

PERFECTION

PART EXPERIMENT / PART EXHIBITION

SCIENCE GALLERY MELBOURNE

Science Gallery Melbourne is a dynamic new gallery at The University of Melbourne that will engage young adults through the intersections of art and science. The gallery will open in 2020 as part of an exciting innovation precinct in Melbourne. At the heart of Science Gallery Melbourne lies a rich network of collaborators: artists, designers, performers, academics, scientists, filmmakers, tech wunderkinds and extraordinary colleagues located in Science Gallery nodes in Dublin, London, Bangalore, Venice and Detroit.

In the lead up to opening, Science Gallery Melbourne will host a diverse program of exhibitions, performances, events and workshops in pop-up locations on The University of Melbourne Campus and throughout Melbourne. **PERFECTION** is the second pop-up program, following **BLOOD** in 2017.

melbourne.sciencegallery.com

The University of Melbourne is a public-spirited institution that makes distinctive contributions to society in research, learning and teaching and engagement. It's consistently ranked among the leading universities in the world, placing it as number 1 in Australia and number 32 in the world (Times Higher Education World University Rankings 2018).

unimelb.edu.au

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Science Gallery Melbourne
The University of Melbourne

Image by:
Lucy McRae



The concept of perfection is both terrifying and magnificent, often simultaneously, with many lifetimes of scientific rigour devoted to its attainment.

This exhibition by Science Gallery Melbourne highlights the central role that the sciences, particularly mathematics and physics, play in humanity's impossible pursuit of perfection.

Prof. Karen Day
Dean Faculty of Science
The University of Melbourne

ESSAY

ROSE
HISCOCK

What kind of Oodle is that?"

**"Actually, she's not an Oodle."
I say and nearly add, sorry.**

Three voices chime "...oooh."

"What about yours?" I ask

"Schnoodle."

"Groodle."

"Double Doodle."

"Trumped." I reply,

"What's a Double Doodle?"

**"Frankly not great." says the owner,
"She's got the nervousness of a
poodle, sheds like a Labrador
and I'm still waiting for signs of
intelligence."**

DIRECTOR
SCIENCE GALLERY
MELBOURNE

I laugh and pull out my phone, I feel an intense and immediate need to Google Oodles. My phone lights up with a satisfying 1,330,000 web results for 'oodle breeds'. With more than 100 varieties the websites are categorised by letters in the alphabet. Only H,O, Q, U, V, X and Z are yet to be oodled. I know that's just a matter of time.

Thousands of years of selective dog breeding have given us so many pet choices that today we can all have our own 'perfect' dog breed. Genetic engineering is taking this a step further, with Barbara Streisand, among many others, now cloning her favourite pet to keep it immortal in the form of two more. Perhaps this gives a second meaning to the phrase 'a puppy is forever'.

The quest for the perfect dog, perfect companion and perfect life has fascinated humans for centuries. Just as we've tried to manufacture perfection over the years, we've also looked for a holding frame, a place in which perfection thrives. Published 500 years ago Thomas More's *Utopia*, creates the perfect world, and in so doing throws a critical lens on real life. In PERFECTION, we present Science Gallery Melbourne's version of Utopia, a slippery and subjective frame enabling others to inhabit.

DR RYAN JEFFERIES

What does it mean to be perfect?

Perfection is a bit perplexing. It sits at the intersection of the impartial, the personal and the unobtainable. It can be exact numbers, balanced symmetry and precise engineering. But it can also be the aesthetics of art, an obsession, a deception and a way of thinking. Yet despite the myriad of definitions, the ultimate non-existence of perfection seems a constant. We are therefore left questioning why are we striving for something that may not actually exist?

“One of the basic rules of the universe is that nothing is perfect. Perfection simply doesn’t exist...Without imperfection, neither you nor I would exist.”

– Stephen Hawking

PERFECTION emerged from a conversation about our utopian desire for a perfect future. A positive desire to change ourselves and our lives to be everything that we want them to be. And as our understanding of the world advances with each new generation, we become tantalisingly, or indeed, terrifyingly, closer to reaching a ‘theory of everything’, immortality and singularity. Utopian concepts for some of us, dystopian for others. By holding up a mirror to our own ideals, PERFECTION reflects ever-changing ideas of scientific precision, psychological perfectionism and perfect imperfection.

How far will we go in our quest for perfection?

Increasingly we are viewing our lives through a perfected digital lens. Flawless social media accounts flaunt perfectly photo-filtered lives to the world. **The Boost Project** by Ant Hamlyn and **Womanhours** by Tyler Payne explore these social

HEAD OF PROGRAMS SCIENCE GALLERY MELBOURNE

pressures of perfectionism. Is the perfect avatar an over-inflated ego of endless social media ‘likes’ or the bikini waxed and fake-tanned body spotlessly manicured for a selfie?

At the same time, the rise of AI and algorithms is making our lives easier as they make multiple daily decisions for us. Facial recognition technologies can now determine someone’s mental wellbeing, and more controversially, a person’s sexuality or political preference. But how perfect are these algorithms we seem so happily to trust? **Biometric Mirror** by artist Lucy McRae and human-computer interaction researchers Dr Niels Wouters and Nick Smith taps into our insecurities, by allowing our faces to be biometrically assessed and then stretched and modified to meet the ideals of a Hollywood plastic surgeon. And with news headlines announcing sex robots “*will be in hundreds of homes within a year*” and “*will make men, not women, obsolete*”, the idea of robots as sexual partners is a hot topic of conversation. As we walk the road ever closer to reaching the tipping point of singularity, will robots be our perfect companions of the future? **Harmony** by Matt McMullen, which is one of the world’s most advanced sex robots, certainly thinks so.

Yet if digital perfection is possible, why not the physical? Our bodies can now be surgically snipped and enhanced and our genes edited to transform ourselves into new improved versions of our former selves. ORLAN famously had numerous surgeries, as revealed in **Omniprésence** to attain the beauty portrayed in classical western artworks. But what if you want to change the colour of your eyes or skin? If legislation is ethically relaxed, then CRISPR-Cas9 technology will soon allow you to do so. This advanced form of genetic engineering is about to revolutionize medical treatments and has the potential to cosmetically change people’s appearances. **Genetics Gym** by Adam Peacock peels back the layers of our genetic code and consumer psychology, and presents a future where our physical traits constantly change

every few months. Jaden Hastings’ **The Demiurge** places these changes firmly into the hands of an AI, while also opening the Pandora’s box of biohacking. This is citizen science at its extreme. Our bodies modified, merged and microchipped in our own kitchens.

We are now entering a new utopian/dystopian future. From Ursula K. Le Guin’s *The Dispossessed* to Kim Stanley Robinson’s *Pacific Edge*, our visions of perfect new societies have been a constant desire. This is the realm of science fiction and creative ideals. A world of making things ‘better’. Yiyun Chen’s **Sick Better** opens our minds to a speculative perfect world for our aging population and Andy Gracie’s **Fish, Plant, Rack v.2** is a future ecotopia where technology helps balance ecological systems and maintains biodiversity. Our future can certainly be a positive one if we want it to be.

But what is the underlying reason we can transform our world into our own utopias? Driving this advancement is our insatiable pursuit of scientifically understanding the world we live in. Our First Nations peoples, so attuned and connected to nature, carefully observed the world’s astrological and biological cycles with a deep knowledge and understanding. This is strongly seen in the avian connections of **Corvid** by Wiradjuri sound artist Naretha Williams. Mathematical precision is the closest science gets to perfection and has been crucial for discovering the laws of physics that explain everything from bosons and fermions to supernovas. Numbers also define Maxwell’s equations that dictate the universe’s light waves, as explored in **Symmetries of Light** by Cristina Fiordimela, Freddy Paul Grunert and Fabrizio Tamburini and the underlying symmetry of Marcus Volz’s **Natalina Cafra** and **Lorenz Attractor**. These equations that so precisely describe the reoccurring patterns and symmetries of nature take us closer to a ‘theory of everything’, which Stephen Hawking, like so many others, continued to search for throughout his life.

