

E X P E R I M E N T A L
T H I N K I N G /
D E S I G N
P R A C T I C E S

FRONT COVER

Bill Gaver, Mike Michael, Tobie Kerridge, Liliana Ovale, Matthew Plummer-Fernandez, Alex Wilkie and Jennifer Gabrys *ECDC Energy Babble* 2014.



EXPERIMENTAL THINKING / DESIGN PRACTICES

18 September–7 November 2015

Griffith University Art Gallery
South Bank Campus
226 Grey Street
South Bank QLD 4101
Brisbane, Australia

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FINDING HOLES IN CATEGORICAL FENCES

KATHERINE MOLINE

Experimental Thinking/Design Practices at Griffith University Art Gallery, Queensland College of Art (QCA), explores several themes integral to how artists and designers develop research. It is the third in a series of exhibitions, the others of which included *Feral Experimental: New Design Thinking* at the University of New South Wales (UNSW) Galleries from July to August 2014, and *Experimental Practice: Provocations In and Out of Design* at Royal Melbourne Institute of Technology (RMIT) University Design Hub in May 2015. The exhibitions aim to provoke debate about the purpose of design in a format that is modified for each location. These iterations of the exhibition include practitioners from the communities in which they were shown, and were developed with co-curators in each city—Laurene Vaughan and Brad Haylock in Melbourne, and Peter Hall and Beck Davis in Brisbane.

The unifying aim of the exhibition series is to draw together a number of approaches to the challenges of global warming, big data, and embodied experience in the digital context. These challenges are taken up in the processes of participatory and co-design, speculative design, and exploratory experimental research across the fields of art and design. The impetus for the exhibitions is the increasingly impassioned debates about the narrow strictures of categorisation in art and design and the emergent strategies of cultural probes, design games, prototypes, and the frontrunners of critical and speculative design. To use an analogy, these exhibitions aim to search for the holes in the fence that dingoes, a species of dog unique to Australia, are expert at sniffing out. Through these openings, connections between categories are made and disciplines communicate with each other to develop new approaches for addressing contemporary concerns.

In Brisbane, the exhibition is accompanied by a panel discussion with Katherine Moline, Peter Hall, Beck Davis and Eleni Kalantidou, and workshops include “Cognitive Redirective Mapping” held by Tristan Schultz, and “Myths of the Near Future 2” held by Katherine Moline.

In Sydney, the exhibition presented guest lectures including one by William Gaver (Goldsmiths), and the accompanying symposium brought together papers by Cameron Tonkinwise (Carnegie Mellon University), Mike Michael (Sydney University), Laurens Boer and Jared Donovan (University of Southern Denmark and QUT), Yoko Akama (RMIT), Laurene Vaughan (RMIT), Abby Mellick (Western Sydney University) Laura Fisher (UNSW National Institute for Experimental Arts), and Katherine Moline (UNSW Art & Design). Workshops included “Phenology Clocks” held by Tega Brain, “Tangible and Embodied Interaction Lab” held by Jef Koh and George Khut, “The BioArt Kitchen” held by Lindsay Kelley, “Digital Bamboo” held by Karina Clarke and Rod Bamford, and “Veloscape: Exploring Sensory Cartographies with Sydney Cyclists” by Volker Kuchelmeister and Laura Fisher.¹

In Melbourne, the exhibition presented a panel discussion by Dan Hill (Chief Design Officer, Future Cities Catapult London), Brad Haylock (RMIT), and Katherine Moline (UNSW Art & Design), and a seminar on the challenges of exhibiting design presented by Katherine Moline and Brad Haylock.²

This project has been generously supported by UNSW Australia Art & Design, UNSW Galleries, The National Institute for Experimental Arts, RMIT School of Media and Communication, RMIT Design Research Institute and RMIT Design Futures Lab, Griffith University Art Gallery, Griffith Centre for Art Research, and Queensland College of Art, Griffith University.

¹ For more information, see <http://www.niea.unsw.edu.au/events/exhibition-feral-experimental>; <http://niea.unsw.edu.au/events/symposium-workshops-feral-experimental>.

² For more information, see <http://www.designhub.rmit.edu.au/exhibitions-programs/experimental-practice-provocations-in-and-out-of-design>.

LIST OF WORKS

- 1 **BIODress: A Body-Worn Environmental Interface 2014**
Sarah Adhitya, Beck Davis, Zoe Mahony, Raune Frankjaer, Tricia Flanagan
Digital footage, cloth, thermochromic dyes, conductive thread, EMG sensors, particulate sensor, actuators and shape memory alloy
- 2 **Community-Centred Innovation: Co-Designing for Disaster Preparedness 2009–14**
Yoko Akama
Playful triggers and Social Network Map
Community in Emergency Management, video
Southern Otways pilot program, video
- 3 **Run That Town: A Strategy Game with a Twist 2013**
Australian Bureau of Statistics, Leo Burnett Sydney, and Millipede Creative Development, Canberra and Sydney
Two videos looped
- 4 **The Sensitive Aunt Prototype 2012**
Laurens Boer and Jared Donovan
one prototype, 18 x 18 x 10cm
Photographs
- 5 **Tile Town 2015**
Andrew R. Brown
Generative visualisation
- 6 **Ortho 2015 and Cups for Alice 2015**
Bettina Bruder
Video
- 7 **Circus Oz Living Archive 2011–14**
David Carlin, Lukman Iwan, Adrian Miles, Reuben Stanton, Peta Tait, James Thom, Laurene Vaughan, Jeremy Yuille
Video of digital archive
- 8 **Chicks on Speed Presents FOOTwerk: Improvisations in Gender, Sound and Space 2015**
Alexandra Murray-Leslie in collaboration with Kenneth Feinstein and Dr. Sam Ferguson, featuring Marla Bendini and Melissa Logan
Video
- 9 **NO QUO Attempts 2015**
DesignInquiry
Artists book
- 10 **Tension 13 2007 and Tension 17 2013**
Timothy Kendall Edser
Single-channel video and four-channel video
- 11 **BODYecology 2015**
Tricia Flanagan
Video
- 12 **Energy and Co-Designing Communities ECDC 2010–14**
Bill Gaver, Mike Michael, Tobie Kerridge, Liliana Ovale, Matthew Plummer-Fernandez, Alex Wilkie and Jennifer Gabrys
ECDC Energy Babble
ECDC photographs
ECDC video
- 13 **Avena+ Test Bed—Agricultural Printing and Altered Landscapes 2013**
Benedikt Groß
Avena+ Test Bed—Agricultural Printing and Altered Landscapes, video
Avena+ Test Bed—Process, video
- 14 **Design-Antropologisk Innovations Model /The Design Anthropological Innovation Model (DAIM) 2008–10**
Joachim Halse, Eva Brandt, Brendon Clark, and Thomas Binder
Rehearsing the Future (2010), video
Co-Creation of In-Shop Battery Machine (2010), video
Inspiration i en boks: Brugerdræven Innovation på Affaldsområdet (2010), toolbox containing print in various formats, digital video, and raw game materials
Joachim Halse, Eva Brandt, Brendon Clark, and Thomas Binder, *Rehearsing the Future* (Copenhagen: The Danish Design School Press, 2010)
- 15 **Public Meeting 2013**
Brad Haylock
Printed poster, 150 x 100cm, framed
- 16 **The Phenology Clock 2014–15**
Natalie Jeremijenko, Tega Brain
Two clocks, New York and Sydney
- 17 **Veloscape v.7 2015**
Volker Kuchelmeister, Laura Fisher, Jeong Greaves, and Jill Bennett
Video
- 18 **Myths of the Near Future 2: Equipment 2010–15**
Katherine Moline
Four rubber and steel sculptures, dimensions variable
- 19 **ZXX typeface 2012**
Sang Mun
Video
- 20 **Autonomous Kinetic Poetry Robot 2015**
Jason Nelson
Robot
- 21 **They Rule 2001/11**
Josh On/LittleSis.org
Interactive video
- 22 **Drawing 'Together' Indigenous Futures 2015**
Tristan Schultz
Printed vinyl, 200 x 200cm
- 23 **If We Never Meet Again 2010**
Noam Toran
Two-channel video
- 24 **The Institutional Harvest 2013**
Mitchell Whitelaw
Interactive video
- 25 **Robotic Spider Dress 2.0 (Intel Version) 2014**
Anouk Wipprecht
Video

