DIGITAL: THE WORLD OF ALTERNATIVE REALITIES

Digital Art selected from the JAHM collection, highlights digitally generated artworks in formats from prints, photography, sculpture and video.

CATALOGUE ESSAY

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The sum effect of the digitisation of information across this vast array of interactions can be thought of as organising matter in two great spheres. Within our species it will act to integrate and synchronise individual human thoughts, emotions, and actions, in effect creating the beginnings of a unitary consciousness. At the global level, however, it will operate to exert our influence on nature. We can also see the beginnings of this, for example, in global environmental treaties such as the Paris Agreement on climate change are aimed at altering Earth's temperature, and thus its metabolism and chemistry. And of course the Paris Agreement would be impossible to monitor and implement without digital technologies.

Digitisation is further advanced in integrating human minds than it is in synchronising our interactions with nature. But the deployment of digital technology to create a global array of sensors – in the form of satellites, soil probes and oceanic buoys – which now exist in the millions, and are increasingly linked to functions such as watering systems – are in effect a rudimentary nervous system for Earth, with our ever more unitary, non-digital brains at its epicentre. Despite achievements such as the Paris Agreement, we are still far from being able to act as a unified mind over the 'body-world' that we are currently endowing with this 'nervous system', but the conditions seem set for a strongly self-regulating planetary system to emerge. The first person to see this possibility was the scientist James Lovelock, whose 'Gaia hypothesis' posited that Earth already regulates its temperature and chemistry, but that with a human mind guiding planetary processes, that regulation could become far stronger and more precise. The current state of Gaian regulation of the Earth is, perhaps, akin to that of a new born child – as yet incapable of regulating or co-ordinating itself, but with the potential to do so. Birth is the most perilous moment in all of life's journey, and our Gaia-world is being born into a universe without parents or other protectors. Indeed, as several of the artworks in this exhibition reference, in its current state, our partially co-ordinated global human mind looks pathological and self-destructive, rather than nurturing.

These great trends have at their centre a paradox. As our co-ordination increases, we stand at risk of losing part of our individuality. The creation of digital art offers both a lucid window into this dynamic, as well as a counter-current in digitisation. Before turning to digital art, however, we need look at the context that the great digitisation is occurring in. It is well to remember that the digital web we are forging is being cast over an already digitised world. Lovelock's Gaia hypothesis posits that life has created Earth in its current form, and DNA – the very blueprint of life – is itself a digital medium.

Which is the better organised – a jungle, or a formal garden? Many people would see the formal garden as highly organised, and the tangle that is the jungle as chaotic. But in terms of physics and the laws of nature, the jungle is immaculate in its organisation. In a jungle, not a single leaf is out of place; and if, perchance, a storm or some other disturbance spreads chaos, the jungle quickly re-grows, guided ultimately by its DNA, into its highly organised form. Another way of thinking about the difference between a garden and a jungle is that a garden is organised by the non-digital human mind, while a jungle is organised via the digital information encoded in DNA and mediated by the natural environment. Below that clipped hedge is a living bush just bursting to escape, and optimise its form so as to maximise its growth potential.

Interestingly, silicon chips are an invention of a non-digital and still largely mysterious information storage system – the human mind. The brain, it seems, is neither a truly analog nor digital system, though it has some characteristics of both. For example, brain function can be thought of as digital in that a neuron can either 'fire' or not – which

is a binary or digital state. But neuron function is far more complex than that. As a result, unlike computers and other digital systems, our brains cannot replay instruction sequences without introducing many errors. To see the difference, try to recite a long poem from memory, then google that same poem. The digital storage systems that google relies upon will reproduce the poem perfectly; but your non-digital memory will have great difficulty doing so. Poorly understood the human mind may be, but it remains the most sophisticated information system in the known universe.

What is it about digital information systems that make them so powerful? In essence, their power lies in the density of information they are capable of storing. So information-dense is the DNA digital medium, for example, that it not only organises form at the macro scale (such as our human bodies), but right down to the cellular and subcellular level as well. It is axiomatic that information organises matter, and the more information that can be packed into a given space, the greater the capacity an information system has to organise. This is true whether we are speaking about the DNA that forms the blueprint for our bodies, or the various computational machines invented by humans.

