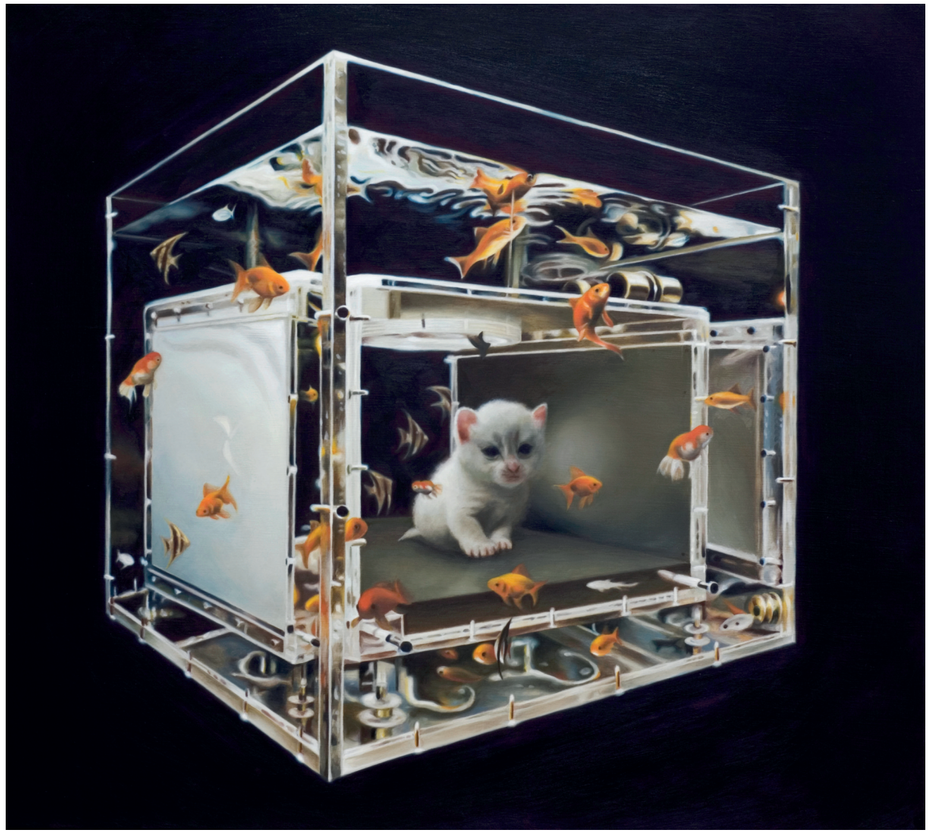


Eoin McHugh, Romantic Science 2009
Oil on canvas. 46 x 51 cm. Private collection.
Image courtesy of the artist and Kerlin Gallery, Dublin.

Art and Science in the Age of the Anthropocene

Doris Rohr

I wrote a lecture on art and nature for undergraduate students at Liverpool Hope University. As the programme required that connections be made between concepts of nature in art history and contemporary approaches in visual arts, I presented some contemporary artists who work with scientific concepts, and even travel with scientists, to explore the earth's extremes, such as Antarctica: Sian Bowen, Dorothy Cross, Chris Drury, Janette Kerr, and Jane Rushton, to name but a few.

Mostly these artists interpret scientific data in an imaginative and poetic sense. An example here is Chris Drury's *Everything Nothing III* (2014), an inkjet print based on scientific data (echograms), reworked and inscribed with the minuscule handwritten words 'everything nothing'. The artist explains the artwork's background and gestation:

> **Echograms are made by radar, beamed from the undersides of small aircraft, down through 4 km of Antarctic ice to the land beneath, and bounced back up into a computer, a similar technology to ultrasound imaging of our bodies. The image in the computer is a cross-section of the ice and landmass beneath the flight of the aircraft. The experience of Antarctica is one of vast expanses of nothingness, but in fact scientists can read in the ice the history of the earth over the past 900,000 years, and it can give us a picture of man's effect on the planet. So in effect the ice itself contains everything.** [1]