PANEL DISCUSSION

Katherine Moline, Peter Hall, Beck Davis, Eleni Kalantidou
10am–12pm, 18 September 2015
Griffith University Art Gallery

WORKSHOPS

“Myths of the Near Future 2”
Katherine Moline
1–3pm, 18 September 2015
Griffith University Art Gallery

“Cognitive Redirective Mapping”
Tristan Schultz
3–5pm, 18 September 2015
Griffith University Art Gallery

CURATORS TALK

Katherine Moline, Peter Hall and Beck Davis
1–2pm, 19 September 2015
Griffith University Art Gallery



Installation detail of *Community-Centred Innovation: Co-Designing for Disaster Preparedness* by Yoko Akama in *Feral Experimental: New Design Thinking* at UNSW Galleries, July–August 2014. Photographer: Britta Campion.

EXHIBITION AS EXPERIMENTAL PRACTICE

LAURENE VAUGHAN

Within the contemporary cultural landscape, touring exhibitions are increasingly the norm. Whether historic or contemporary, the trading of productions between institutions is a mainstay of cultural economies. The business of culture is often founded on visitor numbers and the depth and breadth of exposure. Despite our rapidly evolving digital capacities, artworks and artefacts traverse the globe making their contribution to our global cultural awareness. Typically, such exhibitions adopt one of two exhibition design approaches to support the curatorial intent.

One: Exhibition as re-presentation. This is possibly the most conventional mode of touring exhibitions. A collection of items is assembled to explore an idea or to articulate a phenomenon, such as the work of an artist, artists, or designers, a period in time, or a new technology, or cultural quality. These are then presented within a gallery site and, through arrangement, a narrative is created. The visitor views or engages with the works, often with the assistance of signage, a catalogue, or some other information device. As the exhibition moves from one site to another, it responds to the spatial dimensions of the gallery, which may result in a different arrangement and subtly different narratives between the elements, but the integrity of the exhibition is retained through the content of what is on display.

Two: Exhibition as thematic immersive experience. In this approach, the exhibition design evolves across different locations while retaining thematic consistency in aesthetic experience. Such exhibitions transform each of the exhibition locations through paint and floor finishes as well as display methods, which provide the viewer with a holistic experience of the content. The recent National Gallery of Victoria touring exhibitions *The Fashion World of Jean Paul Gaultier: From the Sidewalk to the Catwalk* (2014–15) and *Masterpieces of the Hermitage: The Legacy of Catherine the Great* (2015) are examples of this approach. On entering, the visitor not only sees art and objects but is also immersed in a multi-sensory environment designed to expand the experience and create some greater social context for what is on display. With each iteration, these touring exhibitions respond to and in some ways impose themselves upon the spatial dimensions of the gallery.

This exhibition *Experimental Practices/Design Thinking* presents something different, a third way for envisioning and realising a touring exhibition. This is the third iteration of the exhibition. To date, there have been three names, three bodies of works, presented in three distinct designs, with three different identities, and an evolving curatorial team headed by Katherine Moline. Some of the items in the exhibition have been constant; some have come, gone and returned; and, as with the curatorial team, there have been additions made that respond to the local context of the exhibition. This localism has been both cultural and institutional; the exhibition has travelled from UNSW Art and Design, Sydney, to the Design Hub at RMIT Melbourne, and now to Griffith University Art Gallery located within the Queensland College of Art, Brisbane. These three locations represent not only three diverse geographic sites and cities, but also three distinct institutions that have different foci, expertise, and narratives around experimental, critical, and speculative design.

This evolving and responsive curatorial approach to exhibition design presents an innovative response to exhibition practice as design research. This exhibition project models the methodology and intent of the content; it is a critical, speculative, and experimental exploration of critical, speculative, and experimental design. As a project, the three iterations, *Feral Experimental: New Design Thinking*, *Experimental Practice: Provocations In and Out of Design* and *Experimental Thinking/Design Practices*, explore the synergies between design in practice, design for practice, and the practice of presenting design while providing a context for a conversation about the agency of design.

As I noted in the catalogue for the second iteration of the exhibition, the works included present a spectrum of what we may classify as art or design. Despite such disciplinary classifications, it is their shared political and social agendas that unite them as a body of work that critiques design as a mere product for consumption or a solution to a problem. They embrace the greater possibilities of design, and they pause here as works in a gallery so that we, the audience—as visitors, viewers, or participants—may engage with

what their makers have to say. Whether concerned with the body, community, consumption, the politics of ownership, or data and use, these works present ideas that are at times aligned or contrary to each other and to where they are. In this way, this feral, experimental, critical, and speculative exploration of design thinking has enabled a critique to emerge through exhibition and a radical engagement with an open and iterative curatorial approach. To do this, Moline, as the instigator and 'holder' of the project, has had to maintain a balance between her intellectual inquiry and the characteristics of her own practice and the design of this curatorial collective and the subsequent exploration of the ideas in its multiple iterations. This is a research approach that requires bravery and trust; an exhibition as a public place to undertake experimental design.

There have been, and will be, accompanying public forums, lectures, and floor talks, engagements with students and journalists and public reviews. The approaches to design presented in this exhibition aim to provoke conversation and challenge social norms. To my mind, the exhibition and the curatorial approach could even be listed as one of the works within the discussion, and not just the site where the conversation can take place.