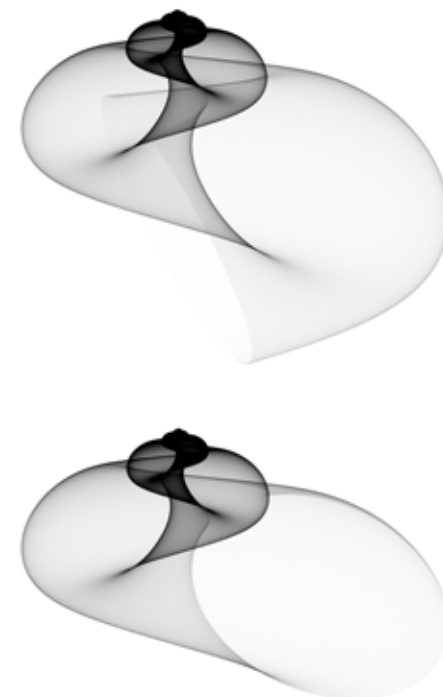
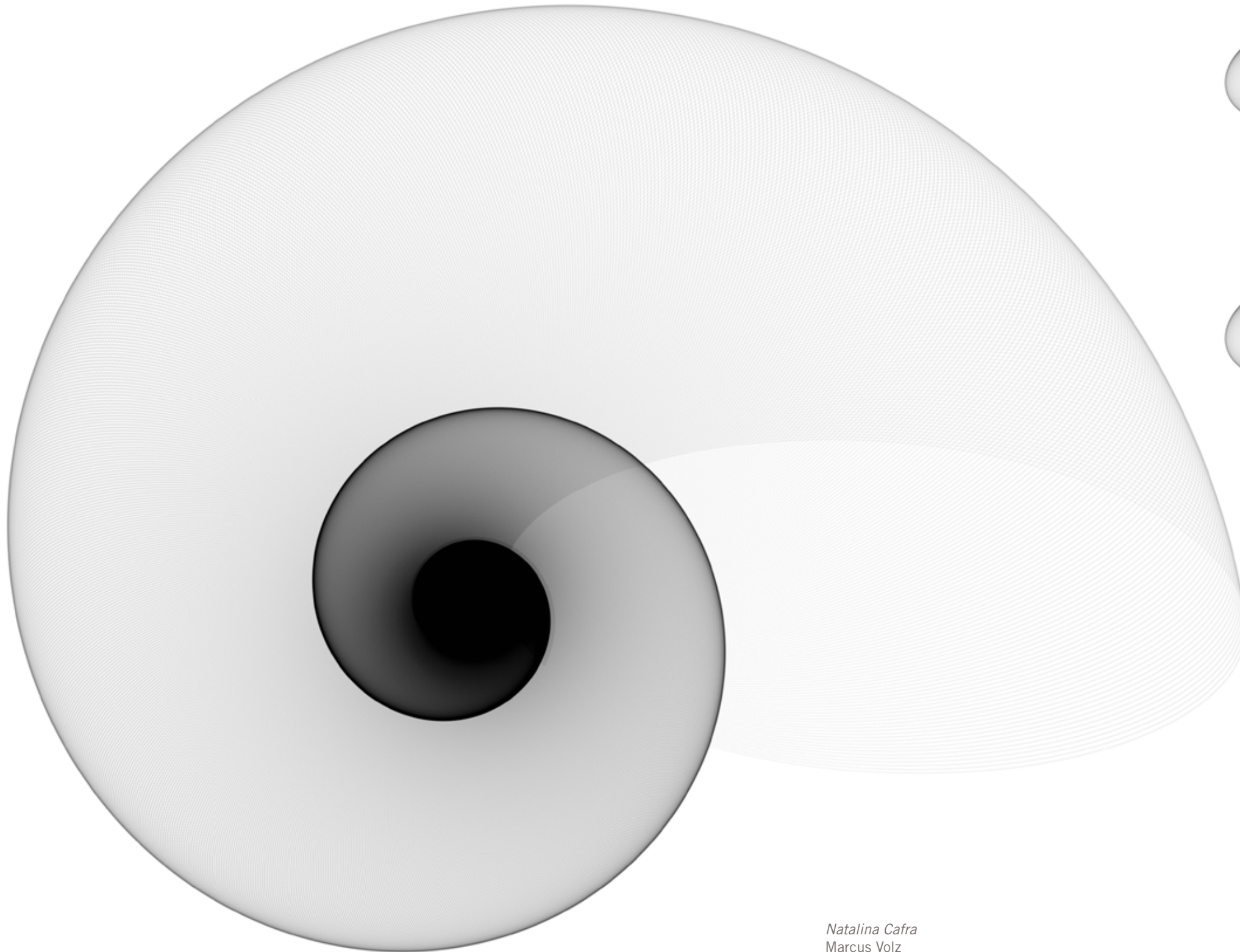
It was also Hawking who championed the importance of imperfection. This imperfection is the genetic diversity of biology so cleverly displayed by **Morphoteque #15** by Erwin Driessens & Maria Verstappen and our own ‘imperfections’ that are revealed as we compete with the digital music synthesizer of **Wave Machine** by Samantha and Michael Vilkins and the computer screen of **O** by XORXOR. Our different levels of skill make us unique. It is this uniqueness, our variations, that make us all perfectly imperfect rather than identical clones.

It is rather fitting that two hundred years since Mary Shelley wrote *Frankenstein* that Science Gallery Melbourne has chosen to explore the realms of PERFECTION for our second pop-up exhibition. Through Shelley’s imagination, Frankenstein’s monster is created through chemistry and alchemy, all the while raising questions about the scientific quest for perfection and our endeavour to perfectly understand and re-create everything.

“A human being in perfection ought always to preserve a calm and peaceful mind and never to allow passion or a transitory desire to disturb his tranquility. I do not think that the pursuit of knowledge is an exception to this rule.”

– Mary Shelley, *Frankenstein*

Like Mary Shelley’s ‘monster’, PERFECTION is an exhibition that is far from ‘perfect’. Rather it is a creative collision of scientific experimentation and artistic expression. This is an exhibition that holds up a mirror of self-reflection and allows us to see the benefits and challenges of the imperfect/perfect dichotomy. In doing so, one thing’s for sure, it will leave you questioning your own ideas of what ‘perfect’ means.



Natalina Cafra
Marcus Volz

“We need to think about humans making decisions with the help of AI, rather than one or the other taking over.”

PROF. KARIN VERSPOOR

SCHOOL OF COMPUTING
AND INFORMATION SYSTEMS,
THE UNIVERSITY OF MELBOURNE

Can algorithms and artificial intelligence be more ‘perfect’ than people?

Computers generally do well at tasks that are repetitive and involve keeping track of lots of individual bits of information. People get bored doing the same things over and over again, and tend to prefer to abstract over lots of information rather than track every detail. Computers don’t get distracted or tired and can track every detail if they have enough memory, and so they are indeed better at doing some things than people.

When it is claimed that algorithms are more ‘perfect’ than people, this really means that the algorithm is better at doing some tasks than *individual* humans, not better than all people put together. Just as there is the “wisdom of the crowd”, algorithms benefit from pooling across many examples to derive the patterns. Actually, these sorts of claims are almost always based on comparisons with humans; it is human-level performance that we are striving for. When we measure how good an algorithm is, the ‘right’ answer is always based on what a human would say. Humans are our ‘gold standard’ that we compare the algorithms with. This assumes that a majority of humans agree on a given answer.

Because artificial intelligence algorithms can find patterns in very complex data sets that are difficult for humans to see, there are certainly many decisions that can benefit from being supported with AI. I personally think that it is very exciting to see advancement in the sophistication and accuracy of algorithms on many tasks, and can see real advantages to using computers to sift through increasingly large data sets to find the important patterns. I do think it is a dream to have the ability to look deeply into this data, to help us make decisions with the confidence that we haven’t missed critical factors that should influence those decisions.