Chris Drury's journey to Antarctica was prompted by an invitation to accompany a group of scientists exploring the impact of global warming on melting ice caps. He noticed that radar echograms that explored the thickness of the ice resembled medical sonar echograms of human heartbeats. The artwork makes lateral connections between measuring the skin of the Earth (the ice) and the human heart. Drury referred to this as 'the heartbeat of the earth'. [2]

Such metaphorical and analogical reading of natural phenomena in relation to the human body and human consciousness speaks of a poetic sensibility. The idea of poetic science can be traced back to Aristotle, who had an holistic understanding of the natural world experienced through the senses. The idea of poetry suggests a lateral (analogical or metaphorical) and an essential understanding of truth, less concerned with data, evidence, or process. Thus, a hallmark of artists' interpretation of scientific knowledge is to sever the dependence on evidence-based conceptions of truth, using poetic licence to deconstruct and reconstruct knowledge so that it creates *fictions of science*.

This is where my interest in the term 'romantic science' stems from. I came across it when reading an interview with artist Eoin McHugh. McHugh's painting *Romantic Science* (2009) formed part of a larger body of work named *All Cognition is Recollection*, exhibited in the Kerlin Gallery in Dublin in 2009. In a conversation with Marta Gnyp, [3] McHugh discusses Alexander R. Luria, a Russian neuropsychologist who was intrigued by mnemonists' ability to recall facts and data. [4] According to McHugh, Luria coined the term 'romantic science' to accommodate what was otherwise not factually probable or accountable.

The introduction of a subjective point of view, to paraphrase McHugh, is important for artists now, when crossing the bridge from personally motivated artwork to pay reference to, include, or paraphrase insights initiated by scientific research. Speaking about his painting *Romantic Science* (2009), McHugh describes the discrepancy between subjective content and a visual language sufficiently transparent to the viewer:

> **On the one hand, I am attempting to create a pictorial language which can be deciphered in a more objective manner, and on the other, I am trying to create a purely visual language which is not reliant on writing to decipher it, but in fact opposes verbal language.** [5]

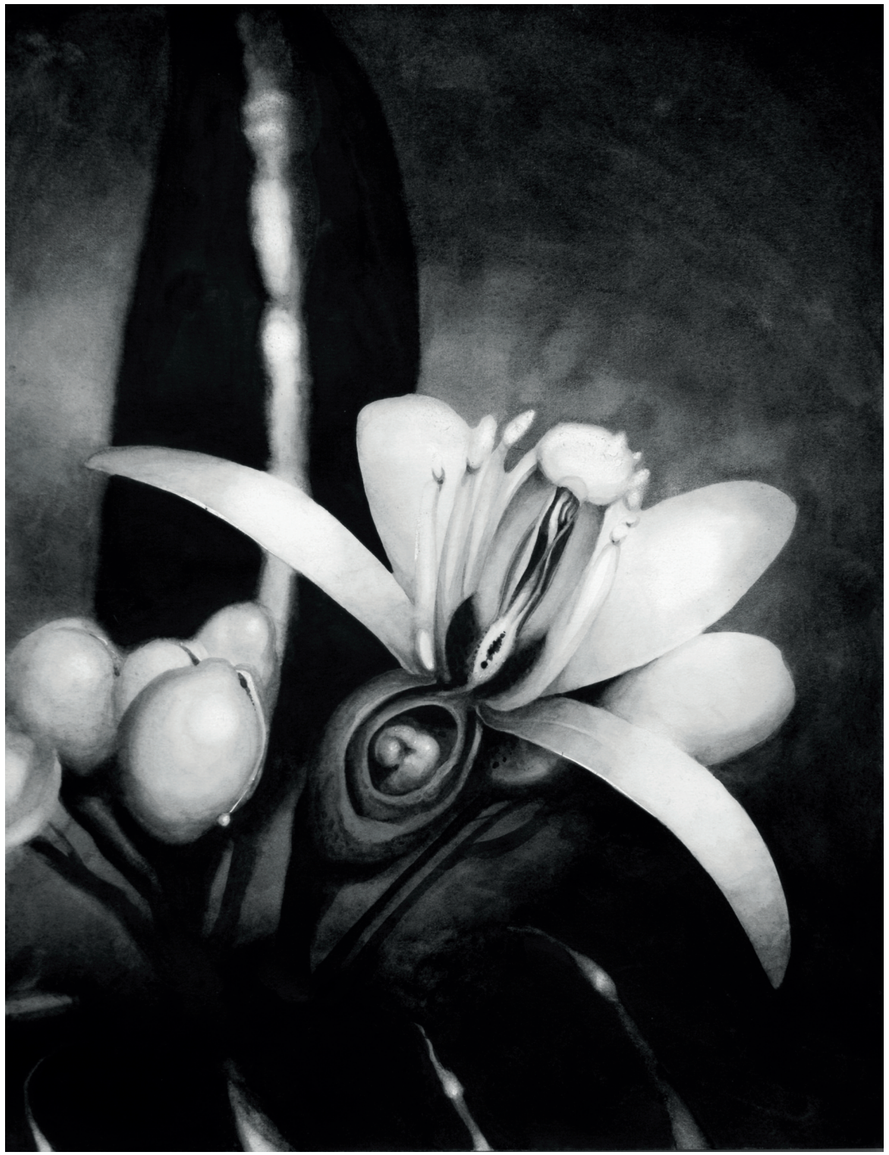
McHugh says that text – written language – objectifies visual content that is presumed to be unstable in meaning. He thereby proposes a triangulation of an image on an aesthetic level, in terms of visual content, and through associated or interpreted meaning (the signified); the verbal and the visual operate in tandem or sometimes compete when communicating with the viewer.

