

Arnold's Cat vs. Coleman

by Jurij Konjar (2008)

As a kid, I liked mathematics. Possibly because my mum is a maths teacher, but more likely because I understood it. After primary school, I ended up at the mathematics-physics programme at Bežigrad High school. Then suddenly, overnight, also because of taking dance classes while I should be in math lessons, I turned from one of the best in class to one of those struggling for a C – while the fascination over mathematics remained.

I felt closest to the area of geometry. I was fascinated by shapes, by the beauty of spatial representation of formulas. The whole thing was closest to a kind of a game – which mathematics, with its clear-cut rules and attempts to overstep or develop them, ultimately is.

In the middle of April, I returned from Budapest, where I staged a short fifteen-minute performance for eight dancers, *Phraseology of Freestyle*, to the music of Ornette Coleman and following his principles of Harmolodics. I got an impulse for the creation of the piece while watching a performance by the famous British choreographer, Russell Maliphant. The performance took place in a theatre, where we were to dance two weeks afterwards – the Trafo Theatre.

Maliphant's show consisted of three choreographies. Each displayed the following common qualities: tolerably interesting movement and rather imprecise execution. Interesting lights, well used in the staging. Neoclassical movement and aesthetics, occasionally blended with floor movements, so the dance was recognized as contemporary. Symmetry in the formation of dancers. Centrality of the stage – the point exactly in the middle is most important. Clarity of movement. Absence of a recognizable theme. The last among the choreographies was a duet, in which Russell lifted and carried around one of the female dancers for about fifteen minutes in a stereotypical physically demanding macho duet, in which the woman is a fragile being, swaying from one pose to the other, while he supports her firmly as a rock and moves as little as possible. The show won a thunderous applause, and left me wondering how was it possible that this ballet under a disguise of contemporary dance ended up on the stage, which is a symbol of contemporary dance in Hungary.

The whole thing reminded me of television programme. If people watch a sufficient amount of instant American television, sit-coms, they are surely able to recognize when a show is good and when not. Still, the show is only instant entertainment, a commercial product, produced on the assembly line of American film industry, without educational or cultural value whatsoever.

Few days later, I started working on *Phraseology of Freestyle* (in continuation POF) with the group MU Terminal. The aim of the creation was to keep the audience's undivided attention on what was going on on stage. As soon as they would form a certain opinion about what the performance or the present goings-on are about, the situation would break into pieces and something new would start to be built up. All with the intention to bestow the viewer with an opportunity to ask her/himself: "How strange. But was it dance? Did I like it?! What did I like?"

The work was fun, though difficult, as the dancers had a fixed idea that dance is nothing more than perfectly executed movements, the dancer's personality altogether absent. To get what I was aiming at I had to – also because of the short creation period – strip them naked (metaphorically): I took away their taught movement and left them working on what was left.

The patterns in *POF* are not obvious, transparent. The stage symmetry is blurred, the rhythm irregular, the movement unrecognizable, in the sense that it was not part of a certain recognizable technique. This was achieved with different working methods: with using dictation, tracking, shadowing, with translating the sound of the movement into another movement, with tracing points in space. The general overall impression is one of organized chaos. And when out of this seeming chaos, which is basically strict order, forms/patterns – which are not very likely to appear by chance – unexpectedly arise, one gets an impression that magic is at work. The audience realize that what they are looking at is not some chaos but a sequence of choices. And continue to keep its attention on the mechanisms, unwinding in front of them.

Then, what does chaos mean in this context?

The Chaos Theory is a very young science. The first to stumble against this natural phenomenon was Edward Lorenz in the sixties, when he was working on weather simulations. He noticed that in the functioning of a specific system the results reacted surprisingly quickly to slight changes in data input. Upon several steps, the smallest changes on the third decimal place resulted in entirely different results. Thus, the more complex the system the smaller the required change that can make for an altogether different system. The changes and the results are not in direct proportion. Today, this theory is known as the Butterfly Theory: flapping of the butterfly's wings may provoke a storm on the other side of the planet.

