



## IN TORUŃ, UNDER A SHARED SKY! SKYWAY '09 INTERNATIONAL LIGHT FESTIVAL Report on Festival and Talks By Mário Caeiro and Simeon Nelson

*Oh God is playing marbles / With his planets and his stars  
Creating havoc in my life / With his influence on Mars  
But now I'm stumbling down the highway / with my boots of steel  
I should be rolling down the skyway with my cosmic wheels*  
**DONOVAN**

### Intro

SKYWAY '09 is a new International Light Festival, held in the Polish city of Toruń. The first edition took place last August, taking advantage of a natural phenomenon, the Perseid meteor shower, with art framing and being framed by this astronomical event. More than 30 000 enthusiastic visitors filled the streets, experiencing the town center in a way that shall be remembered for years to come. As *Gazeta Wyborcza*, the main reference newspaper put it, 'for that week, Toruń was like Florence or Seville, full of life!'

SKYWAY '09 delivered to Toruń a set of illuminating, engaged and engaging art installations and interventions by artists from nine different countries. Between the 11th and the 16th August, Toruń's extraordinarily well preserved Gothic cityscape was the ideal backdrop for the experience of art works which managed to shed *new light* onto monuments and spaces. Sculptural presences, ephemeral architectural lighting, interactive devices, multidisciplinary collaborations and socially engaged artistic intersections, all the programme related to Light in different ways, leading people to understand how light is a fundamental tool in urban scenery, a crucial concept in science and a vital necessity for life.

In the framework of SKYWAY '09, light was thus both an artistic language and a cultural value, adequately working as an operative metaphor to cherish not only the Sky above us, but also *all that is*, the whole Universe. Differently from what happens in many other European cities hosting light and urban art events, in Toruń, birthplace of Copernicus, the Sky's not just a scenery, but a really meaningful and challenging presence up there, magical and powerful. That explains the reaction of one visitor in the internet, commenting that *finally we have an event that talks about the 'spaceness' of Toruń*.

In its most transcendent moments, SKYWAY '09 was a collective aesthetic experience for all publics. Thousands of people 'played with light', including a significant number of tourists coming from the capital Warsaw, Germany and other countries such as Spain and Italy. The town center was crowded with photographers, professional and amateur, and there weren't so many people – and kids – in the streets since the last visit of the Pope.

The reason for such fuss? Art. The art of light in urban context. The art of art as the art of being together, something clearly stated in the Festival's central piece, *Floating Stars*, the monumental religious-like participatory audiovisual device installed in the courtyard of the Old Town Hall. During the official opening, at this work by Nuno Maya & Carole Purnelle, the tone was set, with the official representatives, namely the President of the Municipality, surrounded by a mass of visitors anxiously desiring to *be part of*. At that moment, it was obvious what particular role urban light art and the very culture of light art might have in that particular urban situation, in a town whose touristical appeal is far from being exhausted and deserves an upgrade in artistic quality and international visibility.

# SKYWAY SCIENCE & ART TALKS

AWARENESS OF THE SKY / THE SKY AS AWARENESS

SKYWAY '09 LIGHT FESTIVAL AUGUST 2009, TORUŃ, POLAND

Hotel Bulwar 15th August 2009 Public Talks

Artus Court 16th August 2009 Closed Session

## Saturday 15 August

09.30 Coffee and Welcome  
Olga Marcinkiewicz Director of TORUN 2016  
Mário Caeiro Curator of SKWAY '09 'Skyway: Back to Tomorrow'

Public Morning Session **MYTHOS/LOGOS** (two necessary ways of knowing the world)

10.00 Simeon Nelson: Introduction to the session Beauty = Truth? - values in context

10.30 Arthur I. Miller, Historian of science

11.30 Coffee Break

11.45 Joao Ribeiro, Artist

12.45 Simeon Nelson, Artist

13.45 Lunch

Public Afternoon session **CAELUM INFINITIO** (the sky as infinite)

14.45 Bernard Carr Astrophysicist

15.45 Robert Priddey/Alice Williamson Astrophysicist/Composer

16.45 Coffee Break

17.00 Open Working Session moderated by Simeon Nelson

18.00 Close

## Sunday 16 August

### THE WAY FORWARD

Closed Working Session with all presenters and artists moderated by Simeon Nelson and Mário Caeiro  
This session will be devoted to looking at methods and approaches for future collaborative work and cross disciplinary production of art, writing and dissemination.