But we shouldn’t proceed blindly. Increasingly, we are aware of the potential for algorithms to introduce bias because they only see a fraction of the data that actually matters, or to reinforce inequities because they focus attention only on the things that they know how to recognise, or have seen before. We have to understand the limitations of these algorithms, and make sure that there are checks in place to mitigate those limitations. We need to develop strategies for flagging the decisions that are hard for the algorithms to make, where human judgement can be applied. Humans are better at dealing with context and nuance, and at recognising exceptions. We need to think about humans making decisions with the help of AI, rather than one or the other taking over.

We craft our perfect lives online. Is this the real you?

THE BOOST PROJECT

Do your 'likes' inflate or deflate you?



The Boost Project is an interactive, living installation exploring how social media can allow us to live within an alternate reality; one in which we can easily attain a heightened sense of belonging or a temporal state of appreciation. The inflating orb aims to emulate the acceptance and self-worth we can feel after receiving 'likes' on our posts or pictures online in a playful way. *The Boost Project* triggers a series of algorithms to search online for live interactions on its own social media pages. If no interactions are found, it begins to subtly deflate and fade into the background of our lives.

@BoostSGM
#THEBOOSTPROJECT

ANT HAMLYN

(UK)

Ant Hamlyn completed MA Fine Art at Chelsea College of Art in 2017. His works attempt to flirt between the live and the Live, the performer and the performed and the glamorized and the real. Ant has exhibited work at the V&A, Zabudowicz Collection, FACT (Foundation for Art and Creative Technology), QUAD, CCI Fabrika and in 2017 represented the UK at 18th Mediterranean and European Beinnale (BJCEM, Meditteranea18) in Tirana, Albania.

anthamlyn.co.uk



BIOMETRIC MIRROR

Are you old?
Are you young?



LUCY MCRAE, DR NIELS WOUTERS & NICK SMITH

(AUSTRALIA)

Are you weird?
Are you fun?

Does your face
tell a story?
What if AI gets
it wrong?

Lucy McRae is a sci-fi artist, film director, TED Fellow and body architect, placing the human body in complex, futuristic scenarios that confound the boundaries between the natural and artificial. Lucy's award-winning science fiction artworks have been developed in collaboration with NASA, MIT and Ars Electronica and exhibited at the London Science Museum, Centre Pompidou and the Venice Biennale.

Dr Niels Wouters and Nick Smith are human-computer interaction researchers at the Microsoft Research Centre for Natural User Interfaces (SocialNUI) at The University of Melbourne. SocialNUI is a place of collaborative research for creating and understanding innovative natural user interfaces that facilitate human communication, collaboration and social interaction.

socialnui.unimelb.edu.au
lucymcrae.net

Biometric Mirror is a research-based sci-fi installation that questions the accuracy and assumptions of facial recognition algorithms. Enter a futuristic beauty salon and have an AI scan and display your biometric data. It will then reveal a mathematically 'perfect' version of your face, based on the ideals of the Marquardt mask, developed by a Hollywood plastic surgeon. But whose version of perfection is it?

Go hack yourself!

THE DEMIURGE



JADEN HASTINGS

(AUSTRALIA)

Jaden Hastings' work centres on the intersection and interplay of art and science. An alumna of New York University, Harvard University, and the University of Oxford with advanced degrees in both Biology and Bioinformatics, Jaden is currently a PhD candidate with The University of Melbourne. Jaden has been an artist-in-residence for the Story of Light Festival in Goa, the Khoj Workshops in Delhi, SymbioticA, the Lumen Residency in Atina, Italy, and Austellungsraum Klingental in Basel.

jadenhastings.com

How might a machine design future humans?

The Demiurge is an AI installation that suggests ways in which the artist's genome could be perfected. This is one of the first applications of machine learning-directed human evolution. As the future of mutual human and machine (carbon and silicon-based life) survival is entangled, what ideals and aspirations shall we hold fast to as we co-evolve?



A blind fish with a robot slave.

Is this how we create ecological balance?

EXHIBITION

ANDY GRACIE

(UK / SPAIN)

Andy Gracie's artistic practice is characterised by an in depth engagement with process, scientific methodologies and the nature of experiment. His work commonly features mechanical apparatus that perform real time experiments, including video, sound and performative elements. He has completed residences at Aalto University, Helsinki and COMAFOSCA in Barcelona and was one of the founders of the internationally acclaimed DIY science collective Hackteria.

hostprods.net

FISH, PLANT, RACK V.2



Fish, Plant, Rack v.2 allows the navigational electrical discharges of the virtually blind elephant fish *Gnathonemus petersii* to instruct the actions of a robot whose task is to monitor the development of plants in a hydroponic system. Using the AI system DharmAi designed by Brian Lee Dae Yung, the robot listens to the audible incoming stream of pulses from the fish and interprets emerging patterns and densities of clicks as parameters for actions. Three types of intelligence creating a perfect harmony.

Design your own partner?

Is this your future relationship?



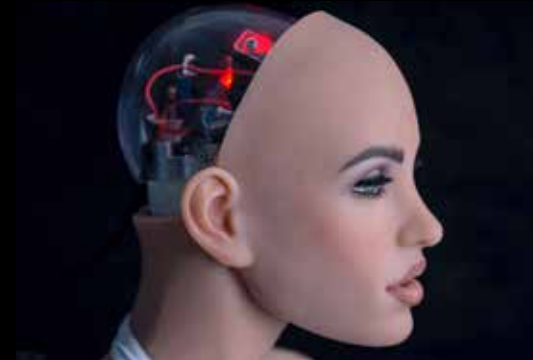
MATT MCMULLEN

(USA)

Matt McMullen is the artist and designer behind Realbotix. He started Abyss Creations, the manufacturer of Realdoll, out of his garage in 1997. Matt's sex dolls have appeared on more than 20 television shows and co-starred in 10 films.

realbotix.com

HARMONY



Harmony is one of the world's most advanced robotic companions. Complete with facial expressions and movements, *Harmony* communicates via an AI system that includes multiple personalities and a face that will never age. As science fiction becomes reality, will more people develop intimate relationships with robots? And what will be the social consequence of such companionships? Ask Harmony what she thinks.

FORMATION

V

What does it take to reverse the dystopian, hypnotic rhythm of war?

Made using an Afghanistan-based war simulator developed with the US military, *Formation V* explores the aesthetics and dynamics of military movement. Two opposing forces of US soldiers and Taliban combatants follow invisible way-points side-by-side. Oblivious to each other's presence thanks to a hacked game setting, the usual violence of this relationship is transformed into a poetic rhythm that repeats and amplifies the avatar's movement.

BADEN PAILTHORPE

(AUSTRALIA)

Baden Pailthorpe's practice is shaped by Internet culture. He is currently a Postdoctoral Fellow at iCinema Research Centre at the University of New South Wales. He holds a PhD from the University of New South Wales, an MFA from l'Université Paris VIII, an MA from COFA, UNSW and a BA from the University of Sydney. Exhibitions include GAME ART/VIDEO, 21st Triennale di Milano, Milan (2016); Students of War, Hors Pistes, Centre Pompidou, Paris (2014); Cadence, and Rencontres Internationales, Palais de Tokyo, Paris (2012).

badenpailthorpe.com



“A face that smiles,
irrespective of its
anatomical perfection,
brings joy to many”

MR TERRY WU

PLASTIC SURGEON

Can surgical enhancement achieve a ‘perfect’ appearance?