In ancient Greece, the word chaos originally meant *gaping void*, a space, opposed to Cosmos. Because of the failure to grasp the original meaning the usage eventually changed, at present meaning disorder, unpredictability.

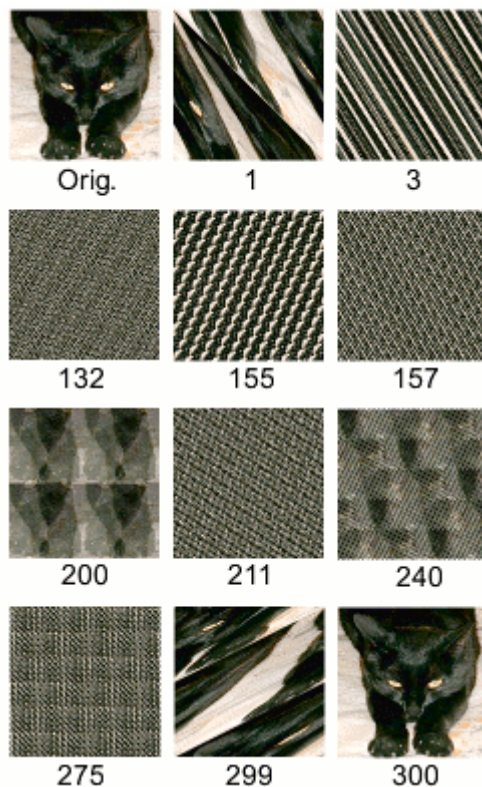
Chaos Theory is an exact science. It examines systems and their behaviour. Like any other science, it is demonstrable, and thus not “chaotic” in the colloquial sense of the word. Still, we know little of this young scientific branch. When Einstein came across similar indefinitenesses in mathematics, while developing his theory of relativity, he was rather reluctant toward the possibility of indefiniteness. It was then that he uttered the famous saying: “God does not throw dice.” Now we know that he was mistaken and that God throws dice after all. Moreover, he cheats: dice are manipulated, weighed down – possessing their own laws, other than chance. Chaos is order in disorder, a seeming disorder, which, at a certain point, turns out to possess – through symmetry – a certain order, certain laws.

Over the past forty-six years, chaos researchers detect chaotic systems in mathematics, biology, computer sciences, economy, finance, psychology, physics, politics, demography and robotics. (Graphic accounts of several systems are shown on the last page.) Thus, the mathematical phenomenon appears in a variety of areas, including also the area of our thought patterns. I am speaking about events, in which incomprehensibly

complex phenomena develop out of apparent simplicity, though they are still subject to certain definite rules. An interesting experiment, called Arnold's Cat, was conducted in 1960 by a Russian scientist Vladimir Arnold, who applied the below formula

(transformation) $\Gamma : \mathbb{T}^2 \rightarrow \mathbb{T}^2$ (given by a formula:)
 $\Gamma : (x, y) \rightarrow (x + y, x + 2y) \text{ mod } 1$

to a picture (150 x 150 pixels) of a cat. Each pixel had the coordinates (x,y) precisely defined. Initial coordinates, and then every time new ones, were entered into the formula. The picture below shows what happens to the photo after one, three, one hundred thirty-two...



...three hundred steps, when the original picture of the cat appears again. Typical to the system in question is that the initial order turns into a seeming chaos, then an (entirely different) order/pattern emerges, while after three hundred steps we are presented by, as if by a kind of magic, an original image of the cat. Thus, chaos is only supposed – order exists throughout.

It turns out that chaos is one of nature's infinite manifestations. A similar and very interesting occurrence is "emergence". It describes the phenomenon when in the reorganization of complex systems – termites' nests for example – new coherent structures, patterns or traits arise. To put it differently, similar affinities of specimen

within a certain species bring about changes in the entire structure, the process being subjected to specific laws, though without prior planning or deliberation.

