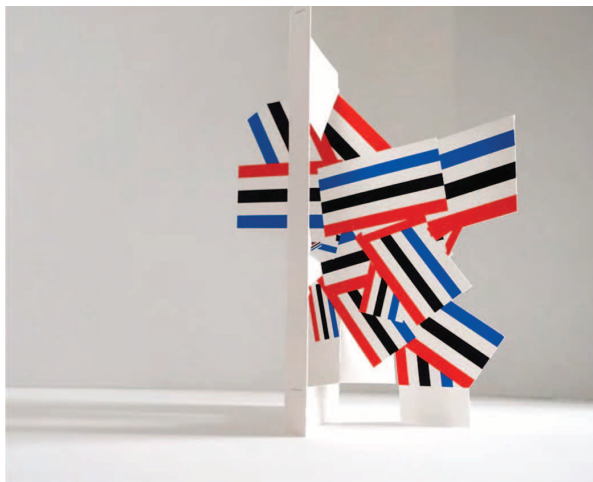
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COLOR PLATE D: **ART AS INVENTION:  
SHERBAN EPURÉ IN MEMORIAM**



From a classically framed image to sculpture-like art and large-scale compositions. (© Sherban Epuré)  
(See article in this issue by Mihai Nadin.)