Despite Margaret Wolfe Hungerford’s truism “Beauty is in the eye of the beholder”, the features that make an attractive face are proven by many researchers to be universally programmed into the human consciousness. Symmetry, harmony and balance are hallmarks of a beautiful face and youthful plump skin with smooth texture is also a significant pre-requisite. Phi, the Golden Ratio of 1:1.618, is often noted in analyses of beauty, both organic and inorganic. Also called the Divine Proportion, it is said to be the dominant proportion in attractive faces of ALL ethnicities. Dr Stephen Marquardt, a surgeon based in California, who wrote extensively on facial beauty and devised the Marquardt Mask which attempts to mathematically quantify the ‘perfect’ face, declared that the image of beauty is, in fact, the image of ‘Humanness’. Our ability to very quickly assess the aesthetic qualities upon our first encounter with a potential mate represents a genetic expression or impulse to seek the best possible mate for the propagation of our genome. Humans and animals alike seek the most healthy, physically robust, youthful and seemingly ‘perfect’ mate for bonding, protection and survival. ‘Attractiveness’ is our visible clue to the invisible DNA that dictates anatomy. But perhaps the most important aspect of an ‘attractive’ face is the reflection of an inner beauty that is expressed best by smiles. A face that smiles, irrespective of its anatomical perfection, brings joy to many.

Perfection in appearance is a nebulous concept and the drive to pursue this unrealistic goal can, in fact, be a symptom of a psychiatric condition called Body Dysmorphic Disorder. Despite that, surgical and non-surgical aesthetic procedures, when expertly formulated and performed, can materialise reasonable expectations of patients who wish to change parts of their appearance. An example can be an aesthetic and functional rhinoplasty for a patient who desires to correct nose asymmetry. In 2017, 17.5 million aesthetic procedures were performed in USA and out of that total about 15.7 million procedures were minimally invasive ones such as injections of muscle relaxants or soft tissue fillers. The advent of these safe and effective office procedures has spearheaded the significant increase in the number of people who undergo aesthetic procedures. The more liberal attitude towards cosmetic procedures and the media’s relentless focus on beauty, coupled with the prevalent culture of ‘selfies’, have also driven this trend that increases with each successive year.

WOMANHOURS

Waxing, tanning, bleaching, plucking, retouching, spraying, shaving, painting, scrubbing, smoothing.

Repeat.



TYLER PAYNE

(AUSTRALIA)

Tyler Payne focuses on the genre of self-portraiture in photography and video to investigate the relationship of women's embodiment to the lens used in gendered advertising. Her practice concentrates on a study of the recent popularization of a range of female cosmetic rituals. Tyler is a current PhD candidate at RMIT University.

tylerpayne.com.au

Womanhours investigates women's body-correcting practices – Brazilian waxing and fake tanning – asking how these practices have contributed to, and transformed, the social construction of women's gender. Are such 'improvements' aiming for impossible perfectionism? And what's the psychology behind our desire for a flawless selfie?



OMNIPRÉSENCE

Nip, tuck, suck, fill, inject, pull.



ORLAN

(FRANCE)

ORLAN is a French performance artist who works in the mediums of sculpture, photography and film, and is best known for her work with plastic surgery in the early to mid-1990s. Her performance work often uses scientific and medical techniques like surgery and biogenetics. ORLAN's artwork *Harlequin's Coat* (2007) was a result of her collaboration with the SymbioticA laboratory in Australia.

orlan.eu

Can you watch?



ORLAN's seventh medical performance in a series of plastic surgery operations in which the artist altered her appearance to reflect the ideals of western art and cultural pressures of beauty. ORLAN underwent surgeries that included forehead changes to reflect Leonardo Da Vinci's Mona Lisa's prominent brow, a prosthetic chin to echo Sandro Botticelli's Venus, retouches to the eyelids to suggest a Fontainebleau Diana, and plumped lips to imitate Moreau's Europa.

SYMBIOTIC ONES



JANE SVERDRUPSEN

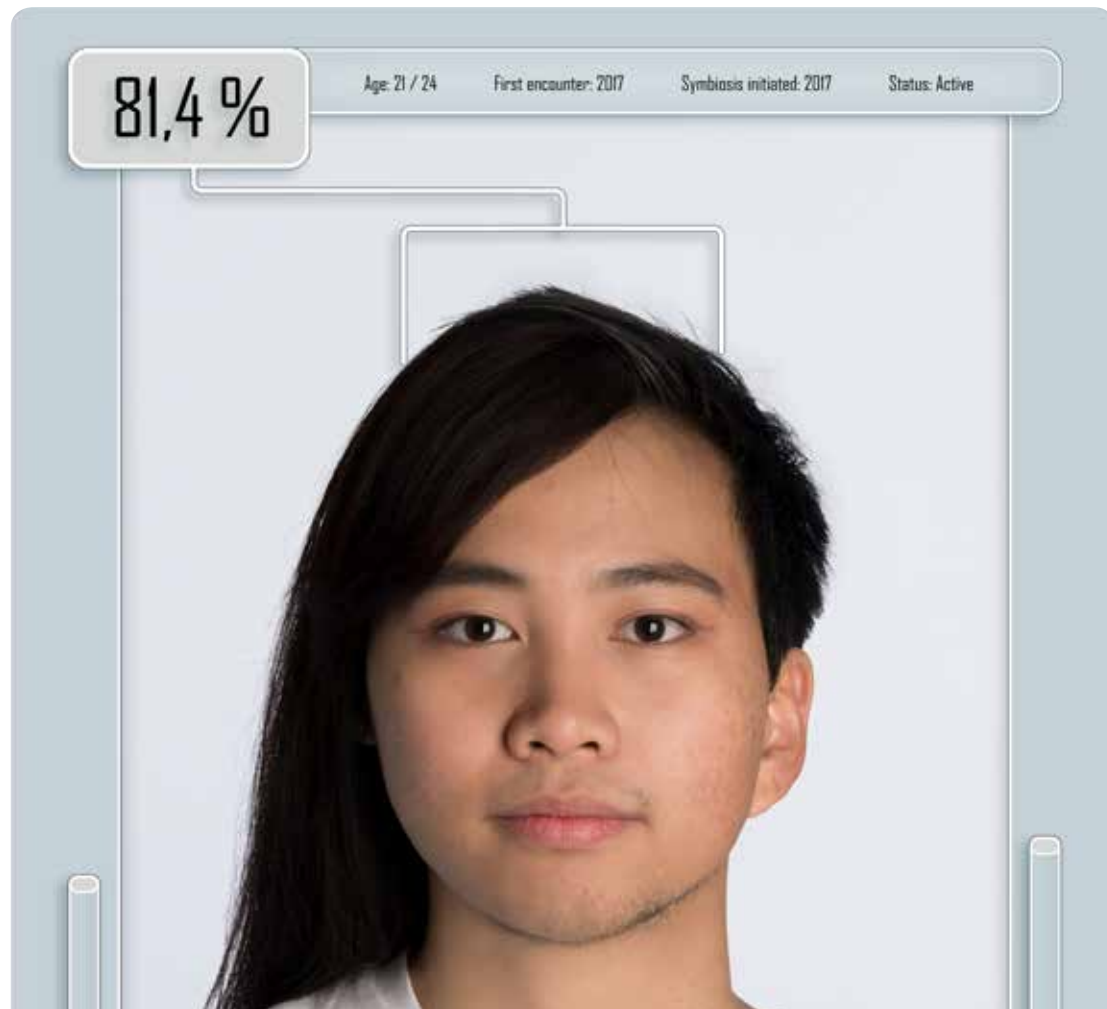
(NORWAY)

Jane Sverdrupsen received an MFA from Bergen Academy of Art and Design. Jane's work is inspired by scientific methods and ways of dissemination attributed to the natural sciences, and incorporates elements of this into her artistic approaches. Jane has exhibited in Norway, England, Germany, USA, Iceland and Portugal. She works at the Faculty of Fine Art, Music and Design (KMD) at the University of Bergen.

janesverdrupsen.com

There are almost 200 million Google search results for celebrity couples that look alike and dress alike.