BRINGING EXPERIMENTAL DESIGN THINKING AND PRACTICE TOGETHER

KATHERINE MOLINE

Design research has attracted attention and expanded significantly since the design methods movements of the 1970s, most recently under the auspices of design thinking. However, what constitutes productive research in contemporary design, remains contested, particularly in relation to two key strands of design research: co-design and speculative design.

Co-design has variously adapted methods and strategies from sociology, anthropology, and ethnography for understanding and addressing complex social and environmental issues, such as reconceptualising waste and minimising electricity usage. It seeks to involve diverse stakeholders and understand user experiences from their perspective. In contrast, speculative design explores what is in excess of designers' aims when the users of design engage with a designed object, service, or imagined future. Speculative design reflects on how designs are repurposed both intentionally and unintentionally in ways that enrich understandings of contemporary issues, and visualise near futures that current technologies might eventuate. Notwithstanding their shared aims of researching design and its effects, co-design and speculative design are rarely considered together in anthologies or exhibitions of contemporary design research. This is in spite of recent examples that intermix aspects of each, involve a greater number of stakeholders, and recombine technologies. In contrast to recent polarised debates,³ an examination of the crossovers between the two offers design an important resource: an extended imaginative, intellectual horizon for productively envisioning positive change. This essay shows how two projects that combine co-design and speculative design illustrate important implications for art and design research.

The methods that co-design adapts include documenting observation with video, shadowing people as they go about their business, conducting design games, developing performative interactions, and running workshops. These approaches focus on authorising all participants to bring tacit knowledge to design. The basic premises of co-design developed from a stipulation in participatory design that people affected by a design should participate in its development. Early writers on participatory design, such as Pelle Ehn and his colleagues, insist that design is both collaborative and distributed across diverse communities. They contend that ideas must be "envisioned, prototyped, and explored in a hands-on way" and tested early.⁴ Following on from participatory design, co-design shifts the focus from objects to socio-material assemblages, and "infrastructuring", which they define as creating the context in which design can continue after design, or use-as-design.⁵ This happens when the completion of design, often referred to as design-after-design, lies in the hands of all participants, not just designers.⁶

There are two competing definitions of speculative design. Sociologist Mike Michael defines the more commonly used one as a framework for engaging the public in science and technology studies that explains what he sees as "overspills" and public responses that exceed the parameters established by researchers.⁷ Rather than ignore or "sanitise" unexpected events, Michael sees them as a source for insights that generate new approaches to design.⁸

William Gaver has described projects such as the *Energy and Co-Designing Communities (ECDC)*, that he has developed with Tobie Kerridge, Mike Michael, Liliana Ovale, Matthew Plummer-Fernandez, Alex Wilkie, and Jennifer Gabrys, as speculative design.⁹ Alternatively, designers Anthony Dunne and Fiona Raby see speculative design as critical of industry norms and associate it with radical and adversarial design.¹⁰ They suggest that speculative design prompts reflection on interactions with design and creates "fictional worlds", "what-if scenarios" and "cautionary tales".¹¹ These approaches are distinct from commercial design because, in their words, speculative design visualises "beyond the limits of reality as it is".¹² Notably, both co-design and speculative design structure new processes that authorise tacit knowledge and redesigns of design by lay experts. These definitions raise compelling issues about lay-expert experience in design. Effectively, for designers, researchers, and the users of design, this changes everything. My own research into "overspills" in the use of mobile telephones seeks to elaborate more broadly on how such repurposing by lay-experts changes design research.¹³

Crossovers between co-design and speculative design suggest that such categories are not clear-cut. Recent co-design has engaged imaginatively with alternatives to the status quo via the cultural probes of speculative design, while speculative design that engages communities in reimagining the future has been developed with co-design's focus on lived experiences. In other words, in practice, both approaches combine strategies to imagine possible futures with a greater number of stakeholders, and recombine technologies, to address wide-ranging issues

3 For an example of polarised debates, see the following video: Ahmed Ansari, *Knotty Objects Debate on Critical Design*, MIT Media Lab, 16 July 2015, <http://www.media.mit.edu/video/view/knotty-objects-2015-07-16-10>.

4 Erling Bjögvinsson, Pelle Ehn, Per-Anders Hillgren, "Design Things and Design Thinking: Contemporary Participatory Design Challenges," *Design Issues* 28, no. 3 (Summer 2012): 101.

5 "Infrastructuring" describes how an infrastructure, such as the Internet, "reaches beyond the single event (temporal) and any one particular site (spatial); it is not reinvented every time, and is embedded in other sociomaterial structures." Thomas Binder, Giorgio De Michelis, Pelle Ehn, Giulio Jacucci, Per Linde, Ina Wagner, *Design Things* (Cambridge: MIT Press, 2011), 172. As Binder et al. note, infrastructuring comes from Susan Leigh Star.

6 Binder et al. acknowledge John Chris Jones's idea of "continuous design and redesign" (1984) and Cameron Tonkinwise's notion of "unfinished design" (2005) in the concept of design-after-design. Binder et al., *Design Things*, 171.

7 Mike Michael, "What Are We Busy Doing?: Engaging the Idiot," *Science, Technology & Human Values* 37, no. 5 (2012): 529.

8 *Ibid.*, 534.

9 William Gaver, Public Lecture at UNSW for *Feral Experimental: New Design Thinking*, 24 July 2014, <http://niea.unsw.edu.au/events/symposium-workshops-feral-experimental>.

10 Carl DiSalvo, *Adversarial Design* (Cambridge, Mass: MIT Press, 2012); Anthony Dunne, *Hertzian Tales* (Cambridge, Mass: MIT Press, 2005).

11 Anthony Dunne and Fiona Raby, *Speculative Everything: Design, Fiction, and Social Dreaming* (Cambridge, Mass: MIT Press, 2013), 3.

12 *Ibid.*, 12.

13 Katherine Moline, "Myths of the Near Future: Social Experiences Mediated by Phone," 2014, <http://www.digital-ethnography.net/past/>.



Bill Gaver, Mike Michael, Tobie Kerridge, Liliana Ovale, Matthew Plummer-Fernandez, Alex Wilkie and Jennifer Gabrys *ECDC Energy Babble* 2014.

such as collaboratively reframing waste as a resource and promoting environmentally sensitive farming. In such projects, co-design engages with a user's fantasies and desires through performative spaces, such as design games. At the same time, when speculative design leaves the gallery for the wild or situated context, it creates space for productively envisioning change.