McHugh's statement can be related back to the project of semiotics. René Magritte's 'Les mots et les images' comes to mind – an article originally published in the journal *La révolution surréaliste* in 1929.[6] Objects are represented as simplified outline drawings and are paired up with words and phrases that challenge assumed signified content, destabilising the supposition that language or images are truthful.

McHugh's painting *Romantic Science* triggers a cognitive process that attempts first to recognise the depicted subject matter (kitten; goldfish) and reconciles this with a store of images and words stored in the brain's memory. After this categorisation, the mind becomes concerned with the plausibility of the pictorial content. This inevitably involves verbal processing, brought out further in dialogue with others. Discussing an artwork verbally is therefore a continuous process of translation.

This process is further complicated by McHugh's deployment of illusionistic painting techniques that appear to lend veracity to fiction. One is reminded of scientific laboratories, because of the artificiality of the context and the kitten's confinement. The painting acts as a metaphor for predator and prey, seductively clothed in cuteness, establishing a false relationship on several grounds: the *improbability* of the given visual context, the sentimentality of humans' relationship with domestic animals, and the torturous relationship we endorse, to larger or lesser degrees, when tolerating the role of animal laboratory experiments. In the meantime, a fourth relationship is alluded to: that of the wildness in cultivated species, who despite all their apparent cuteness conform to natural instincts.

More to the point is how McHugh discusses another artwork, *Section* (2010), depicting a severed flower, cut open to reveal the plant's internal reproductive organs. We are familiar with this type of dissection from botanical diagrams, but the painting also rather uncomfortably recalls anatomical drawings of the human body, in particular a drawing by Leonardo da Vinci showing an embryo inside a mother's womb – a drawing he would have produced from observing the dissected body of the dead mother.[7]



Eoin McHugh, Section 2010
Watercolour on paper. 29 x 37.5 cm. Private collection.
Image courtesy of the artist and Kerlin Gallery, Dublin.

The comparison is analogical, as the flower painting exposes ovaries, part of the internal seed generation of a plant. But perhaps this is exactly where the concept of a romantic science begins to make sense. It is where a sense of unease, of a moral undercurrent, emerges. Incidentally, McHugh discusses morality at the very start of the interview with Marta Gnyp.

Is it the artist's 'job', now more than ever, to go beyond illustrations of the dominant models of morality, to go beyond being the agent of church or law, to ask questions of *subjective impartiality* (another oxymoron)? Because now, more than ever, perhaps much contemporary art finds itself in a position to raise uncomfortable questions, establish and interrogate power relations, and create unease about our approach to social and ecological issues of concern.