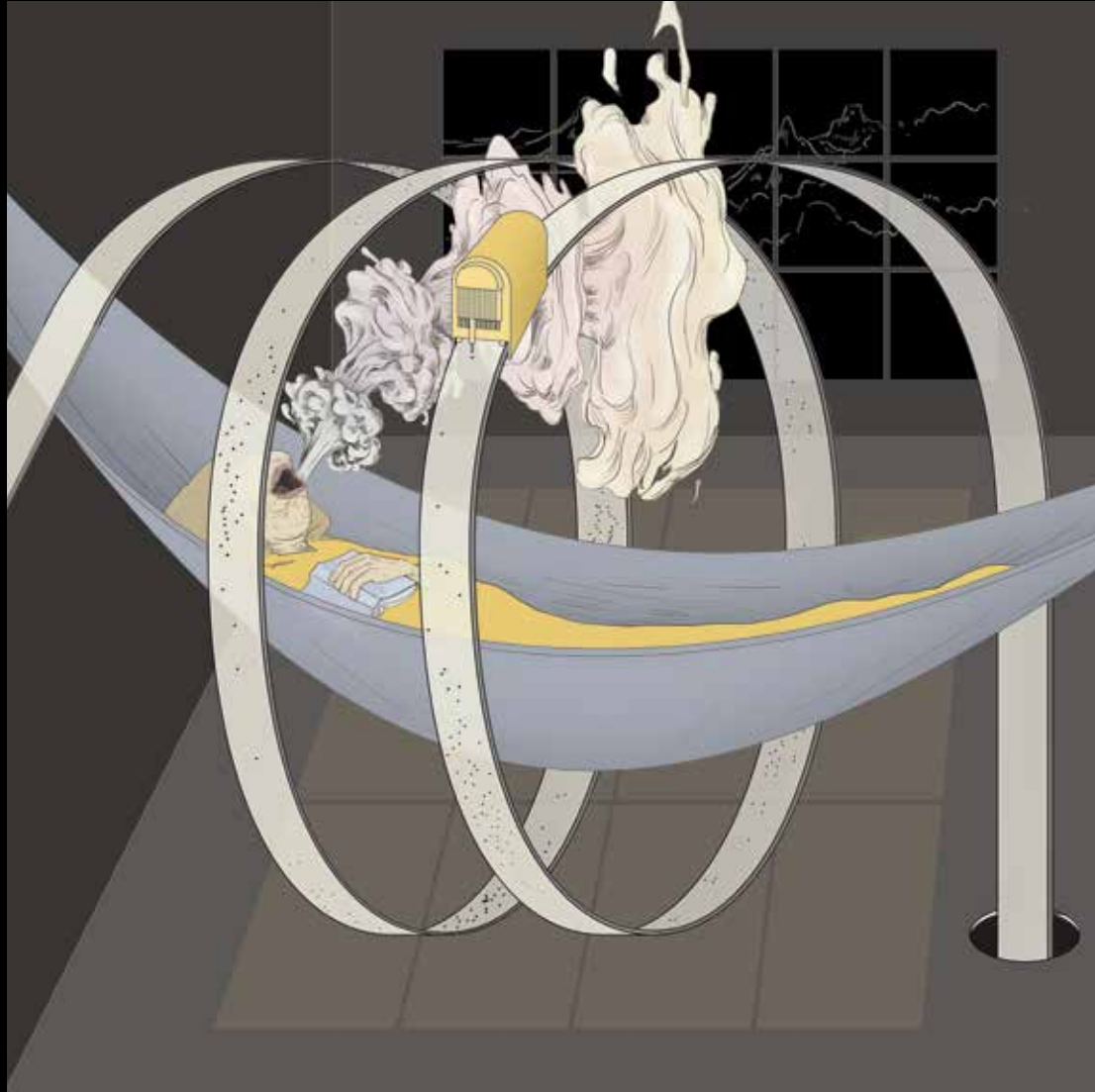
Why is it that couples start to look similar?
Are they a perfect match?



Symbiotic Ones explores the notion that many couples look similar to one another and draws upon research that suggests couples who live together for a long period of time develop similar facial features by virtue of repeated empathic mimicry. Twelve couples individually answered 28 questions where they rated their perceived similarity to each other in various aspects of their relationship. Their total score determines the merging of the photographed faces.



Imagine a utopia for the elderly.



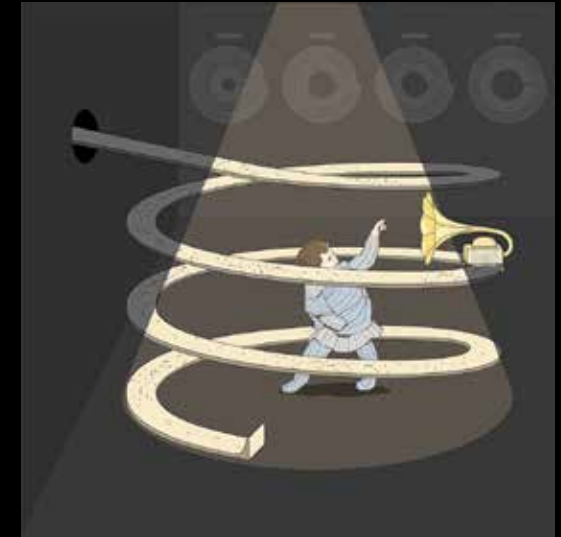
YIYUN CHEN

(CHINA)

Yiyun Chen graduated from MA Design Interactions at Royal College of Art in London. Her current interests focus on the intersections between art, psychology and medicine, and her artworks explore ideologies associated with human disease and wellness. *Sick Better* was nominated for The Helen Hamlyn Design Awards.

yiyun-chen.com

SICK BETTER

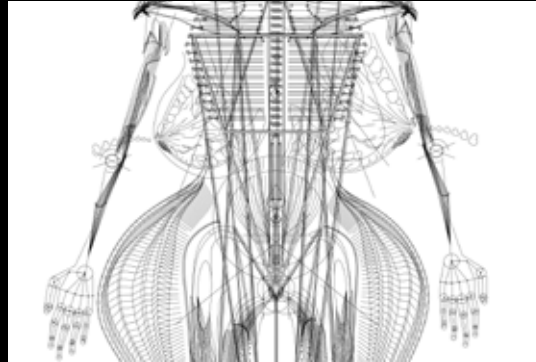


**Where illnesses
have benefits,
and patients
have power.**

Sick Better presents a fictional home for the elderly through a series of paintings, each frame represents a room within this home, to tell ways to 'use' different symptoms. By making chronic symptoms 'useful', this project advocates a neutral attitude towards 'unwellness' in an aging society.

Would you change your DNA and alter your appearance?

GENETICS
GYM



Who's afraid of the future?

With continued genetic technology development such as CRISPR-Cas9 and epigenetics, we can design much of our bodies and cognitive dispositions. *Genetics Gym* imagines a scenario in which these ethical boundaries become grey-areas in context of commercial pharmaceutical's affecting ethics, asking how and why we might change ourselves if we had the ability to do so? Is government ethical legislation currently holding us back?

ADAM PEACOCK

(UK)

Adam Peacock is a post-disciplinary artist, designer and consultant specialising in exploring the twenty-first century technology integrated human. Adam is a Lecturer of Design Strategy and Future Related Design at the London College of Fashion. He was recently awarded the 2016 Design Residency of London College of Fashion, the 2015 Design Residency at the Visible Futures Lab at the School of Visual Arts in NYC.

adampeacock.co.uk



MORPHOTEQUE

#15

Why won't you eat me?



Is a carrot always straight?
And a capsicum always smooth?

While the natural process of evolution engenders multiformity and diversity to ensure species remain strong and adaptive, crops that are cultivated for large-scale food production have been selectively bred to produce increasingly large and 'regular-shaped' foods. *Morphoteque #15* reflects the human urge for standardisation by deliberately conserving the rejected products and highlights the natural diversity within a species.