REMAKING WASTE AS RESOURCE

The *Design-Anthropological Innovation Model (DAIM)* (2008–10) developed by Thomas Binder, Eva Brandt, and Joachim Halse engaged lay-expert participation in projects at the Royal Danish Academy of Fine Arts, School of Design (KADK) in Copenhagen. This large-scale research project investigated user-driven innovation in waste disposal and recycling services in three suburbs of Copenhagen. Subtitled "Rehearsing the Future", *DAIM* videoed the waste practices of community residents and the daily work of garbage collectors to develop the *User-Driven Innovation Box*. The box contains dolls, cue cards, a kit of everyday materials (such as cotton balls) and DIY craft materials with which props can be constructed for various design-games, including puppet plays about recycling.

According to Halse, *DAIM* aimed to explore "an ethnography of the possible".¹⁴ The design achieved this ambition by introducing speculative practices that imaginatively re-conceptualised the future. *DAIM* shifted the design games of co-design in ways that resonate with speculative design's engagement with overflows and

unexpected events. Thus, *DAIM* engaged with the social imaginary of design: that which a society at a particular time defines as the broadly accepted function of design. Citing anthropological research into the technologies of the imagination—defined as "the social and material means by which particular imaginings are generated"¹⁵—Halse attests that participatory design engages with "a fictive reality" moderated by "present resources and constraints".¹⁶ Instead of co-designing or speculating on waste operations as the termination of a process, the social imaginary with which *DAIM* engages sees waste not only as a creative resource, but also a material that is co-created.

INFRASTRUCTURING AGRICULTURE AS HABITAT RE-CREATION

Avena+ Test Bed: Agricultural Printing and Altered Landscapes (2013) by Benedikt Groß synthesised precision farming technologies to partition fields for growing biofuel as well as the creation of ecotone habitats for flora and fauna. As a speculative design, this project explores the possibilities of big data in agriculture by combining information on soil conditions, moisture content and land coordinates, a programmable tractor, and local knowledge of plants to create an energy production field.¹⁷ The project's title recognises the application of agricultural data analysis using GPS and GIS and digital production to field preparation in precision farming. In other words, the design

transformed a tractor into something like a desktop printer. Designed as an exploration of agriculture and digital fabrication, *Avena+ Test Bed* relied on collaborations with agriculture experts, engineers, a tractor driver, a videographer, and a pilot. As an example of speculative design, Groß's work addresses the combined challenges of farming, government policies on land use, and environmental protection. By staging a prototype that combined technologies, *Avena+* provokes critical reflections about interactions with design, as well as providing a viable model for the sustainable agriculture of biofuel. Groß proposes that it can provide an income stream to farmers via a leasing system in response to the new EU regulations for land development.

This re-combination of speculative and co-design advances a model in which farmers can experiment with high-tech adaptations for farming, and create the conditions for design-after-design. *Avena+* thus configures farming as a practice that creates conditions for cohabitation. As with *DAIM*, I recognise enormous potential in *Avena+ Test Bed* when seen as a design that draws together co-design and speculative practices. This approach to speculative design is not only inflected with "what if" questions and practices, but also "thinged" into a provocative prototype—a "provotype", as Laurens Boer and Jared Donovan would say.¹⁸ At the same time, and like *DAIM*, *Avena+* exemplifies infrastructuring processes that draw people together who continue designing after design. This changes everything.

¹⁵ David Sneath, Martin Holbraad, and Morten Axel Pederson, cited in *ibid.*, 182.

¹⁶ Joachim Halse Halse, "Rehearsing: Just How Far from Implementation?" 27 April 2010, <http://chokobar.wordpress.com/>.

¹⁷ Benedikt Groß, "Avena+ Test Bed—Agricultural Printing and Altered Landscapes," June 2013, http://benedikt-gross.de/log/2013/06/avena-test-bed_agricultural-printing-and-altered-landscapes.

¹⁸ Laurens Boer, Jared Donovan, and Jacob Buur, "Challenging Industry Conceptions with Prototypes," *CoDesign* 9, no. 2 (2013): 73, 87.

¹⁴ Joachim Halse, "Ethnographies of the Possible," *Design Anthropology: Theory and Practice*, ed. Wendy Gunn, Ton Otto, and Rachel Charlotte Smith (London: Bloomsbury, 2013), 184.

FOR A SPECULATIVE DESIGN OF THE NEAR FUTURE

PETER HALL AND BECK DAVIS

Walking in the city is now quite transformed from the “pedestrian speech acts” or “trees of gestures” that Michel de Certeau famously celebrated to an experience circumscribed by more distant forces.¹⁹ Directives are issued by programmers and their governing commercial or legislative imperatives, delivered via quantified and commodified soundtracks, and walking itself is visibly influenced by the presence, or absence, of voices on the other end of telephones. For every ten pedestrians, there is one gambolling to a transmitted rhythm via earbuds, one creeping forward with head bent over a screen, and another stumbling asymmetrically with microcomputer pressed to the ear.

This is not quite what Norman Bel Geddes imagined for the future in his elaborate speculative design fiction of 1939, *Futurama*. In this, the most popular attraction in the New York World’s Fair (designed for General Motors) the future world of 1960 had “solved” traffic congestion with a superhighway system. To effectively convey crowds through the diorama, Geddes introduced a system of moving sidewalks, escalators, and elevators that would transport passive visitors past displays engineered so that, as Jeffrey Meikle puts it, “the spectator’s interest is stimulated and his responses are involuntary.”²⁰

One characteristic of speculative design of the twenty-first century is that the future is neither populated with slack-jawed sentient beings floating from hover car to skyscraper, nor superhuman cyborgs whose capacities have been enhanced by prosthetic limbs, senses, and brains (via Google Glass). The future is a much messier, overpopulated place, where bodies, technology, disease, and waste co-mingle and procreate to form new hybrids, both accidental and designed. It’s a place described by Nigel Thrift as a “technological bestiary”, accompanied by

“frayed and loose outstinctual ends.”²¹ Indeed, Thrift’s speculation focuses not on utopias or dystopias, but on the near-future emanating from the present.

In this light, the complaint that speculative design is just another “style-obsessed modernist imposition”²² suggests an impoverished view of a practice that has interested designers, artists, and architects at least since Jacques de Vaucanson invented a flute-playing automaton and a mechanical, digesting duck—not as a bourgeois amusement, but as a philosophical project, a praxis, to complete the “mechanization of the world picture.”²³ If designers need gallery spaces to think through the implications of this technological bestiary, it is because the gallery presents an opportunity to scrutinise, then re-situate.

Indeed, it is through the gallery that a collision occurs between the art and social worlds. Within this space, objects can be abstracted from their function; the stories present are curated and mediated, providing both the artist/designer and the viewer opportunities for immersion and symbolic exchange. By removing people from their habitual, practical, and everyday spatially oriented encounters, these moments of quiet reflection, when expressed through mini-narratives, allow one to “refigure” their understanding of events²⁴ of the known world (stories of our present and or near-future world). Some new additions to this exhibition pose questions about a near-future world: How might our clothing facilitate interspecies communication? How might our sleep patterns provide hues to waking life? How might past (situated) improvisations inform future (disembodied) typographic and cartographic practices?