Taking this even further, we could mention a sociological phenomenon “self-fulfilling prophecy”, which is a prediction that, in being made, actually causes itself to become true. Or a sociological phenomenon “tipping point”, when a small change results in a big change. To take the example from the States in the sixties: one black family moves to the neighbourhood, white families start to move out.

Also the “domino effect”. Every action is a reaction to a prior one; it triggers the subsequent one, the initial negligible phenomenon resulting in a big change. The term became known worldwide, when the USA referred to it to justify their world policy of interference: If one country in a region turns communist, it will not be long before all others turn communist.

Maybe the most fascinating example is the theory of superorganisms. Organisms, consisting of numerous organisms. One of the definitions has it that a city is one such superorganism, or even the whole biosphere. In addition, our bodies can be considered superorganisms.

Examples are countless. Not all of them originate directly in the Chaos Theory, but they include mathematical patterns and a certain level of chaoticity and hardly visible order.

Among many artists, who researched into similar phenomena, I want to mention Merce Cunningham and John Cage, a choreographer and a composer, both working in the States in the sixties. Both of them introduced elements of chance in their work. Working with dice or similar methods allowed Cunningham to do choreography, Cage did music. Cunningham was the first to design a computer programme Dance Forms, which is used for choreographing or writing down movement scores by employing principles of chance. It is interesting that Cunningham’s works were either rejected because they “did not work”, or were praised as exciting discoveries and were kept in the repertoire.

Personally, I am interested in order within chaos. Not coincidental order, which was a point of interest for Cage, Cunningham, Theresa de Keermaeker and Iztok Kovač among others, but order structured according to conscious chaotic choices. At this point, mathematics and its application offer a myriad of opportunities for the research into what works and what does not work on stage.

I am absolutely NOT interested in proving some theory on stage, or showing how it works. I want to use my knowledge of the Chaos Theory to establish order and seeming disorder on stage. Then, my focus is on the surplus of form. Or to be more precise, I am interested in communication and interpersonal relations within this order. I want to constitute a small community on stage that would function through continual mutual communication and interconnectedness.

During the creation for MU Terminal, I relied heavily upon the thoughts of another composer and musician, Ornette Coleman. He, too, made his greatest steps in the sixties in the States, when he started a movement known as “free jazz”. Born in the poor American South, Ornette learned to play the saxophone by himself. Later he discovered that he learned certain forms in a “wrong” way, differently, to say the least. Order, the “right way” is a mere construct, a compromise, one of the possibilities of chaos, valid

only insofar it is agreed upon. The same holds in music. Coleman proved this when he presented his own order, which took root among other musicians under the name “Harmolodics”. The characteristic of this order is that it does not take the modal structure of music as its precondition. One of the then basic rules of jazz structure (theme – improvisation – repeat theme) was that, when improvising, musicians have to respect the modal structure of the basic theme. Coleman, a self-taught musician, saw no purpose in this. He bypassed this rule, thus evading mathematicity in the creation of his art, which he replaced with the feeling for music. Asked why he played a tune in a certain way and how does he know what to play he replied that it just seemed right, that he played by his feeling.

James Joyce also did something of the kind in his famous and controversial book *Ulysses*, when he put words together not only according to their meaning but also according to other attributes: rhythm, sound, effect, shape. He, too, worked by his feeling, at once breaking every rule of literary expression. Finally, his work was – and still is – acknowledged as one of the peaks of English literature.

Now we finally arrive to the performance’s title, *Arnold’s Cat versus Coleman*. The opposition of chaos, about which I wrote at length above, is not order. Order is only a fictitious compromise, one of the potentialities. Similarly, a circle is one among the curved lines – for some the most evident one, for some not. Chaos is fictitious, for it still obeys certain rules, which are – because of the youth of the science and the complexity of the subject – hardly comprehensible to us. (An instance of such order in chaos is, for example, a forest: individual events are coincidental, chaotic, but all is part of an orderly/harmonious whole). Instead, the opposition of chaos is personal choice. As, for example, the choices made by Coleman and Joyce: due to some internal and not necessarily understood desire, man makes a choice, which is not necessarily provable.