DRIESSENS & VERSTAPPEN

(THE NETHERLANDS)

Driessens & Verstappen jointly develop a multifaceted oeuvre of software, machines and objects. Driessens & Verstappen have exhibited at a.o. Stedelijk Museum Amsterdam, Museum Boijmans van Beuningen Rotterdam, Neue Pinakothek München, Science Gallery Dublin, Eyebeam New York and Centre Pompidou, Paris. Their work was awarded first prize at VIDA in Spain in 2002 and the 2013 Dutch Art+Technology Award.

notnot.home.xs4all.nl



PATRICIA PICCININI

(AUSTRALIA)

Patricia Piccinini is a Sierra Leone-born Australian artist and alumni from the Victorian College of the Arts. Her artworks include hyperrealistic sculptures constructed from silicone, fiberglass and human hair that often explore the moral and ethical challenges set by advances in biotechnology and genetic manipulation. Patricia's artwork has been included in major international exhibitions including CBBB Rio De Janiero, Dark Mofo, Hobart and Leeahn Gallery, Seoul.

patriciapiccinini.net

Graham was commissioned by the Transport Accident Commission (TAC) to promote road safety.

meetgraham.com.au

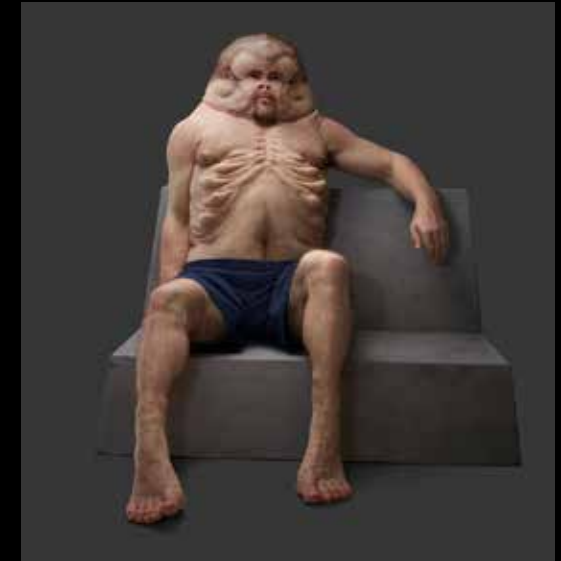
GRAHAM

You are not invincible.



You are vulnerable.

Perfectly designed to withstand the impact force of a low speed crash (30km/h), *Graham* has an enlarged skull filled with extra cerebrospinal fluid and ligaments to protect the brain, while the neck – one of the most vulnerable body parts in a collision – has been removed entirely. Created in collaboration with Royal Melbourne Hospital trauma surgeon Christian Kenfield and Monash University Accident Research Centre road safety engineer Dr David Logan, *Graham* is a sober reminder of just how vulnerable our bodies really are.



“For over a century, idealised or ‘perfect’ performances have been frozen in time”

DR DAVID IRVING

MELBOURNE
CONSERVATORIUM OF MUSIC,
THE UNIVERSITY OF
MELBOURNE

Is there such a thing as perfection in art? Does perfectionism benefit or hinder artistic expression and creativity?

Subjective opinions on art, from the perspective of admirers, might locate ‘perfection’ in works created by artists who are themselves obsessive in their perfectionism. However, these same artists might rail against lofty praise given to them by their devotees and list their many self-criticisms. Part of this fear is the lack of control an artist might have over dissemination, once a picture is painted, or work of music recorded. Before the age of mechanical reproduction, works of art were considered unique, and one of a kind. In his famous essay of 1936, *The Work of Art in the Age of Mechanical Reproduction*, philosopher Walter Benjamin asserted that “even the most perfect reproduction of a work of art is lacking in one element: its presence in time and space, its unique existence at the place where it happens to be.” Yet for many centuries now, a work of art that has been praised might be reproduced countless times, in many forms of media. The rise of printing in Europe in the fifteenth century, assembly-line factories for the production of instruments in the late eighteenth century, and

recording in the long twentieth century, have all contributed to the standardisation of idealised forms of art, with the widespread consequence of conformity in the rise of artistic industries, many seeking ‘perfection’. A great deal of scientific research has gone into determining the ideal resources and techniques to achieve these ideal standards, considered by some to be ‘perfection’. But they are only ever one demonstration of unlimited choices for expression.

Edison’s phonograph of 1877, the first reliable means of recording and reproducing sound, allowed for humanity’s most ephemeral artform – music – to be preserved, divorced from its sonic source, and transmitted around the world, with immense ramifications: the creation of new practices of listening and new cultures of audience expectation. This phenomenon of recording ushered in new standards of perceived ‘perfection’ in music, although scientists aimed (and still aim) to ‘perfect’ the equipment and technologies themselves. For over a century, idealised or ‘perfect’ performances have been frozen in time, with the consequence that live music is often expected to live up to heavily edited standards, from the viewpoints of performers, audiences, and critics alike.

WAVE MACHINE

Human vs Synthesizer Voice vs Machine



SAMANTHA VILKINS & MICHAEL VILKINS

(AUSTRALIA)

Samantha Vilkins is a PhD candidate in Science Communication and Communications and Engagement Officer at the Australian National Centre for the Public Awareness of Science at The Australian National University in Canberra.

Michael Vilkins is an author, producer, and performer from the Queensland Conservatorium. He's performed his children's picture book ("THE BEE'S SNEEZE") at schools around Australia.

The ultimate
battle royale.

Who does
it better?

Wave Machine explores the idea of a 'perfect sound'. What do we consider to be perfect, and how do we create it? Is an electronic musical note more perfect than its analogue counterpart? Be part of a live, visual juxtaposition of synthetic sound and the familiar human voice amongst a wall of oscilloscopes.

Is uniting two people's senses superior to an individual's?

DIFFABILITY

Will you collaborate to win the game?

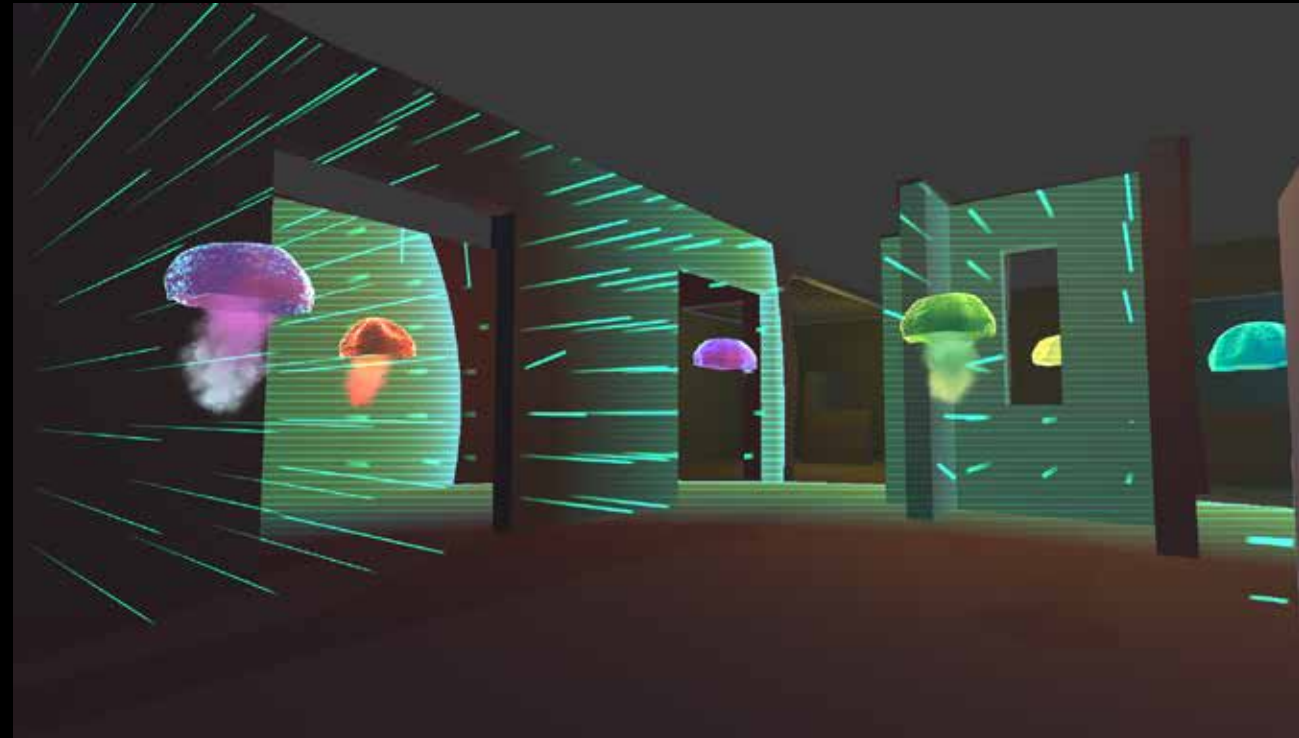
A weakness in one area can be compensated for, by developing a 'superpower' in another. One such example is the use of echolocation by people who are blind - attuning their attention to the echoes bouncing off surrounding surfaces to navigate through the world. In this virtual reality work, two virtually co-located participants will engage in a cooperative adventure in a simple environment, using their unique abilities to solve the mystery of their surroundings.