Situating speculative design within a gallery provides an opportunity to operate “outside of normative design contexts.”²⁵ Whereas design is often conceived within the confines of working spaces, photographic feeds, and hand-held technological sites, the gallery disrupts the ways in which we perceive truth. This is emphasised by James Auger when he describes the need to allow for an inquiry that is “free from the demands of industry and the market forces that inform the majority of technological trajectories.”²⁶ In taking this view, Auger illustrates the role that speculative design plays in formulating the right questions of a broad audience, specifically when seeking to redirect technological trajectories.

Thus, this exhibition is an effort at setting the stage for a speculative design of the near-future, one that explores embodied practices and tactics that respond, in imaginative ways, to the technological bestiary of the present day and its lines of flight.

19 Michel De Certeau, *The Practice of Everyday Life: Living and Cooking, Volume 2* (Minnesota: University of Minnesota Press [1984] 1998), 98.

20 Jeffrey Meikle, *Twentieth Century Limited: Industrial Design in America 1925–1939* (Temple University Press, 2010), 198.

21 *Outstinct* is a counterpart to *instinct*, used to explain how, with the technological prostheses on which it depends, the body is now constantly redefining the world around it and becoming redefined in the process. Nigel Thrift, “The ‘Sentient’ City and What It May Portend,” *Big Data & Society* 1, no. 1 (2014): 15.

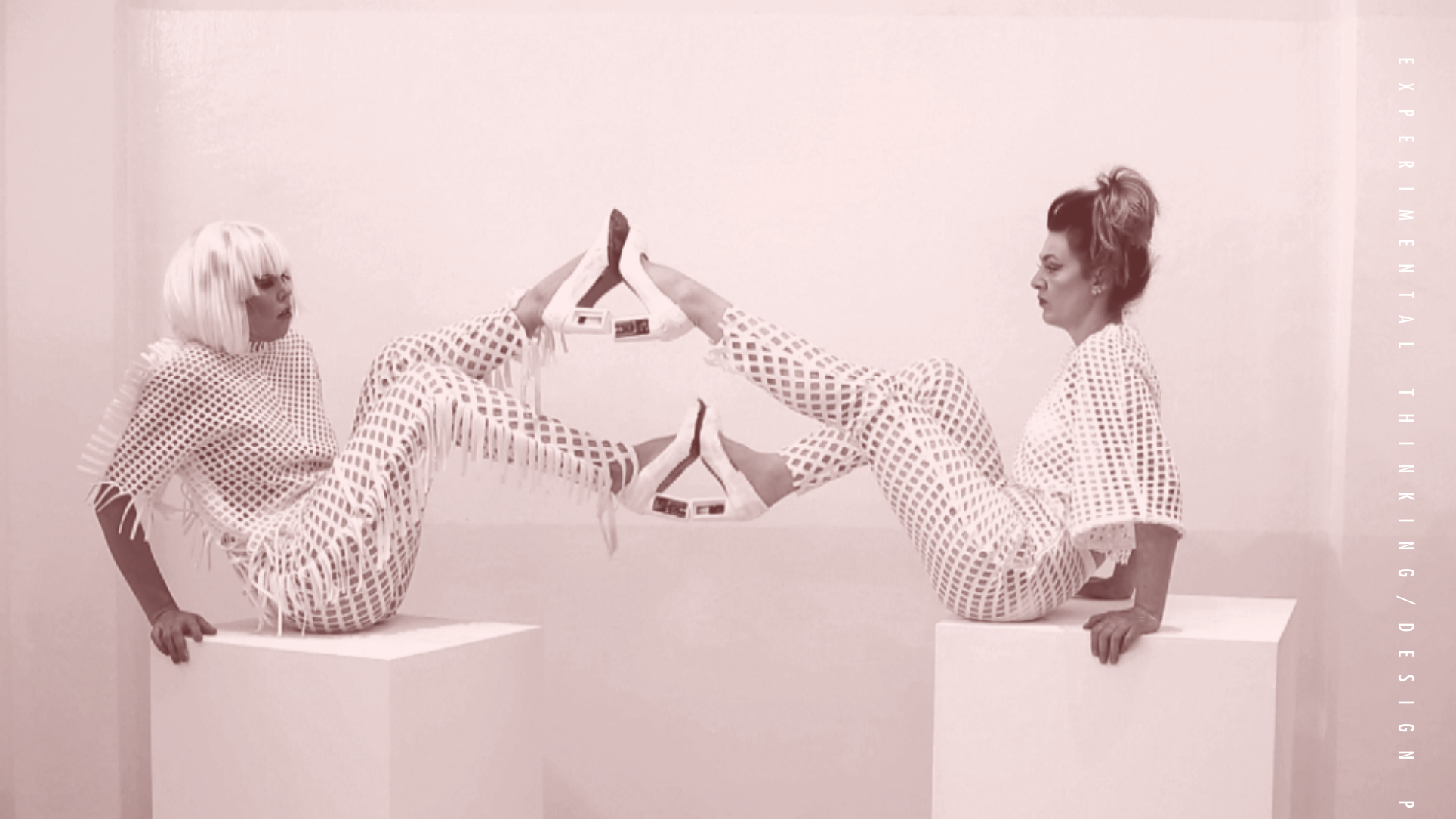
22 Cameron Tonkinwise, “How We Intend to Future: Review of Anthony Dunne and Fiona Raby, *Speculative Everything: Design, Fiction, and Social Dreaming*,” *Design Philosophy Papers* 12, no. 2 (2014): 184.

23 D. M. Fryer and J. C. Marshall, “The Motives of Jacques de Vaucanson,” *Technology and Culture* (1979): 269.

24 C. Mattingly, *The Paradox of Hope: Journeys through a Clinical Borderland* (California: University of California Press, 2010).

25 James Henry Auger, “Living with Robots,” *Journal of Human-Robot Interaction* 3, no. 1 (2014): 21.

26 *Ibid.*



Alexandra Murray-Leslie, *FOOTwerk: Improvisations in Gender, Sound and Space* (featuring Marla Bendini and Melissa Logan), NTU Centre for Contemporary Art, Singapore, 2015. Photographer: Alexandra Murray-Leslie. Image courtesy Milani Gallery.

The FOOTwerk project is kindly supported by The Australia Council for the Arts, Creativity and Cognition Studios, The University of Technology Sydney, ADM, Nanyang Technological University, Singapore and Arts and Design Research Incubator, The Pennsylvania State University.