The premiere of *POF* in Trafo, Hungary on April 5 was received with mixed feelings, but definitely not lukewarmly. In terms of enjoying the performance, the audience were divided in two opposite poles, the loving and the hating. By the end of evening, during the course of which four shorter performances were shown, *POF* came across as bizarre as if it were made by aliens. It is not a coincidence that it was largely welcomed by foreigners or those working in cultural institutions.

Before I start the creation *Arnold’s Cat versus Coleman*, I will have an opportunity to continue my research into the mentioned themes on several occasions:

- On June 3, I had a public presentation of the workshop Orderly Chaos, organized by Experimental Movement Festival NagiB from Maribor (find the card enclosed)
- These days I am embarking on a creation of the solo *Ulysses* (also an *Exodos* production), in which I will attempt to translate James Joyce’s approach into movement (find enclosed the concept of *Ulysses*).
- In November, I will have an opportunity to create a performance dealing with the same topic with Bulgarian dancers at the New Bulgarian University, where I taught for the first time in March.

I will use these opportunities to develop ideas in terms of structure, but it won’t be until the creative process of *Arnold’s Cat versus Coleman* that I will have enough time to work

on the movement itself. From this perspective, due to the short time of its making, *POF* is also an unfinished performance. With the priority to see real people on stage, the three weeks of creation did not suffice to create movement, which would replace simple walking (see DVD). For this reason, a period of ten weeks is needed for the creation of *Arnold's Cat*.

Why does dance still in so many respects either originate in classical ballet or is nonexistent (conceptual dance)? Why do solos predominately take place in the middle of the stage? Why do we still so often see simple lines, easily recognizable figures on stage? What could be just as easily recognizable to the audience and at the same time an upgrading of the mentioned, exhausted forms?

Luk van Loo, a director and video artist from the Netherlands, thought that *Phraseology of Freestyle* presented life as imperfect, as it is, and above all alive. He saw the dancers as if they shared a secret, unknown to him. (His thoughts could equally describe any game: the players know the rules, the game unites them into a thinking whole. While the audience enjoy the game without knowing the actual rules.) Despite the short creation period and the dancers' formal dance education, van Loo thought the dancers existed on stage primarily as people, as individuals. Moreover, he also mentioned the aspect of magic in the sudden emergence of order in chaos.

Ultimately, what interests me in *Arnold's Cat versus Coleman* is not the rules and geometry. Rather than sticking to the rigid rules, we will use them to our advantage, wherever they might work. The Chaos Theory will be our starting point. What I want to see on stage, along the structures and games, is, first, people, and only then dancers or points in space.

Few weeks ago, I was in the Szetcheny baths in Budapest. It was eleven in the morning and I was watching a group of French fifty- or sixty year-olds, soaking themselves in the hot swimming pool. Everything was as it should be, until a current, caused by some underwater mouths, started moving very quickly in one part of the pool and seized some of the swimmers. All of a sudden, the rest of the grey-haired ladies and gentlemen decided to join the current. Screaming and laughing like children, they took hold of their shoulders and made circles around the pool. The view was magnetically beautiful. Surely, they would not allow themselves to behave this way while walking the streets of Pest – but the time, the place and the opportunity to play made the game possible.

Sources:

John Briggs and David Peat: *Turbulent Mirror*

John Briggs and David Peat: *Seven Life Lessons of Chaos*

Richard J. Bird: *Chaos and Life*

Steven Strogatz: *The Emerging Science of Spontaneous Order*

Ilya Prigogine and Isabelle Stengers: *Order Out of Chaos*

Peter Smith: *Explaining Chaos*

note:

The above paper was written in 2008 as an idea for a performance *Arnold's Cat vs. Coleman*, which was to continue the work from *POF! (2007)*.

POF! (Phraseology of Freestyle) was a performance that premiered at Trafo (HU) on 15.4.2007.

More on: <http://www.jurijkonjar.com/pof-phraseology-of-freestyle-2007/>

below:

the graphic representations of some chaotic functions (the images are from the www)