10.00 Morning Session

13.00 Lunch

14.00 Afternoon Session

16.00 Concluding Remarks

16.30 - Free time

19.30 Celebratory Dinner

## **Impressions and reflections on the proceedings**

Mário Caeiro and Simeon Nelson – conveners of the talks and editors of the Skyway book series

Two artists, two astrophysicists, a historian of science, a musician, the Skyway Festival director and the Toruń 2016 director met over two days on the 15th and 16th of August in this beautiful gothic city to discuss the relationship between art and astrophysics. The aim of the sessions was to foster interdisciplinary understanding and achieve a consensus on methods and approaches for future collaborative work and cross-disciplinary production of art, writing and dissemination.

The public Saturday sessions consisted of presentations by the artists and scientists. **Arthur Miller** opened the day with a fascinating talk about art's and science's shared imagination. Artists and scientists alike seek visual images of worlds both visible and invisible. They attempt to 'read' nature in a very similar way. At the nascent moment of creativity barriers dissolve between artist and scientist. They both think along conceptual lines, for example, for Einstein it was the discovery of a minimalist aesthetic, substituting particles to resolve the dichotomy between waves and particles in the structure of light; for Picasso it was the discovery of the aesthetic of reducing all forms in nature to geometry. These aesthetics were essential for Einstein's discovery of relativity in 1905 and Picasso's discovery of cubism in 1907. Arthur raised other key issues including the importance of stressing conception over perception, particularly in the art and science of the 20<sup>th</sup> and 21<sup>st</sup> centuries; the power of the visual imagination in making discoveries in art and science; how science affects art and how art affects science; the similar approaches of artists and scientists in the initial stages of their work. Highly creative thinkers have a good idea of where to begin – but not where they will end up. Art and science at their most fundamental are adventures into the unknown; they go beyond scientific visualisations to gain insights into, for example, astrophysical phenomena such as black holes that transcend mathematically based models. Arthur also described his model for creativity – Network Thinking – which explores the role of unconscious thought and the moment of illumination in solving problems.

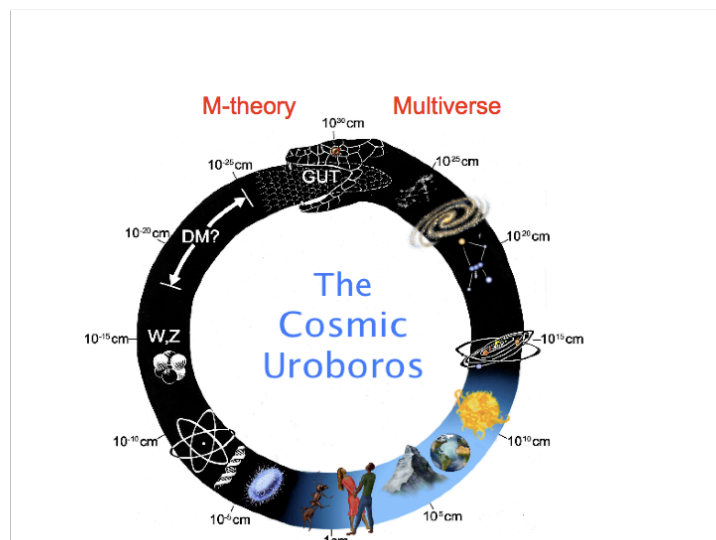
Under the motto *Polluting Miracles*, **João Ribeiro** presented his poetics as a painter and artist. He is not interested in dismantling semantically what he means by 'miracle': *The liturgy of life teaches me that the religion I experience is something beyond the power of explanation. Polluting Miracles* describes a transgressive attitude, a definition of his art practice, in which the invisibility of the real is primary source of marvel. Such transgression motivates his structuralist belief in the possibilities of dealing with different levels of information – political, poetic, humorous, historical and scientific.

João presented *St Lawrence's Tears*, a revolving light projection of the Perseids constellation on to a street in Toruń which highlighted two ways of seeing the Perseids meteor shower. One is the naturalistic explanation we know to be empirically true gained through observation and through a theoretical understanding of astrophysics. The other is a mythic interpretation the phenomenon; the martyrdom of St Lawrence, burned to death by Valerian in 286AD for refusing to recant his Christian faith. When ordered to turn the riches of the church over to the emperor, he disbursed anything of material value to the poor and sick of Rome and brought them instead to the emperor as the riches of the church. The legend has it that the meteors are his tears. The work symbolizes a triumph of human values over material ones. In that sense the work becomes St. Lawrence's mythical suffering creatively embodied in the urban fabric. This is a cohabitation of science and myth within the same phenomenon: both have truth value, one in the domain of Logos, the other in the domain of Mythos. This is precisely where a large part of the value of the Toruń meeting lay for us; in the understanding of two ways of knowing the world, not making the category mistake of privileging one over the other but seeing them as complementary, true within their proper domains.