Installation of *Avena+ Test Bed* by Benedikt Groß and *If We Never Meet Again* by Noam Toran in *Feral Experimental: New Design Thinking* at UNSW Galleries, July–August 2014. Photographer: Britta Campion.

JUST DESIGN: BEING DOGMATIC ABOUT DEFINING SPECULATIVE CRITICAL DESIGN FUTURE FICTION

CAMERON TONKIN WISE

EXTRACT FROM A LONGER ESSAY (UNPUBLISHED), 2015

Every time you qualify design with, or add design to, some other quality or practice, you are claiming that design does not already do that.

All the following phrases are redundant and/or appropriative of design: Design Futures, Design Fiction, Speculative Design, Critical Design, Adversarial Design, Discursive Design, Interrogative Design, Design Probes, Ludic Design. Design that does not already (imagine the) Future, (consider) Fiction, Speculate, Criticise, Provoke, (promote) Discourse, Interrogate, Probe, or Play is inadequate design.

Not all (commercial) design does all those things, but it should.

Thinking that these prefixes or suffixes need to be added to design reinforces the mistaken belief that design is just an instrumental technical task—styling. These qualifiers are precisely what allow (commercial) designing to not (have to) do all those things, or, ironically, constrains (commercial) designing from doing all those things.

Calling out all these specialist versions of designing benefits only the artificial ecosystems of academic design research, especially the bubble that is Human-Computer Interaction (HCI).

Design makes futures. What designers make becomes the futures we inhabit. In this, design is unique. Other discourses imagine new and different things, but do not make, do not realise them as things that people in the future will experience as their reality. There are practices of making, but these crafts do not imagine new kinds of, and so future, things.

There are some other practices that make futures—architecture, engineering, planning. But these practices all work on larger-than-human scale. Design is unique for focusing on everyday things of use, handlable equipment and furnishings, whether they are products, communications, or environments (up to the scale of interiors).

This should be put more forcefully: in addition to design being unique as the practice of making futures, design is unique for approaching the world in terms of human–thing interactions. Design sees materials practices; design sees the way the world is realised as material practices. Design makes futures by making new material practices.

Designing involves:

a) Generating Futures

Designers have a perverse ability to see not what is there, but instead what else could or should be there. They are considered creative because they generate alternative realities, some of which they make into future realities. Designers are also considered optimistic. Designers are motivated by perfectibility, despite the evidence of every design project; therefore, they often generate idealistically utopian futures.

b) Evaluating Futures

Designing sketches and prototypes are possible ways of materialising futures. This is part of a generative process by which designers get out of (their) present reality. But it is also how designers evaluate whether those futures are preferable to the present. Designing does virtual testing—on paper, in studios, through (computer) models, via enactments—before making and investing in often irreversible materialisations. All designs that emerge from the process of designing—generating and evaluating—are criticisms of things about the present. Design criticises (the present) by making (future) alternatives.

c) Enlisting Sponsors for Those Futures

While designers make, they cannot make alone, especially at the mass-production scale that is particular to design. Designers must convince many others, through many channels, of the value of making the futures they have generated—funders, suppliers, logisticians, craftspeople, marketers, users. Design is a process of persuading, alliance building, contracting, managing. Designers do this by involving various non-designers in aspects of the process of a) generating and b) evaluating this or that particular future. But designers also do this in general, creating openings for particular projects

by doing speculative work (e.g., Overton Windows to extend MAYA). All designing always involves designing designing, whether designing the look, talk and feel of a design firm; developing and promoting new ways of designing; or working strategically to open particular people and practices up to certain design futures.

d) Materialising Futures

Having generated futures that have been evaluated to be preferable by allies who have promised to help realise those futures, those futures can now be materialised—though that process has already begun as a result of a), b), and c). Materialising a design is not a finite process: it is not like designing ends when something gets produced. Design concerns practices, and a material product influences but does not control a practice, especially in complex contexts of many other everyday practices. So designers must, in an ongoing fashion, try to design the practices afforded by their products, or redesign their designs with respect to unexpected practices that emerge. All design is extended producer responsibility, in the “consequence business”: Transition Design.

In sum,

a) = Design Futures, Design Fiction, Speculative Design, Design Probes, Ludic Design

b) = Design Futures, Critical Design, Interrogative Design

c) = Design Futures, Speculative Design, Adversarial Design, Discursive Design

d) = Design Futures, Critical Design, Adversarial Design





Sarah Adhitya, Beck Davis, Zoe Mahoney, Raune Frankjaer, Tricia Flanagan *BIOdress: A Body-Worn Environmental Interface* 2014. Photographer: Zoe Mahony.



Yoko Akama *Playful Triggers for Community-Centred Innovation: Co-designing for Disaster Preparedness 2009–14*.

Community-Centred Innovation: Co-Designing for Disaster Preparedness 2009–14

Yoko Akama

The *Community-Centred Innovation* project addresses the predictions by many scientists that extreme weather events and natural disasters are anticipated to become more frequent and severe. *Community-Centred Innovation* explores a suite of innovative co-design methods to facilitate engagement with communities and emergency agencies in Australia. It builds adaptive capacities for collective and continuous development in strengthening resilience. The research is funded by the Bushfire Co-Operative Research Centre at RMIT University. Its methodology is incorporated as a training tool by the Australian Emergency Management Institute (AEMI) and has been used by a number of communities. The *Community-Centred Innovation* project was a finalist in the Victorian Premier's Design Award (2012) and won two Good Design Awards (2014), including Service Design and the Patron's Prize for Australian Design, which recognises design that "has the potential to shape the future economic, social, cultural and environmental aspects of our planet".¹

¹ Good Design Australia, "Good Design Awards," www.gooddesignaustralia.com/awards/otherawards/.

BIOdress: A Body-Worn Environmental Interface 2014

Sarah Adhitya, Beck Davis, Zoe Mahony, Raune Frankjaer, Tricia Flanagan

BIOdress allows the natural environment to communicate with humans and provides a precursor of how design might be approached from an environmental perspective. By linking the human wearer of the dress to a selected element of their natural environment, *BIOdress* provides a heightened understanding of the environment's quantitative state. The wearer is linked to a specific plant, which is able to sense its surrounding environmental quality on a more subtle level, such as changes in air quality. This piece is the first representation by this group of a broader exploration of interspecies communication and the development of an approach to sustainable design that moves beyond the Anthropocene. It creates a mode of expression for silent, non-human elements, such as plants, which are often forgotten due to their inability to compete against the human voice.



Australian Bureau of Statistics (ABS), Leo Burnett Sydney, and Millipede Creative Development *Run That Town: A Strategy Game with a Twist* 2013. Image courtesy the ABS.