These two systems – silicon chip and DNA – are not as different as you might think. In 2013 the European Bioinfomatics Institute managed to store 5 million bits of data, in digital format, on DNA. The data encoded comprised both text and audio files (including Martin Luther King's 'I have a dream' speech) in a fragment of DNA that looks like a barely visible speck of dust. Astonishingly, all of the encoded data was retrieved and reproduced successfully.

Just how much of nature's organising principal is digital remains a matter of conjecture, in part because the organising principals of our universe remain mysterious. The discovery in recent decades of 'nonlocality' in physics highlights how much there is to learn. How, physicists wonder, do twinned particles separated by light years, alter their states identically and instantaneously? The contradiction between 'nonlocality' and Einstein's concept of the universe, where nothing can travel faster than the speed of light, challenges current models of how the universe works. One thing we do know, courtesy of quantum physics, is that observation changes everything: according to physicists, a single particle in an unopened box does not have a location until it is observed. Before that, as the French put it so elegantly, it possesses merely a *densité de presence* – a probability of being in one place at any one time. The enigma is expressed pithily in physics in the axiom 'Don't look: waves. Look: particles'.

Given the very great uncertainties about the nature of the universe we inhabit, we cannot be sure about the nature of the information systems underlying its organisation. But given the exceptional density of information of digital systems, it seems possible that they play a role. Indeed speculation about the underlying role of digital systems in our universe has led a common trope in science fiction – that the world we experience stems from a computer program, dating from the beginning of time, and perhaps generated by a lost civilisation, that has organised all known matter and therefore ourselves. In other words, we reside inside a huge computer programme.

In such speculation, we encounter the elision of science and art (in the form of science fiction), in a form that gives rise to powerful tools with which to re-examine the very meaning of existence. It is into this world that the visual digital artist, whose work comprises this exhibition, is now emerging. While some digital art looks beguilingly similar to analog art (for example, Steven Haley's 'One Second series'), it is in fact profoundly different. Traditional (or analog) art, uses pigments or form to create an illusion that our non-digital brains endow with meaning. In traditional analog art, the act of creation is often self-evident. It lies, for example, in the single stroke of white pigment that Rembrandt used so exquisitely to define a 17th century Dutch collar. But in the world of digital art, in which creation involves computer codes, where does the creative genius lie?

The question is problematic because a key feature of the digital storage of information is that it must be at a distance from the product. In biology, for example, the proteins that our bodies are made of and whose blueprint is encoded by our DNA, are not fabricated by the DNA blueprint itself, but by 'carrier' RNA, which copies a section of DNA in order to manufacture the protein. It is axiomatic that digital information can only ever be a blueprint for something, which means that there must be something between the digital data and the product – RNA, or a computer programme and a machine such as a printer, or some other thing.

In this world of 'action at a distance' the act of artistic creation can be hard to discern. Just how hard depends partly on how much of a distance exists between the digital blueprint and the product. Stephen Haley's 'one second' series, is intriguing in this regard. One Second (oil barrels 1146) is a street scene complete with what appear to be early modern apartment buildings bisected by an 8-carriage roadway, above which are suspended numerous oil barrels that represent the total volume of oil produced globally every second. It is a shocking image, which has been built up by purchasing the various items – such as buildings and oil barrels – from an on-line gaming store. The files are highly-detailed and three-dimensional, and can be replicated at any scale. Indeed the barrels look so extraordinarily three dimensional as they float in the air that they quickly become the focus of attention. Haley's 'One Second (plastic bags 31688)' produces a very different effect. It is a visual representation of the number of plastic bags produced every second, and the sunset-like light and thousands of tiny bags gives the image a murkiness evocative of pollution. I find it intriguing that the density of information of digital image-making used in this distinctive way can produce such opposite effects. But where does the creative spark lie? The blueprint for the

elements in the work were created by others. Are they merely the equivalent of the pigment a traditional artist uses? Is Haley's arrangement of them on the page – as well of course as devising the concept of creating art in this way – where the spark lies?