MATTHEW BUTLER & LEONA HOLLOWAY

(AUSTRALIA)

Matthew Butler and Leona Holloway are researchers at the SensiLab research laboratory at Monash University. Their research focuses the use of new low-cost technologies such as 3D printing and electronics to improve the provision of accessible graphical information.

sensilab.monash.edu



ARK OF IMPERFECTION

**Get on the ark
and leave your
imperfections
behind!**

**Can you ever
recover what
is lost?**

**Sounds tempting?
But what if your
value is in your
imperfections?**

The Ark of Imperfection represents a large time capsule of what we consider imperfect about ourselves and our lives. In contributing to the Ark you are invited to reflect upon the value of your imperfections and to preserve these should a future, perfect society call upon its scientists to recover what was 'lost'.

MAURIZIO TOSCANO

(AUSTRALIA)

Maurizio Toscano's recent research as a lecturer in the Melbourne Graduate School of Education concerns the intersection between art, science and philosophy, particularly as it pertains to practices in science education and communication. His philosophical work deals with the metaphysics of science and its connection to aesthetics.



“Breaking perfect symmetries allowed the formation of atoms and the complexity of the Universe we live in”

PROF.
ELISABETTA
BARBERIO

SCHOOL OF PHYSICS,
THE UNIVERSITY OF
MELBOURNE

Does perfection exist in our Universe?

Our Universe is full of imperfection, from fundamental particles, like the electron, to galaxies. Life itself is only possible due to imperfections. In fact, life prefers molecules with specific asymmetric spatial configurations: the molecule that constitute all protein in living organisms are identified as ‘left-handed,’ and the sugars that form the DNA as ‘right-handed.’

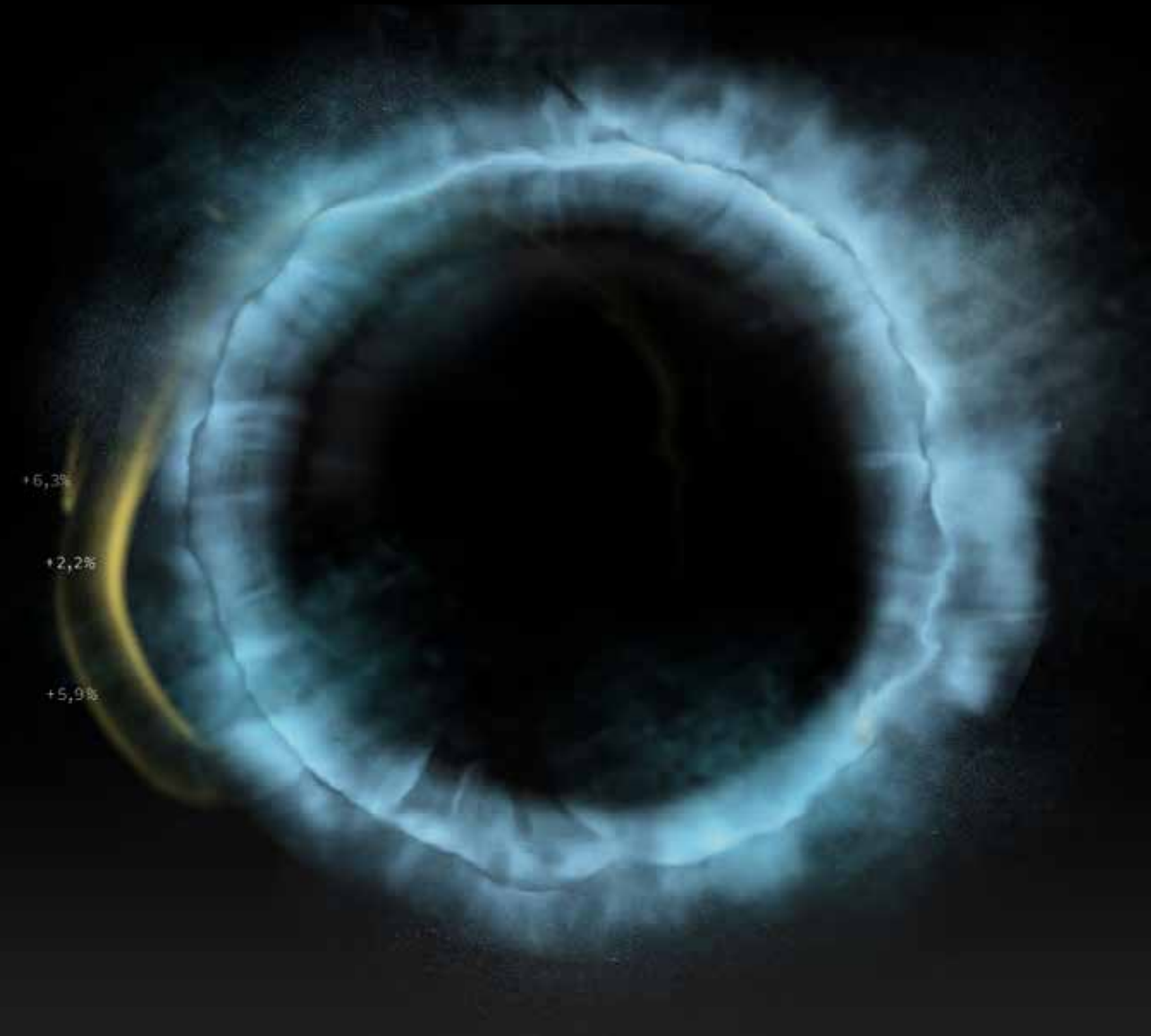
The perfect symmetries that we use to depict the Universe at the time of the Big Bang, do not describe the Universe we live in. The Higgs boson literally took that formless perfection and froze structure into it destroying the sameness. Breaking perfect symmetries allowed the formation of atoms and the complexity of the Universe we live in.

Can maths be considered perfect?

“A physical law must possess mathematical beauty... the mathematician plays a game in which he himself invents the rule while the physicist plays a game in which the rules are provided by Nature, but as time goes on it becomes increasingly evident that the rules which the mathematician finds interesting are the same as those which Nature has chosen.”

– Paul Dirac

Mathematics is a product of our minds, it obeys the rules of logic, it is the perfection of pure logic. Physics describes the phenomena in our Universe using the language of mathematics. For physics perfection is the simplicity, symmetry, and elegance of a mathematical equation that describe complex phenomena. We can use simple and elegant mathematical equations to describe the fundamental laws of nature, and to predict the unforeseen. There is a very simple and elegant equation written by Paul Dirac (Nobel prize in Physics 1933) that unifies the theory of special relativity and quantum physics. This equation was written to describe the electron, and remarkably predicted the existence of antimatter.



XORXOR

(HUNGARY)



Go on, try it.

XORXOR was founded in 2013 in Budapest, Hungary with the aim to bring new visual and technological possibilities to the cultural scene. The studio follows a research-based practice to explore new ways to solve complex problems. Their clients range from museums through dance companies to film and theatre productions in Hungary and in the international scene. *O* was made by Gáspár Hajdu, Tamás Lakos, Gábor Papp and Sámuel Setényi.

xorxor.hu

Is it impossible to draw a perfect circle?