**Simeon Nelson** gave a presentation on cosmological ideas in his practice and the research he has undertaken into the changing conceptions our world from the enchanted Aristotelian cosmos to the rational absolute Cartesian/Newtonian cosmos of the enlightenment through to the very uncertain cosmos that we find ourselves in today. Simeon focused on examples of selected work over twenty years of practice that deals with creation myths, scientific hypotheses and other narratives on origins and sentience He showed recent monumentally scale public sculpture and installation that set up counter factual propositions. For example, *Desiring Machine* a huge ornamented tree structure next to a the Eastlink motorway in Melbourne that looked simultaneously like a sort of crashed spacecraft fallen from the sky or a sort of industrial organism risen from the earth. He looked at the visual languages of art and science as commensurable manifestations of the fundamental human imperative to account for ourselves and our relationship to the Cosmos He discussed the way his work references scientific and artistic/ethnographic visualisation in a critique of how humans see the world around them and situate themselves within the cosmos. Considering such very open approach of the possibilities of relating art & science, Nelson has been invited to realize a series of works not only for the present edition of SKYWAY but for the following editions. These new works wil emerge from the complex ideas he will be developing in collaboration with the curating team.

The most eloquent image from **Bernard Carr's** presentation was a cosmological Uroborous with astronomical scales printed in powers of ten around its body, the largest scale being at the mouth and the smallest at the tail. His deployment of Uroborous as a motif for his scientific research was received enthusiastically and on Sunday it would be decided that this potent alchemical symbol should be the image on the cover of the first book. In a cosmological context the Uroborous symbolically contains the universe and humans as sentient observers of the universe in a feedback loop. This is the problem of consciousness

which can be framed concisely in the following question. How can science account for consciousness when it is the child of consciousness, or, how can a creation account for its own creator? This question is one that reductionist science likes to ignore but one that more holistically motivated physicists like Erwin Schrodinger and John Wheeler have embraced and by so doing have expanded the domain of scientific enquiry. The Uroborous creating itself in an endless cycle seems to be a very good metaphor



for this. The Uroborous also expresses the link between the macroscopic and the microscopic, the merging of these two domains being strikingly captured by the image of the snake swallowing its own tail. This is because, in the big bang picture, as we use our telescopes to look to greater distances, we are also looking

\* The argument between reductionism and holism within science and philosophy is deep-rooted. Reductionism holds that complex phenomena including consciousness are nothing more than the sum of their parts; that the explanatory arrows always point downward. Holism sees wholes, entities, agents and phenomena as self-ordering and teleological, not explicable from the sum of their parts. Complexity theorist Stuart Kauffman gives a good account of this dichotomy in his book *Reinventing the Sacred*.

back to earlier times, when the universe was smaller. In principle, it would have been infinitesimally small at the big bang itself. However, this is not the end of the story, because any mechanism for generating one universe could also generate others, so cosmologists now envisage the possibility of a vast ensemble of universes, called the multiverse, and this was the other theme of Bernard's talk. Although this idea arises naturally in modern theories of physics (eg. M-theory), the other universes can never be seen directly. They can only be visualized in our minds, so the top of the uroborous is natural meeting point of science and art.

The series of talks ended with a collaborative presentation from astrophysicist **Robert Priddey** and musician/composer **Alice Williamson**. This was a rare opportunity to see two minds trained in different disciplines working with a common language to understand and communicate hidden relationships and patterns in music and sound to cosmology across cultures and histories. They discussed the Pythagorean worldview, the origin of "rational" thinking, but emphasised that Pythagoreanism was a religion, with irreducibly irrational elements. Ptolemy, Copernicus, Kepler tried to sustain the Pythagorean scheme and make music central to their cosmologies. Music contains both the intuitive and rational in comprehending structures in art and in nature and 20th century composers such as Messiaen, Liget and Xenakis were influenced/inspired by mathematical apprehensions of nature and astronomy.

Toruń 2016 director, **Olga Marcinkiewicz** introduced the Sunday closed session which was opened a little to include a couple of very bright and interested students! Under the august gazes of Nobel Prize winners and eminent intellectuals around the walls of the imposing Artus Court board room, Olga described Toruń as a historic place of intellectual meetings and of the intersection between science, faith, society and art. In her capacity as Toruń bid director she sees art is an educative tool and an instrument of social change as well as the belief that art can take the lead in pushing critical debates forward. This session being devoted to looking at methods and approaches for future collaborative work and cross-disciplinary production, she stressed that some basic philosophical problems and opportunities should inform the discussion. She emphasized her interest in issues of a more internal experience of the challenges of the universe at a very personal and everyday level of consciousness.