Haley's 'Vanishing Point 2008' interposes an additional step. Depicting a New York style office interior, in which each window looks into the same room, it is taken from a physical model of New York which is in Tokyo. As a statement about the uniformity of modern cities, which are increasingly economically and environmentally untethered from their geographic location, it is powerful. But it also speaks to the increasingly meaningless of life in such conurbations. This resonated strongly with me, for it really matters to me whether the birdsong that wakes me comes from a native bird or an introduced one, because the native bird is tethered in the fabric of a local ecosystem that gives its every act meaning and purpose. The introduced bird, in contrast, lives in a truncated form of ecological chaos. The difference is that between the sound of a glorious orchestra and a half-dozen deaf and untrained people sawing and blowing away on their instruments.

Simon Finn's Pier Structure is another work of environmental relevance with fine granularity and stark realism. Simon's began the project with a survey of an actual pier. He then created a digital replica of which is then constructed, which he then subjected to a simulated digital storm. When the digital structure reached a state of dilapidation that appealed to him, he halted the process. The partially destroyed pier was then reproduced using a 3-D printer. Finally, Simon made a charcoal drawing of the printed replica. Drawing with charcoal is surely the most ancient method of creating art, and so here we see the artistic enterprise encapsulated – from its oldest to its most recent manifestation. To me, the work is a wonderful interrogation of the boundaries of digital art and the creative process, as well as being a reminder of the increasing dangers of climate change.

Richard Blackwell's Supermolet. Belt (2012) is a black and white digital print depicting four objects that appear to be apartment buildings arranged in the form of 3-dimensional crosses, floating in a sea of shards. The shards do not seem to be derived from buildings like those depicted. The blackness of the background is surely the blackness of space, for the buildings demand a weightlessness that only space can provide. I cannot decide whether the subject is a world in decay, or a world newly grown from fragments.

Catherine Nelson's Monet's Garden (2010) is composed from a photograph of the garden which has been stitched together digitally so that the lily-pond at its centre becomes a sphere surrounded by trees and clouds. Is it a commentary on our compulsion to impose the chaos of gardens on nature? Above all it is a beguilingly beautiful work that comes closest to capturing the illusory beauty of traditional landscape painting, albeit with a Hieronymus Bosch-like touch. Shannon McGrath's Fraction #03 is also a digitally altered photograph. Like Monet's Garden, it transforms a medium which captures images of the real world, into an abstract.

Gregory Bennett's Utopia #1 and Utopia #2 (2011) are digital prints taken from a digital video animation. In utopia #1 various shapes, populated by diminutive human figures work, play and carry out what look like ceremonies. Perhaps they represent future life, or our highly compartmentalised modern lives. In any case, they are surely a reflection on the effect of digitisation on our lives. In Utopia #2 the constraining walls of the various shapes seem to be disintegrating, releasing the figures. But are they being released to destruction, or connection? The works raise intriguing questions about of the efficacy of a few frames from a video to transmit the entire meaning of the work.

Stephen Haley's Single Chanel Projection is a video road trip through a desolate urban environment. It is constructed from digital files purchased on the internet, and its fundamental message seems to be similar to that of his still work 'Vanishing Point', in that it reveals a desolate urban landscape, untethered from its biological context. It's strictly managed grass and trees look dwarfed and meaningless in the great sea of buildings that surround them.

Jiang Pengyi's 'Unregistered City No 7' references an existing dystopia. Based on a photograph of a bathtub in a derelict building, the water and building rubble in the bath have been digitally manipulated to represent a harbour. But what a horrible harbour it is, with high-rises standing atop piles of rubbish, and looking into a foul waterway that one senses was once a place of great beauty. Jiang is from Honk Kong, and the dire state of Hong Kong Harbour, parts of which are biologically dead, has surely been an influence. Contemplating it makes me see Port Philip Bay anew. Once a glorious place, today it is the industrial infrastructure that catches the eye before the beautiful ochre bluffs and often cerulean water does.

