

## Capriccio, A Synthesis of Thought // *Meadhbh O'Connor*

In 132AD, Zhang Heng, the ancient polymath and genius living under the Han Dynasty in Eastern China, built the Houfeng Didong Yi, the world's first known seismograph. Eight elaborate dragons rested, upside down, against a large bronze vessel. These dragons represented the Chinese force of Yang. They were positioned to mark eight different directions, like those of a compass rose, and each tenderly held a bronze ball in its mouth. At the base of the vessel, eight open-mouthed toads, representing Ying, sat correspondingly beneath the dragons. The instrument, which was decorated with a vibrant display of mountain scenes and animals, was brilliantly calibrated to detect subtle tremors in the ground. A tremor detected by the device would cause an internal pendulum to swing and trigger a mechanism that lifted the head of a dragon. This dragon, pointing in the direction of the earthquake, would expel its bronze ball. The ball would drop into the mouth of the toad below, causing a clang to alert anyone near the device that an earthquake had occurred. This masterfully crafted object was not only an instrument of science, but an object infused with philosophical symbolism and sophisticated artistic expression.

This is just one of an incalculable number of accounts in which art, science and philosophy sit comfortably side by side, brought into being by human creativity. Interestingly, the original seismograph was never discovered. Countless replicas, theories and stories about the instrument have come to exist over the two thousand years since the Houfeng Didong Yi was built. It is not a vessel trapped in a moment of time. It is something more akin to a living entity around which new ideas, new mythologies and new revelations continue to evolve. It is not of one time, nor is it of one form. Rather, it is of many.

The range of inspiring conversations, unexpected ideas, chance encounters, to one's assumptions and many other surprising revelations that I have experienced during my residency at UCD Science is difficult to encapsulate fully in a few short words. However I can say that the UCD Art In Science residency certainly marked a turning point for me as an artist.

As an artist, I have always been fascinated by science and I feel a natural affinity with scientists. During my time at UCD, I met many interesting people who introduced me to new and rich avenues of thought. I engaged in all kinds of activities, from attending and delivering lectures, to participating in lively conversations, to building and exhibiting a sculpture on campus with the help of staff and students, and more. I enjoyed all of this immensely.

I was particularly surprised by the manner in which my collaboration with Tamara Hochstrasser<sup>1</sup> evolved. The ease with which we could discuss all kinds of topics, from society to the environment, came as something of a surprise to me at first. As artist and scientist, we both seem to be motivated by curiosity, and an interest in the natural world and society at large. Our work together does not necessarily manifest materially, rather it manifests in an exchange of ideas. This contravened my assumptions of what an art and science collaboration would be. The product of this fruitful exchange thus far has primarily taken the form of public talks and writing



on environmental topics, delivered both together and independently. I look forward to sharing this during the programme of events for *Welcome Disturbances*.

In light of what is emerging through my work with Tamara and other collaborations in which I am involved, together with the collaborations of all the participants in the programme, it is becoming clear that we are all traversing a new territory which takes us to a point outside of our respective disciplines. What is coming into existence is something new – a third sphere outside of art and science. I did not envisage this before embarking on the residency.

UCD Art In Science allows all involved the freedom to explore all kinds of subject matter without predetermined expectations. In recognition of this openness, the particular work I have presented for Welcome Disturbances was born of an array of ideas. The sculpture is a piece of theatre, an object of ‘retrospective science fiction’, that traverses many ages and many styles. In light of this, it is titled *Capriccio*, a word loosely understood as fantasy, mix or whim, with many uses from terminology in music and art to everyday speech.<sup>2</sup> In music the word describes a lively, freeform composition written without adherence to any one style. In art, it describes any piece in which there is a strong element of fantasy. The style was frequently employed by Baroque painters in which they juxtaposed in one pictorial composition architectural features, human figures and other elements which denoted vastly different eras. Just as the ancient Houfeng Didong Yi continues to develop new meanings today, in these paintings the passing of time does not signify the end of an idea. Instead, the fruits of human thought and creativity produced throughout many eras are interpreted as one totality.

The sculpture I have built in a sense is a fleeting, material manifestation of a cross-firing of many thoughts. It is not clear at what point these thoughts ‘begin’, nor at what point they ‘end’. It has some reference to the Medici collection of scientific instruments, to music, to time, and the modern discovery of tensegrity, amongst countless other thoughts which are impossible to trace. The form is held together using the principles of tensegrity – tension and compression.<sup>3</sup> The violin pegs and string are the tensioning force. The curved wooden struts act as the compression. Interestingly the discovery of tensegrity, which has many broad applications today and which has been enthusiastically adopted in the fields of engineering and science, is attributed to an artist.<sup>4</sup> This unexpected anecdote fittingly captures the reciprocal nature of the relationship between art and science. *Capriccio* attempts to preserve openness and ambiguity in place of resolution, with its broad reference points, in an effort to reflect faithfully my most lasting impression of UCD Art In Science as a continuum of intellectual exploration and creativity, with many more stories yet to unfold.

Upon commencing this piece of writing I did not know exactly what would emerge, rather this passage was formed gradually from a synthesis of many ideas, just like the sculpture. In the same way, it is through the gradual passing of time that the full effect of the rich exchanges and syntheses of ideas between the many artist and scientist participants who have come and who are yet to join the UCD Art in Science programme will be unveiled.

All are acts of creativity.

- 1 Lecturer and plant biologist of the UCD School of Biology and Environmental Science
- 2 Capriccioso! – free and impulsive in style.
- 3 Tensegrity is a new understanding of forces at play that was developed in the 20th Century. Also known as floating compression, it is a structural principle that sees isolated components (bars or struts) in compression inside a net of continuous tension (cables or tendons). The structures are stable not because of the strength of individual members but because of the way the entire structure distributes and balances stresses. The principle has extended beyond architectural applications to theories of cell structure in biology to anatomy to robotics to mathematics and many other disciplines.
- 4 Kenneth Snelson, a sculptor born in 1927 in the United States, is widely attributed to discovering tensegrity.

*Image on page 23 : Preparatory notes for Capriccio. Composite Image. 2015*

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*Méadhbh O'Connor (b.1984, Dublin), is an artist working through sculpture and environmental activism. After graduating with first class honours in 2009, she has since forged an ambitious art practice in which she works with scientists and experts in other fields. She has shown in numerous solo and group exhibitions such as Unknown Shores, a solo show presented at the UCD O'Brien Centre for Science, 2014; Towards A Dialogue of the Possible, Mermaid Arts Centre, 2014; powers + √roots, PP/S Projects, 2013; Things in Translation, Highlanes Municipal Gallery, 2013; and Biosphere, a solo show at Monster Truck Gallery, Temple Bar, 2011. She has received a number of awards such as the RDS Student Art Awards, 2009; UCD Science: Artist in Residence Award 2013; and the Fire Station Sculpture Workshop Award, 2015. Méadhbh currently teaches an experimental module she has designed, titled Creativity in Science and Art to UCD and international erasmus students, which was launched in 2015.*

[www.meadhbhoconnor.info](http://www.meadhbhoconnor.info)

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For more information contact

The LAB Gallery,

Foley Street,

Dublin 1,

Ireland

[www.thelab.ie](http://www.thelab.ie)

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++35312225455 Contact

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