Throughout history, the symbol of the circle has been associated with perfection in mathematics, art, and design. The aim of *O* is to make the circle perfect, but the notion of perfection is complicated by constant change of the circle by itself and by the input of others. This creates a complex experience of perfection: one that is difficult to reach and depends on the group to not disrupt the common effort, and once reached, may be lost again.

MARCUS VOLZ

(AUSTRALIA)

Marcus Volz is a research fellow at The University of Melbourne, where he is studying geometric networks, optimisation and computational geometry. He has a PhD in engineering / applied mathematics, and has worked previously as a consultant developing simulation models and animations of industrial processes.

marcusvolz.com

NATALINA CAFRA & LORENZ ATTRACTOR

Can maths
be art?

Can art
be maths?

These elaborate 3D sculptural forms explore complex mathematical equations. *Lorenz Attractor* is a visualisation of a simplified model for atmospheric weather patterns by Edward Lorenz. *Natalina Cafra* represents equations developed by M.B Cortie that define fractal diversity in mollusc shells.



SYMMETRIES OF LIGHT

CRISTINA FIORDIMELA, FREDDY PAUL GRUNERT FABRIZIO TAMBURINI & UWE WÖSSNER

(GERMANY)

**Does light have
a consciousness?**

**How much of
the universe
can you see and
connect with?**

We cannot perceive electric and magnetic fields directly except through visible light. Using the precision of Maxwell's equations and 85,600 numerical simulations of the patterns of electromagnetics, *Symmetries of Light* allows us to visualise a universe created through our own manipulation of space and time.

Cristina Fiordimela is Visiting Professor of Interior and Exhibition Design at the Architecture University of the Politecnico di Milano. Cristina was awarded a PhD in Interior Architecture and Exhibition Design in 2008 at the Politecnico di Milano.

Freddy Paul Grunert is an artist, theorist and associate curator at the ZKM, Centre for Art and Media, a research centre and museum that specialises in the study of information technology and its social and cultural repercussions.

Fabrizio Tamburini researches electromagnetic orbital angular momentum (OAM) and was awarded the 2018 Angstrom Lecture. His scientific and artistic contributions deal with topics such as OAM telecommunications, Super Resolution technology, the OAM vortex strengths of rotating black holes and Axion as a representative of dark matter.

Uwe Wössner has PhD in Mechanical Engineering from the University of Stuttgart and developed the virtual reality component of the extended version of *Symmetries of Light*. He is head of the visualization department at the High Performance Computing Center Stuttgart (HLRS).

DROP

Why is water so essential to sustain life?

Water is one of the few substances we all know the chemical structure for – H₂O. And it is this structure that makes it a rule-bender when it comes to physical properties. *Drop* requires water's unique balance of qualities so that it may continue working: it needs water's ability to be moved incrementally, its fluidity, its lack of compressibility, and its weight.

LAURA WOODWARD

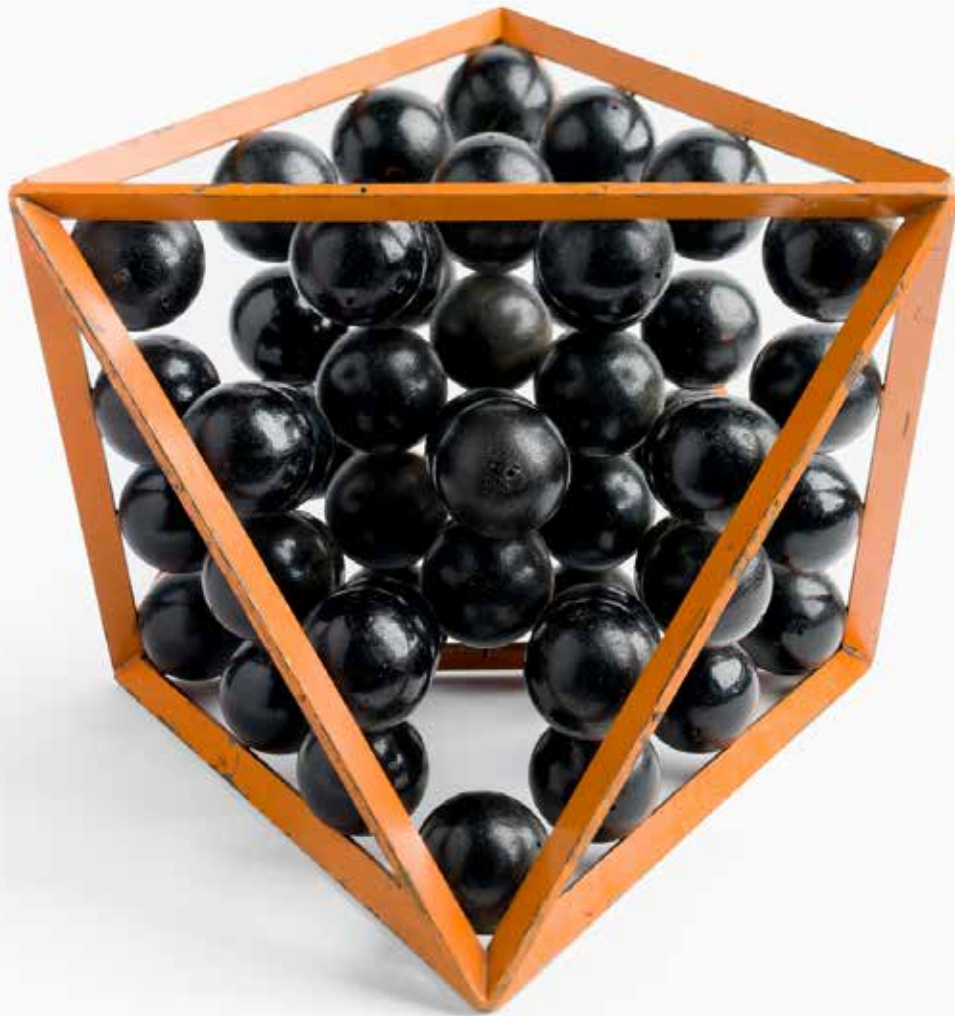
(AUSTRALIA)

Laura Woodward has been exhibiting sculptural, kinetic installations for ten years. Her current artistic trajectory involves the creation of looped systems embodied in these sculptural installations. She has received multiple Australia Council Emerging Artist New Work Grants, won the Agendo Prize for Emerging Artists in 2009, and exhibited as a finalist in the International Aesthetica Art Prize in York, UK, in 2018.

laurawoodward.com.au



CHEMICAL STRUCTURE MODELS



F.A. SINGLETON EARTH SCIENCES COLLECTION

(AUSTRALIA)

Named after Australian paleontologist Frederick A. Singleton, the F.A. Singleton Earth Science Collection at The University of Melbourne is a diverse collection of geological and fossil samples, along with teaching and academic archives. The collection includes more than 18,000 geological specimens, including Victorian gems, gold crystals and alluvial gold from the Victorian gold fields.

earthsci.unimelb.edu.au

Diamonds are forever. Diamonds are a girl's best friend. Diamond in the rough. Shine bright like a diamond.

What makes a diamond so special?



These vintage models were hand-crafted to represent diamond and graphite, both of which are composed entirely of carbon atoms. In diamonds, the atoms are closely packed together to form a crystal, compared to graphite where the atoms are in layers that can slide across one another. It is the imperfections in diamonds that make them shine.

CORVID

NARETHA
WILLIAMS

(AUSTRALIA)

Naretha Williams is a First Nations experimental and interdisciplinary artist with a primary focus on music and audio arts practice. A Wiradjuri woman of mixed lineage, born and based in Melbourne on the Sovereign Land of the Kulin Nation, Victoria, Australia.

When does our perception of perfection become adrift from reality?

From our divine mathematical beginnings and complex ancestral grids, we are the keepers of a perfect blueprint - ourselves. Corvid birds (crows and ravens) are the ancestral totemic lineage of the artist and provide an archetype and language for the artist's mixed lineage and responsibilities. This sculptural sound installation analyses DNA sequences to create mathematical music, and explores the transmission of ancestral information through nature.

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