Yang Yongliang's Snow City Quanternity 3 is in some ways a terrestrial counterpart for Jiang's 'Unregistered City No 7'. Superficially, it resembles a classical Chinese landscape portrait depicting snowy, cloud wreathed mountains. But looking closer, you can see that the 'mountains' are just masses of buildings, the clouds air pollution. A file of cranes flies into the distance, while a flock of construction cranes stands tall in the foreground.

Debbie Symons' World Species Market is a video installation which takes a digital stock market-like screen which, instead listing the price of shares, lists endangered species according to the number of individuals remaining. It speaks powerfully of the danger than neoliberal economics represents to our world. Michael Candy's Digital Empathy also highlights the dangers surrounding Gaia's birth. Candy's device is an interactive, hybrid work consisting of a sculptured head which has tubes allowing for the simulation

of tears, a mobile tracking device and a video screen. The work tracks, via a social media website, atrocities in Syria, the sculptured head 'crying' each time such an event is detected. It is in my opinion a brilliant work, provoking deep thought. The imagery of an emotionless robotic head, crying – perhaps even crying in our stead – should make us all question our response to the war in Syria. But brilliance is not beauty: I am not sure that I would want to have it in my home.

Daniel Crooks Pan no 7 (Strange Attractor) is a video – which surely is a far more familiar digital format than canvas-like two-dimensional works. The digital format permits easier manipulation than analog video formats, and in this case the Shanghai street scene morphs into an abstract composition. Perhaps the distortion refers to the rate of change in China, or to the destruction of Chinese traditional culture. Tim Maguire's digital video is very different. It's a shot of the familiar windowpane waterfall at the National Gallery of Victoria, with the water colours separated using a prism, shot in an overlapping format and slightly out of sequence. Starting with clear water, we end with a vibrant, sliding mass. The colours revealed by the prism are of course always there, giving us a sense of seeing the wonderful that underlies the ordinary.

Tristan Jalleh's video Fighting Rotoscope projects scenes from New York City on the head and body of the main character from the 2009 Hollywood action movie 'Fighting'. I don't know what to make of it except to acknowledge that as artists enter the digital world, astonishing new ways of expression are being created. Daniel Crooks' Pan no. 10 is a video montage built up of scenes from various Melbourne laneways. It is unmistakably Melbournian, and its playful references to time and space make it a delightful work.

Stephen Bram's work is as different from those discussed previously as can be imagined. 'Untitled Two-point Perspective 2007' and '2008' consist of simple black and white rectangles filled with, in one instance, overlapping outlines of rectangles and squares, and in another, shaded rectangles and squares. It is, to my eye at least, similar to much analog abstract art, the principal difference being that in Bram's works the forms are 'painted' using digital files. The works raise deep questions about the act of artistic creation: does the fact that the artist either created or acquired the digital files, rather than used his manual dexterity to paint them, matter? Has mental dexterity replaced manual dexterity? Is purpose, or the physical act of painting, more important? The works make me think about the way we value art.

Jacob Leary's The Sorting Process is evocative, to me at least, of Australian indigenous art. It consists of aggregated images sources from the internet and stitched together digitally. Does artistic creation, it seems to ask, consist solely of new images in a world awash with existing images? Spatial Labyrinth by Peter Daverington conjures a space rather similar to that of a renovated warehouse. Flights of steps float, translucent in space, while columns and frames hint at structural elements. The overall sense is on an illusion – an Escher-like trick. Greg Neville's Gooo-og manipulates an image from google earth to create an abstract image akin to the ornate stone inlay seen in some Indian temples, while Paul Snell's 'Pulse #201021 is a series of concentric coloured rings which has been created through the deconstruction of digital photographs taken by the author. In its creative journey from complex to simple, it makes me think of the act of cremation or decomposition, for both processes take a complex entity and render it into simple molecules that can be used as the basis of new creations. Ollie Lucas Neon Dispersion looks like a painted work of abstract art, but in fact it was created digitally. Once again, it forces one to ponder the boundary between digital and analog art.