Observations, no matter how limited or faulty, can be anchored in studying a microcosm, and from that understanding one can project into larger worlds on the basis of metaphorical analogy. John Ruskin, whose bicentenary is celebrated in 2019, was a great champion of studying detail. He was no fan of dissection, as he believed in holistic approaches. In his *Elements of Drawing* he advocated studying small stones, pebbles, and rocks, so one could get a sense of how a stone stands in for a larger geological formation, the mountain or landscape.[8]

With Ruskin, appreciation of detail, the organisation of plants or mountains, or indeed of a Venetian palazzo façade, all speak of an underlying moral order regardless of whether it is cultural or natural. He writes about this in *Modern Painters V*, affirming that the 'law of help' is intrinsically life-affirming:

> **Thus, intensity of life is also intensity of helpfulness – completeness of depending of each part on all the rest. The ceasing of this help is what we call corruption; and in proportion to the perfectness of the help, is the dreadfulness of the loss. The more intense the life has been, the more terrible is its corruption.**[9]

This poetic science bears affinity with Johann Wolfgang von Goethe, who also wanted to bridge the gap between the empirical and fact-based science of modernity, and a holistic and imaginative approach, combining creative forces across the arts and the humanities.[10]

Like Goethe (but, I believe, unbeknown to him), Ruskin wanted nature to be what holds science and art together. His geological knowledge was immense, and his interest in stones, rocks, crystals, and mountains became an aesthetic theory. Ruskin was not content with the term 'aesthetics', as it was overly reliant on sense experience. Empirical and observable data alone would never be sufficient for him. So *Theoria*, his idea of an integrated moral aesthetic of sorts, which is aesthetics plus conscience, was his answer or proposal to the widening rift.[11]

And this remains relevant. We know that science without ethical control is self-harming to our existence and that of our fellow creatures and the wider conditions of life. Ecology of a poetic type can be regarded as a holistic system where theory and moral conscience go in tandem with practices often concerned with re-establishing a mutually supportive system of a life world where all interconnect and make survival and coexistence feasible and sustainable.

So how far now can we, as artists trained in a dualistic system, contribute to a holistic, ecological understanding of art and science intertwined? We do not lack models, even though they may appear flawed in hindsight.

A case in point might be the actions and happenings of Joseph Beuys. Despite his tendency towards self-mythologising, he contributed to an expanded understanding of art through civil action; for example, citizens actively seeking to beautify their urban world through symbolic and actual tree-planting actions, as in the *7000 Oaks* project (1982).

Not only did these actions contribute to better city environments, they also gave people a sense of direct advocacy and citizenship, in dire need of reconsideration in our current decade of misunderstood models of democracy via plebiscites and online 'armchair' participation in politics. Active participation in the planning and 'rewilding' of urban and rural areas is a huge social and cultural achievement. Going by Beuys's definition, all those who took action by planting a tree in the *7000 Oaks* project became artists and activists.[12]

Another artist of interest here is Jane Rushton. She talks about her experience of visiting Arctic Greenland and of 'the level of isolation that occurs when one works within the landscape for weeks on end'. She concludes:

> **There is necessarily a slowing down; an engagement with nature on a deeper level; a changed mental state that is open and receptive, and an increased awareness of the interconnectedness of things. Greenland provided the paradox of raw beauty and the harsh reality of a wild rugged landscape, which at the same time offers a sense of immense space, and an awareness of the minutiae of the elements that make up the landscape. The paintings and drawings I made from there evoke the experience of the landscape rather than depicting it. In this sense, the work is one removed from the initial impetus, taking its form at the interface between memory and process.**[13]

I don't believe that the type of immersion Rushton is describing has become redundant, as Timothy Morton claims in Ecology without Nature (2007).[14] I also think of these experiences as acts of sensitisation to the environment. Not only are they beneficial to our own health (slowing down, tuning in to a natural rhythm of sea waves, or listening to leaves in wind or a stream rushing towards the ocean), they also make us aware of how we are part of the larger environment, and how dependent we are on the surrounding life world.