Run That Town: A Strategy Game with a Twist 2013

The Australian Bureau of Statistics, Leo Burnett Sydney, and Millipede Creative Development, Canberra and Sydney

Run That Town combines Census data from the Australian Bureau of Statistics (ABS) and mobile phone app technology in a strategy game for the design of municipalities. The Australian Census collects information from every household in the country every five years. These data inform the budget decisions of local, state, and federal governments about infrastructure, such as education, the environment, and healthcare.¹ The mobile app *Run That Town* was commissioned by the ABS to facilitate gamers in imagining how services, infrastructure, and the opinions of local populations interact with each other in the local communities of more than 2,500 Australian postcodes, based on data from the 2011 Australian Census. The app offers hundreds of projects, including swimming pools and theme parks, which each community can develop and change. Before implementing projects, gamers can poll their community for responses based on demographic profiles in the Census data with mock newspaper articles providing feedback. In the choices of both 'practical' and 'preposterous' projects, gamers experiment with community leadership and find out if they will be, in the words of *Run That Town*, "treated to a tickertape parade, or

chased out of town by an angry mob".² According to advertising agency Leo Burnett Sydney, *Run That Town* "integrates real world data tightly into gameplay", while the mobile game website Pocket Gamer celebrated how the game provides opportunities to find out if offering free ice cream increased the popularity of mayors.³

- 1 Australian Bureau of Statistics, "Spotlight: Interactive Infographic Movie," 2014, www.spotlight.abs.gov.au/Flash/#/2/1.
- 2 *Run That Town* app, runthattown.abs.gov.au/.
- 3 Leo Burnett Sydney, "Run That Town," 2013, www.leoburnett.com.au/Sydney/work/run-that-town; Mark Brown, "Play SimCity with Real Data in Free Aussie Game *Run That Town*," *Pocket Gamer* 20 May 2013, www.pocketgamer.co.uk/r/Multiformat/Run+That+Town/news.asp?c=51003.



Laurens Boer and Jared Donovan *The Sensitive Aunt Provotype* 2012.

The Sensitive Aunt Provotype 2012

Laurens Boer and Jared Donovan

The Sensitive Aunt Provotype was designed as part of *Indoor Climate and Quality of Life*, a three-year research study of participatory design and user-driven innovation resulting from collaboration between two universities and five industry partners.¹ *Indoor Climate* endeavoured to understand inhabitants' experiences of comfort in domestic, business, and institutional environments. It involved a literature review on the meaning of comfort, an ethnographic study of a range of indoor climates and environments, a prototyping process designed to provoke debate and engage participants in discussions about future possibilities, and a final phase on the development of new product opportunities.² Laurens Boer, Jared Donovan, and Jacob Buur describe "provocative prototyping" as that which engages a range of stakeholders and helps participants understand

what they call the "tensions at the fuzzy front end of new product development".³ The tensions to which they refer involve the different conceptions of a new product or service from the perspectives of manufacturers and design users. *The Sensitive Aunt* emits coloured light in relation to the temperature and air quality of the environment in which it is placed. In addition, when the buttons on the top of the device are pressed, it displays suggestions for ways to improve the temperature, light intensity, and air quality on an LED screen. The provotype was distributed and tested in a range of contexts by each industry partner involved in the project.

- 1 *The Indoor Climate and Quality of Life* research project was conducted between 2007 and 2010.
- 2 Jacob Buur, "Why Listen to Users?" in *Making Indoor Climate: Enabling People's Comfort Practices*, ed. Jacob Buur (Sønderborg: Mads Clausen Institute for Product Innovation, 2012), 3.
- 3 Laurens Boer, Jared Donovan, and Jacob Buur, "Challenging Industry Conceptions with Prototypes," *CoDesign* 9, no. 2 (2013): 73, 87. The authors note that prototyping is a design approach developed in systems design in the early 1990s.

Tile Town 2015

Andrew R. Brown

Tile Town is a generative audio-visual work that explores computational processes as a design prompt. The work evolves gradually over time and stochastic elements allow for serendipity and surprise in the ways that elements arise and align. The project builds a contemplative commentary on competing town-planning pressures of construction, decay, and environmental regrowth by simulating the unfolding animated interactions between competing generative processes. The deliberately abstract nature of the work is designed to enhance its association with diverse contexts and to promote an aesthetic orientation toward the world. It seeks to provoke the observer to reflect on their own experiences and to stimulate new ideas about the consequences of emergent dynamic systems.¹

¹ See <http://explodingart.com/tiletown/>.

Ortho 2015 and Cups for Alice 2015

Bettina Bruder

Ortho and *Cups for Alice*, two works from the series of twelve titled *Tools for Elastic Understanding*, engage audiences with material, performative, spatial, and participatory processes. *The Tools for Elastic Understanding* focuses on the intersection of knowledge, media, and representation. Both *Ortho* and *Cups for Alice* provoke fluid ways of sense-making via manipulated gauging devices and transformed tools for visualisation. Using custom-built appliances, Bruder aims to modify Western epistemological systems with subverted dichotomies and infused interstices designed for alternative interpretations. The series, as a whole, questions metrology as an unquestioned authority in the construction of reality. Administrative apparatuses and representations, such as measurements, norms, and industrial standards (e.g., paper sizes, screen formats, and grid systems) are revamped to inject constructive and poetological irritations in the processes of meaning-making in art and design.

Circus Oz Living Archive 2011–14

David Carlin, Lukman Iwan, Adrian Miles, Reuben Stanton, Peta Tait, James Thom, Laurene Vaughan, Jeremy Yuille

Circus Oz Living Archive brings together participatory design and interaction design in an extensive experimental process. The design celebrates the performances, rehearsal documentation, and advertisements of Circus Oz since the group's inception in 1978. The *Living Archive* digitises legacy video formats made redundant by technological change. It is an experimental prototype for a searchable archive that investigates the connections between innovation, repertoire development, performance, and audience interaction. As a participatory interaction design, the *Living Archive* involved a wide range of stakeholders, including circus performers who have contributed to Circus Oz over thirty-five years. Laurene Vaughan describes the interdisciplinarity and participatory design process of large-scale projects such as the *Circus Oz Living Archive* as reliant on "understanding and engaging with the socio-historic politics, and the pre- or misconceptions, or assumptions that are present when disciplines and practitioners