Gordon Munro is a mathematician who took up art in his 60s, and in his work the question of where creation lies in digital art becomes entirely unavoidable. That's because Monro works by inputting mathematical formula into a computer, which in effect code for the artwork. His work thus becomes an investigation of artificial intelligence in the creative process. This is particularly significant in the emerging world of digital art, wherein a digital 'blueprint', variously sourced, is used in conjunction with a machine to create art. In all but abrogating human responsibility for the work – beyond selecting which mathematical formula to input into the computer – Monro stands at one extreme of practice. His works 4.02a, 4.02b, have, perhaps predictably, a machine-like precision and patterning about them that reflects this method of creation. I find them extremely thought provoking, though unbeautiful.

Digital art throws up many questions beyond that of where the act of artistic creation lies. Purchase a work of digital art, and you are likely to receive a small box, inside of which nestles a nicely fetishized memory stick containing the blueprint for the work. I imagine that it's quite a different experience from purchasing a canvas. And while a work on canvas can be stored away and only infrequently viewed, the digital work doesn't exist until its digital information is manifested by a machine.

The high fidelity of digital art also sets it apart. It is the work of seconds to replicate with high fidelity the blueprint for an artwork stored on a memory stick. So what does it mean to own an 'original' work of digital art? Analog art of course faces its own issues in this regard. Photographs of works on canvas abound, but it takes a talented forger to faithfully replicate a painting. In the newly emerging sharing economy, such distinctions may not matter that much. But in the existing world of conventional art, with its emphasis on authenticity, it presents a conundrum.

One indisputable advantage of digital art, however, is its information density and therefore potential for fine granularity. In principal, this allows digital art to mimic nature in the detail it is capable of representing. And in the right hands, such fine granularity has the potential to create aesthetic and compelling works.

Image courtesy the artist.

Tristan Jalleh

Fighting Rotoscope

2016

Debbie Symons, World Species Market, 2014 Image courtesy the artist

Debbie Symons

World Species Market

2014

Image courtesy the artist and ArcOne Gallery.

Peter Daverington

Spatial labyrinth

2010

Image courtesy the artist and Anna Schwartz Gallery.

Daniel Crooks

Pan no.7 (strange attractor)

2010

Image courtesy the artist

Michael Candy

Digital Empathy Device

2016

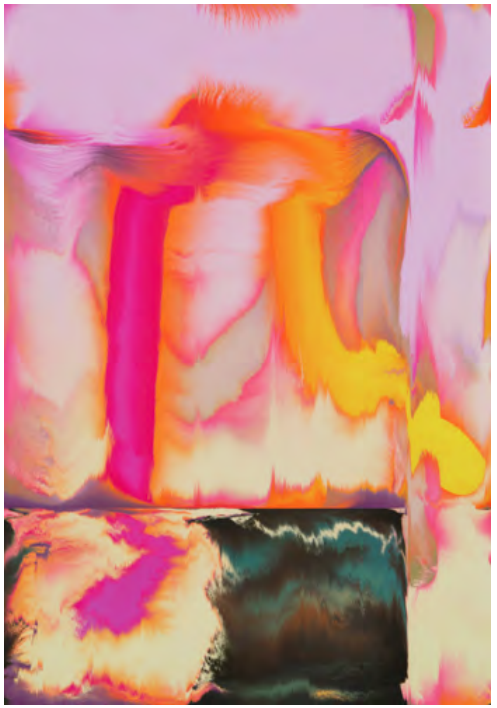

Image courtesy the artist.

