Questions to Jules Ruis on his vision of Fractals

Interview by Sietske Verstegen, Annelies Vergeer and Stan van Grinsven; date: January 8, 2017

1.What do you think interesting about Fractals?

Since my childhood I have set very intuitive. In the course of my life I have learned that while thinking and feeling abilities are valuable, but it is a deeper awareness in me always prevail. That awareness concerning the realization that we as humans have a certain destiny and according to the Darwin's theory continues to evolve ("Struggle for Life") with a result of a "Survival of the Fittest" (the one who is best able to adapt to his / her environment will survive).
In my intuitive consciousness heard a great degree of ordering of things. I'd invented new things, I put something in a schedule, I spent the procedure organized and I also liked the performance.
I studied business and management science. I worked seven years in business, and was then almost 30 years at the Eindhoven University of Technology as an advisor to the Executive Board.
I also kept as freelancer management training, I often also developed itself for more than 25 years. Thereby lay with me to bring the challenge participants to expansion and integration of knowledge. The end result of my own development was the creation of Consciousness Operating Model (BBM), a coherent overview of some 80 models from the management theory, divided into three levels of human functioning: Basic Awareness, Business Awareness and Global Awareness. It looked very nice, but I was not satisfied with myself, I wanted to further integration and sought to broaden my perspectives. And so I discovered the fractal with Benoit Mandelbrot as the creator of the so-called Mandelbrot set. He discovered that iterating on specific mathematical formulas (using complex numbers) in certain circumstances leading non-predictable outcomes, but the results systematically been put on paper (and when was the first instance on a computer) are fantastically beautiful figures published: the Apple Male Mandelbrot was born.
The findings of the Mandelbrot I went to work. Was the computer program Mandelbrot initially only 20 lines tall, I built it entirely into a program with 10,000 lines. Programmed into the computer language Basic and converted by Terry Gintz in a Windows friendly application: the Fractal Imaginator (FI).

2. Why did you start working with Fractals?

My most important creation was the construction of the so-called Julius Ruis Set, which was needed to explore the beautiful shapes and repeating patterns. Because of the unpredictability of the fractal forms, I had to see visually all constructed fractals. I programmed this in such a way that I for a given formula (for start z (n + 1) = z (n) ^ 2 + c, and z, c as complex numbers) and set of associated parameters for the computer 400 spots (xy ordinates) in a matrix of 2x2 successively for each of these spot allows to calculate the associated fractal, which I then (in meeting a certain pre-specified value) as well as a reduced picture to print at that position on the computer screen. The surprising conclusion was that the big Mandelbrot set showed his big picture parameter basin formed for whether or not there the smaller pictures, the so-called closed-Julia sets.
The discovery that the same forms appear again when zooming in and out of different fractals, for me was a great experience. In there I was looking; finally mathematical shapes that resembled forms in nature (clouds, rivers, coastlines, trees, etc.) and the animal / human body (lungs, blood vessels, brains, kidneys, etc.). With this construction, I went to work. Since then I probably millions of fractals on my computer screen viewed.

3.What did the 3D printing for your fractal activities?

Mandelbrot while only two-dimensional fractal studied, my interest was focused on the creation of three-dimensional shapes. But before missing the mathematics; a complex number is, by definition, in fact attached to the 2-dimensional space. But my intuition did not let me down. I developed a set of new mathematical formulas that when testing it is indeed beautiful three-dimensional shapes yielded, although initially presented on a two-dimensional computer screen, but intended to be actually printed in tangible materials (fine grains of plastic with adhesive between them). And so I got the idea to mathematically construct the 3D shape of a blood vessel, to print them into a 3D scaffold of degradable polymers, and that, finally, completely real spraying with human cells, the so-called tissue-engineering. I think the artificial blood vessel than is really going to grow. For my discovery I asked a patent. Unfortunately, my tour of nearly 200 persons / companies / universities did not support a financial contribution of € 10,000 which I would need to settle the patent. I have since then all my findings on the Internet made public. I keep hoping that in the meantime it will be continued in one way or another. Everything indicates that will appear the first results on the market within the foreseeable future.

4. What does your research further?

My intuition tells me that evolution is to a jump. Not with the landing of Martians or Venus Females on earth, but with the next step of humanity. It is the creation of what we now call Artificial Intelligence and Robot technology. It is the creation of a creature which is not based only on the possession of DNA, but largely will contain other information in order to survive and achieve further development. Developed Fractal Trigeometrie by me will thereby be leading; shapes and structures that are based on a mathematical set of parameters; small files so that can be any shape at all levels of our existence, can be maintained and can be demolished. 3D solar cells but also will be constructed with the aid of the fractal trigeometrie (mathematics of nature). new and sustainable combinations of information, new nanomaterials and solar energy meet. That is my dream.

5. What do you think interesting about Fractals in relation to Pokemons?

And finally, my interest in Pokemons. Why am I the game playing? The answer is simple. The game contains exactly the elements being considered me in the development of our future. Pokemon Go is indeed a quest for the unknown, although still controlled by the developer, but the player unknown. He is looking at his GPS coordinates to find the places where cute creatures are. He uses energy and information to capture the creatures and to defeat its competitors. But he has to work, he wants to survive. That's all I need for my future dream. The structure of a large cloud fractal which all discoveries are brought together (obviously including the DNA of the future, the parameter set) and emit all mankind (without charge) can draw to create new creatures. My hope is hereby drawn to the youth; the new generation of young people growing into the Magister Ludi from the book by Herman Hesse: das Glasperlenspiel. I wish them every success with it.

6. Further information on the Internet

a. Https://nl.linkedin.com/in/julesruis

b. www.fractal.org c. http://gallery.fractal.org

d. www.fractal.org/Bewustzijns-Besturings-Model/Index-BBM.htm

e. www.fractal.org/Fractal-Awareness.pdf

7. Download Fractal Imaginator (on 64-bit computer)

http://www.fractal.org/fractalimaginator64.zip