Such appreciation ought to lead to a desire to safeguard and to protect, a sense of care driven partly by collective guilt. This is what environmental charities tap into, and here Timothy Morton's critique might be more relevant – hanging on to romantic and guilt feelings may get in the way of the bigger picture, of greater priorities in our age of climate change and catastrophic species loss.

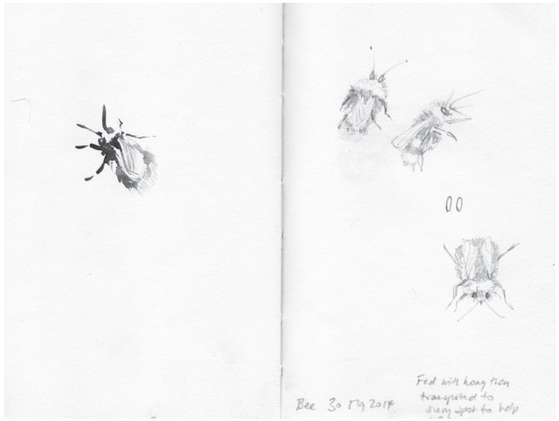
This is where emotion and sentiment reappear and pose problems. Do we want to protect a species we have overfished, for the sake of sentiment or for the allegedly more rational sake of future medical potential? Is it always self-interest that will hold the winning argument in the age of the Anthropocene? Are sentimental concerns at best misguided, or at worst a type of bait or wrapping paper?

Indulging in the wonderful escapism of drawing or painting *plein-air* raises as many uncomfortable questions for me, in my own practice, as it reassures my sense of self and belonging, of being emplaced. These contradictions are inevitable for anyone who is prepared to examine their conscience. But it does not make the practices of drawing or painting invalid, nor, I would contest, does it make emotion invalid.

Emulating a rational or pretend-rational language that objectifies the world may be one way of drawing attention to claims of scientific objectivity, yet I don't think artists' intentions need to be competitive with scientific ones.[15] It is about presenting a critique, and more so, about being beyond reactive: it is about imagining an alternative, on a critical, poetic, lateral level of engagement with science. And here is where, in my layperson's understanding of science, there is circularity and connectivity, as science blue-sky thinking is also based on not being boxed in by rules or the inability to depart from rules.

In the end my motivation for drawing the natural world comes from a subjective, emotional perspective that is fuelled not only by emotional release but also by an enormous drive to protect and nurture life worlds around me. I remember as a child sitting next to buckets of rainwater my father collected during the dry months of the year, when our well proved insufficient to give us mains water; my activity was of rescuing drowning flies, wasps, and bees, occasionally getting stung in the process. The miracle of watching a fly or bumblebee slowly drying its delicate wings and rubbing its legs to drain off the excess water, and then seeing the insect fly off into the sky, was a continuous reward, an activity and contemplation I still practise to this day.

Some of the most convincing drawings I have made of the natural world directly observed are of such rescued visitors, whereas drawing specimens from taxidermy speak of mourning, loss, and compassion. If Christians in medieval Europe identified emotionally with Christ's suffering through painting (for example, Matthias Grünewald's *Isenheim Altarpiece*), then my spiritual understanding provides a kin gesture of empathy with the catastrophic loss of species in our age of the Anthropocene.



Bumblebee (rescued) 2014
Notebook, pencil, watercolour. 20 x 15 cm.
Artist's own collection and artist's copyright.

Rachel Carson, the 'mother' of ecology as a discipline, wrote prophetically in her scientific yet poetic 'fable' *Silent Spring* on the apparent inevitability and cruelty of human interaction with the wider world, the inability to change track, and the horror of being a passive bystander. She made a passionate plea to think of turning the nightmare, or dystopia, into a sense of salvation on non-religious terms.[16]
There is much we can learn from Rachel Carson's capacity to challenge political and economic short-term self-interest, as she aptly summarises:

> **The question is whether any civilisation can wage relentless war on life without destroying itself, and without losing the right to be called civilized.**[17]

The issue here then is to foster the *long view* in politics and economics that takes into account the morality of human actions and their consequences (depleting the richness of life worlds), where science forms part of an integral democratic political system.[18] The improbability of this happening calls for a romantic science of quite a different order.