Ollie Lucus

Travelling Matter

2016

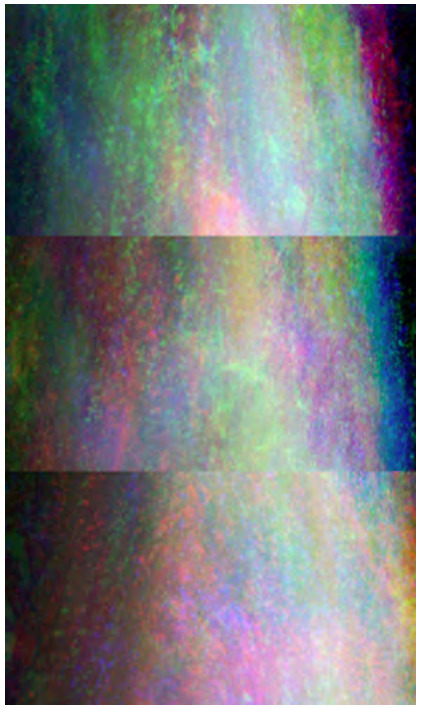

Image courtesy the artist and Tolarno Gallery.

Tim Maguire

Fountain, botanical gardens, Melbourne

2010

Image courtesy the artist and Two Room, Auckland.

Gregory Bennett

Utopia #1

2011

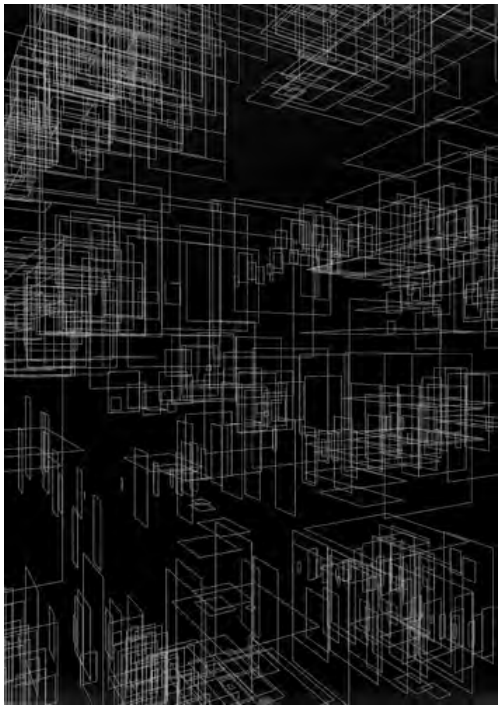

Image courtesy the artist and Anna Schwartz Gallery.

Stephen Bram

Untitled (two point perspective)

2007

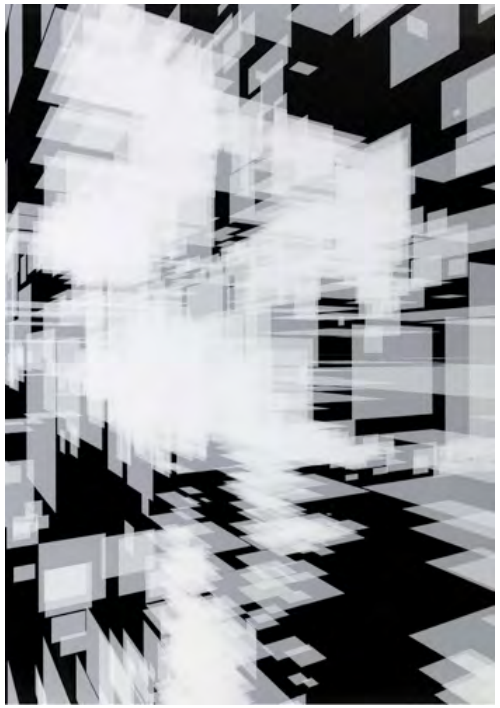

Image courtesy the artist and Anna Schwartz Gallery

Stephen Bram

Untitled (two point perspective)

2007

Image courtesy the artist and Two Rooms, Auckland.

Gregory Bennett

Utopia #2

2011

Image courtesy the artist and Mars Gallery

Stephen Haley

One second (oil barrels 1146)

2010

Image courtesy the artist and Mars Gallery

Stephen Haley

One Second (plastic bags 31688)

2010

Image courtesy the artist and Mars Gallery

Stephen Haley

Vanishing point

2008

Image courtesy the artist and Flinders Lane Gallery.