**Mário Caeiro** introduced the idea of a book. We discussed in what way it should relate to the Skyway Festival and whether this book should be restricted to art and science or should it move into more metaphysical/spiritual territory. Subsequent to the meeting it was decided to produce a series of three books in 2010, 2011 and 2012, containing essays, artist pages and debates about the relationship between art and science, including critical engagement with the role of creativity in contemporary culture – scientific and artistic. The main areas of research should be astronomy, cosmology and astrophysics, astrobiology and cognitive sciences, history of ideas, mythography and philosophy, in the general framework of a transdisciplinary approach to art as knowledge.

The relaxed, playful and witty atmosphere of the Toruń meeting allowed ideas to be shared with unusual fluidity and candour, questions were asked of the scientists: Is it possible to properly understand scientific ideas like the second law of thermodynamics without knowing the mathematics behind them? Arthur Miller and Bernard Carr both felt that it was indeed possible to apprehend scientific ideas without mathematics, that what is important and creative in science resides in the imagination, in the ability to visualize, to think metaphorically. The idea of artists merely illustrating scientific ideas or phenomena was posited as an undesirable outcome of the art science relationship by Simeon Nelson. Arthur Miller had shown in his talk that the arts and sciences have an intertwined relationship and used the example of cubism and relativity. He showed that the relationship was two way, that artists had had their world view radically altered by the new discoveries in science and that later work in relativity theory had found imaginative inspiration in the work of

the cubists. Another intertwining is found in the development of perspective in western painting as a way of seeing the world locating an observer as separate from the observed which was paralleled in the rise of Baconian empirical science. Robert Priddey and Alice Williamson's fascinating overview of Pythagorean metaphysics and the interrelationship of mathematics and music in the development of science demonstrated the historical unity at a deep level of art and science. The question also arose of what effect might the new cosmology, for example string theory and the multiverse hypothesis have on the contemporary artistic world view, and, vice-versa, contemporary art practice, since the Modernist revolutions has evolved in many directions with potentially significant consequences for science.

One other point which came out was that there can be artist scientist relationships, characterised by the artist merely illustrating the scientific theory or of artists and scientists not being able to cross the epistemological boundary and meet in a space of genuine interdisciplinary mutuality. Part of the reason for this problem might be one of knowledge, artists not knowing their science, getting the facts wrong, which, we imagine must be irritating to scientists. Conversely scientists can have misapprehensions about what contemporary artistic practice is and may entertain rather out of date and stereotypical notions of what artists do.

Another important issue was clearly an outcome of the tensions between the artistic visions of the participating artists. Somehow João Ribeiro appeared as some sort of trickster, consciously undermining the slightest possibility of stable visions, while Simeon Nelson invoked the crystalline muses in order to achieve elegant and formal statements of ideas condensed into complex 'sculptural' representations of knowledge aware of their own elaborative and conceptualising devices. Somewhere outside this specific tension as perceived by Mário Caeiro, Alice Williamson seemed to represent *another language of music*, somewhere beyond the limitations of word and image to render the grandeur of the cosmos.

Other questions that were touched upon and will be addressed in the next Skyway symposia would be: do artists working with scientists on research projects affect the outcome of any science being done? Could it be said that generally science and the arts are reintegrating, realigning into a shared enquiry? Can art be a contribution to knowledge? Can science contribute to meaning in a way similar to the humanities? What is the nature of discovery in art and science? Do scientists discover or invent the laws of nature? Do artists discover or invent new ways of seeing the world? These are some of the questions that it is hoped the Skyway symposia, books and collaborative projects might be able to answer.

These and other points were raised and discussed over the weekend by our committed and enthused group and we all feel it was a tremendous success. Further meetings, studio visits and working sessions are taking place in London to make progress on the first book and to plan a series of artistic interventions for the next Skyway festival in 2010 and beyond into 2011 and 2012. We assume that there will be a real interest in following the first book of this series, provisionally titled 'Divining the Sky', with further titles 'Inner Horizon' and 'Lux Apparata' in 2011 and 2012. We hope these titles, intended to be artistic provocations, will be enlarged with an expanding field of researchers and artists in following years. We hope to find new possibilities and create a lasting and robust modus operandi for interdisciplinary practice between art and science. © Simeon Nelson and Mário Caeiro 2009