[1] Image and accompanying text available from the artist's website: http://chrisdrury.co.uk/dust-dust/.
[2] Author's notes from public lecture at Lancaster University, 5 February 2019.
[3] Gnyp, M. (2010) 'Analyze This – Eoin McHugh takes us behind the scenes of his art'. *Zoo Magazine* #2, 8, 20 August. www.martagnyp.com/interviews/eoinmchugh.php.
[4] Liebermann, E.J. (2002) 'Romantic science and the experience of self: Transatlantic crosscurrents from William James to Oliver Sacks (review)'. *Bulletin of the History of Medicine*, 76(4), pp. 846–47. https://muse.jhu.edu/article/4994/summary.
[5] Eoin Mc Hugh, in Gnyp (2010).
[6] Magritte, R. (1929) 'Les mots et les images'. *La Révolution surréaliste*, 12, pp. 32–33. http://ideophone.org/magritte-on-words-and-images/.
[7] *Recto: The fetus in the womb. Verso: Notes on reproduction, with sketches of a fetus in utero, etc.* c.1511 Royal Collection Trust Online Library. https://rct.uk/collection/919102/recto-the-fetus-in-the-womb-verso-notes-on-reproduction-with-sketches-of-a-fetus.
[8] 'Go out into your garden, or into the road, and pick up the first round or oval stone you can find […] if you can draw that stone, you can draw anything; I mean, anything that is drawable. Many things (sea foam, for instance) cannot be drawn at all, only the idea of them more or less suggested; but if you can draw the stone rightly, everything within reach of art is also within yours.' Ruskin, J. (1857) *The Elements of Drawing Works XV*. www.lancaster.ac.uk/the-ruskin/research-and-collections/additional-resources/the-complete-works-of-john-ruskin/.
[9] Ruskin, J. (1905) *Works VII* (Part V). This quote has to be read in context. Ruskin talks about the helpful relationships of leaves and branches in a tree, protecting the vitality of the tree, and how loss of parts or limbs is possible and even desirable in a tree, but not so in an animal or human. So the intensity of life is increased in an animal whose limbs are not replaceable (or replace themselves). The linking of corruption with loss seems to me related to Carson's thoughts.
[10] Seamon, D. (2005) 'Goethe's way of science as a phenomenology of nature'. *Janus Head*, 8.1.
[11] Fuller, P. (1988) *Theoria*. London: Chatto & Windus.
[12] Scholz, N. (1986) 'Joseph Beuys – 7000 Oaks in Kassel'. *Anthos* (Switzerland), no. 3, 32.
Cooke, L. 'Joseph Beuys 7000 Oaks'. Dia Arts Foundation. https://bin.sc.jas.life/Collection/Net/allanmc/web/lynnecooketexts.html.
[13] Rushton, J. *Land2* collective. http://land2.leeds.ac.uk/people/rushton/; www.resipolestudios.co.uk/jane-rushton.
[14] A proposition that Timothy Morton makes in *Ecology without Nature* (Harvard University Press, 2009 [2007]).
[15] Tim Ingold referred to this in his keynote speech, 'Art and Anthropology for a Sustainable World'. London: Royal Anthropological Institute, 11 June 2018. https://vimeo.com/274513417.
[16] Rachel Carson, a trained scientist working for the US government, had an extraordinary capacity to write about nature in the most poetic fashion. Titles like *The Sea Around Us* (Staples Press, London, 1953 [1951]) and *The Edge of the Sea* (Penguin, Harmondsworth, 1999 [1955]) attest to this. Her dystopian elegy *Silent Spring* (Hamish Hamilton, London, 1963 [1962]), written as a dark prose poem, summarises her fieldwork and warns against the use of pesticides deployed in intensive farming in the USA.
[17] Carson, *Silent Spring*, p. 82.
[18] A parliament of nature that includes science (but not the arts!) is a proposition for reforming democracy that Bruno Latour advocates in *Politics of Nature* (Harvard University Press, 1999).