Jacob Leary

The Sorting Process

2012

Image courtesy the artist.

Gordon Monro

Difference Engine 4.02a and 4.02b

Image courtesy the artist and Anna Schwartz Gallery.

Daniel Crooks

Pan no.10 (neither here nor there)

2012

Image courtesy the artist.

Jiang Pengyi

Unregistered city no.7

Image courtesy the artist

Yang Yongliang

Snow city quanternity 3

2009

Image courtesy the artist.

Greg Neville

GoooOg

2012

Image courtesy the artist and Mars Gallery

Simon Finn

Pier Fracture

2011

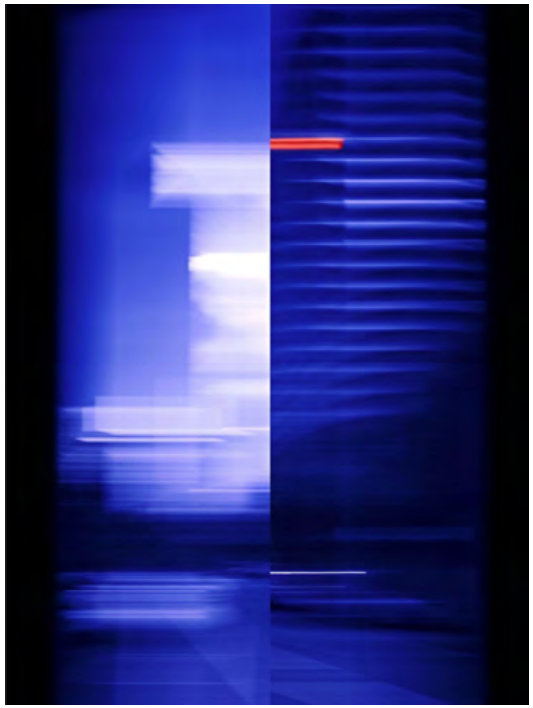

Image courtesy the artist.

Shannon McGrath

Fraction #3

2014

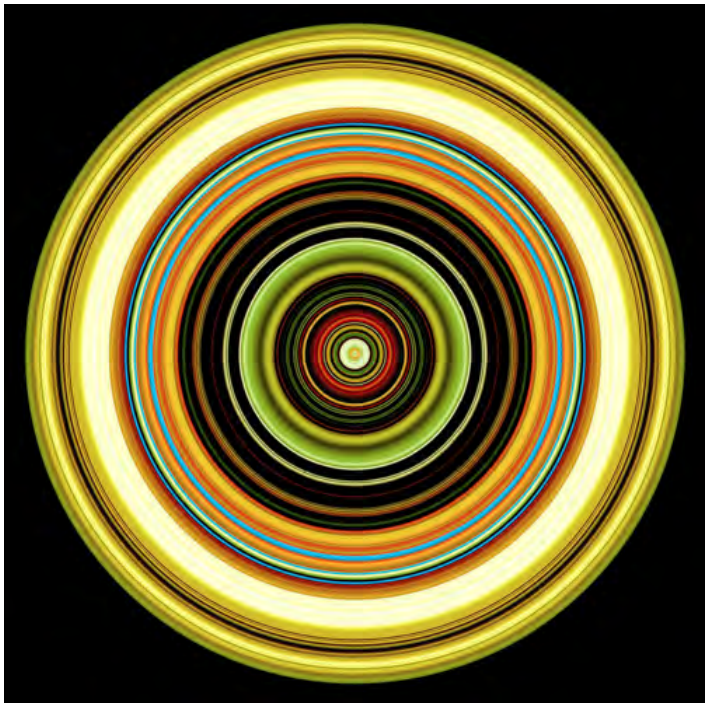

Image courtesy the artist and Langford 120.

Paul Snell

Pulse #201021

2012

Image courtesy the artist

Catherine Nelson

Monet's Garden

2010

Image courtesy the artist

Richard Blackwell

Image courtesy the artist and Mars Gallery.

Stephen Haley

Supermolet – belt
2011

Driveby
2011