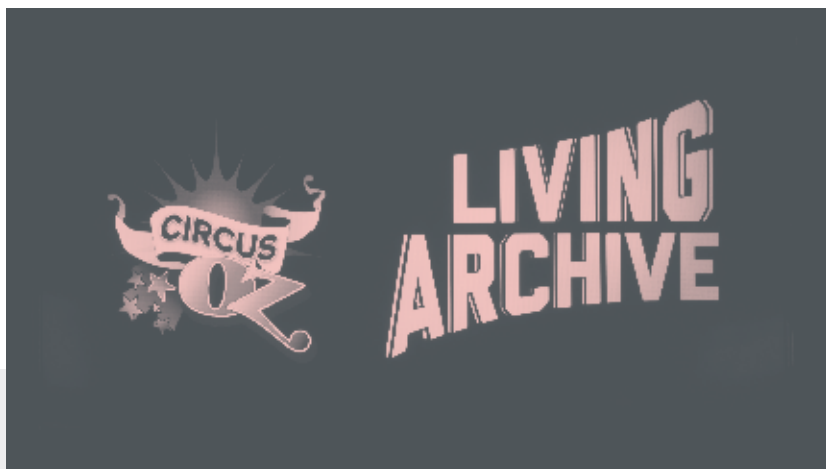
embark on the design of a collaborative project".¹ Vaughan suggests that the design was based on the twin ambitions of increasing the accessibility of the culturally significant organisation Circus Oz, and re-conceptualising connections between time, authorship, and place in contemporary performance. Addressing these aims through technology demanded an examination of terms much used in participatory design projects. For example, *Circus Oz Living Archive* is described as typical of interdisciplinary projects in its calibration of relationships between whole and part, and as an exploration of how creative practice is increasingly recognised as both research methodology and content.² The connections between process and meaning in this participatory interaction project saw the research team adopt the white coats of lab scientists in a carnivalesque performance of research in meetings with the circus. As a group, they redefined participation and interaction while creating an accessible archive.

¹ Laurene Vaughan, "Designing, Juggling, Balancing and Performing," *Proceedings of the Collaboration in Experimental Design Research Symposium* (Sydney: College of Fine Arts, University of New South Wales, 2011), 35.

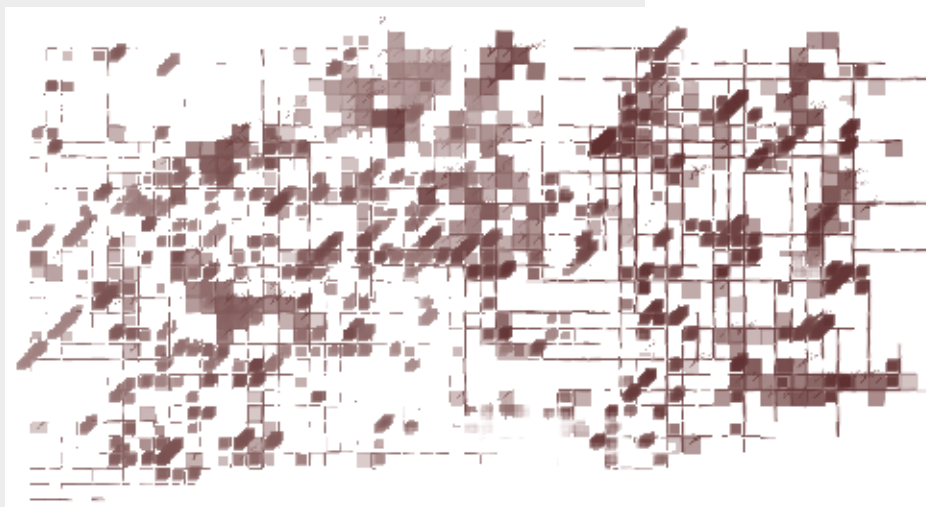
² *Ibid.*, 37; Laurene Vaughan, Reuben Stanton, David Carlin, Adrian Miles, Jeremy Yuille, James Thom, Peta Tait and Kim Baston, "Performing the Living Archive," *New Scholar: International Journal of the Humanities, Creative Arts and Social Sciences* 2 no. 1 (2013): 41.



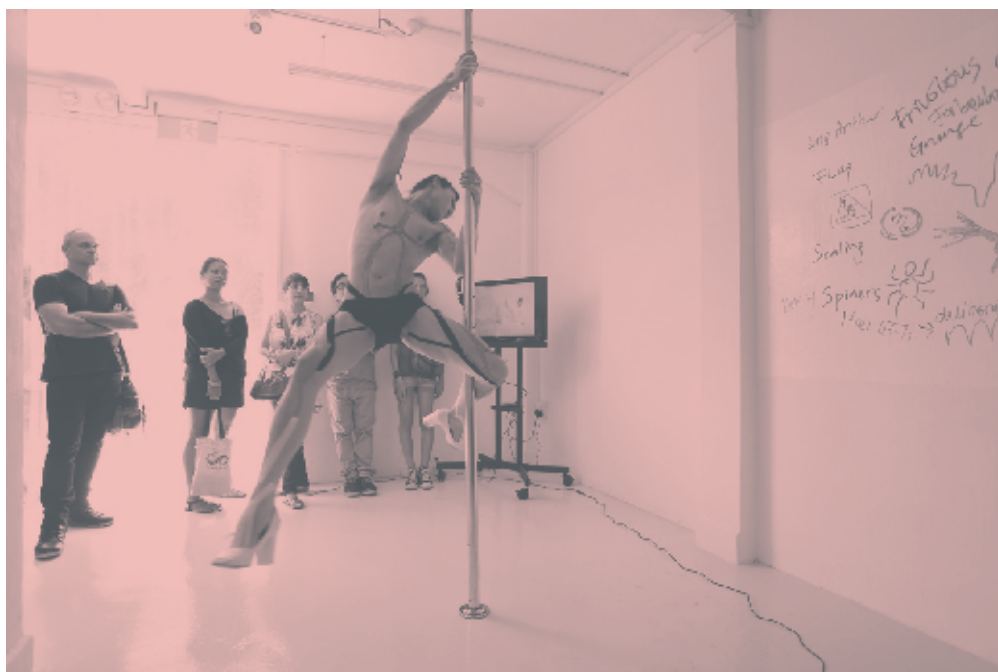
Bettina Bruder *Ortho* and *Cups for Alice* 2015.



David Carlin, Lukman Iwan, Adrian Miles, Reuben Stanton, Peta Tait, James Thom, Laurene Vaughan, Jeremy Yuille *Circus Oz Living Archive* 2011–14. Photographer: Sue Blackburn. Image courtesy of Circus Oz and the designers.



Andrew R. Brown *Tile Town* 2015.



Alexandra Murray-Leslie, *FOOTwerk: Improvisations in Gender, Sound and Space* (featuring Marla Bendini and Melissa Logan), NTU Centre for Contemporary Art, Singapore, 2015. Photographer: Alexandra Murray-Leslie. Image courtesy Milani Gallery.

The FOOTwerk project is kindly supported by The Australia Council for the Arts, Creativity and Cognition Studios, The University of Technology Sydney, ADM, Nanyang Technological University, Singapore and Arts and Design Research Incubator, The Pennsylvania State University.

Chicks on Speed Presents FOOTwerk: Improvisations in Gender, Sound and Space 2015 by Alexandra Murray-Leslie in collaboration with Kenneth Feinstein and Dr. Sam Ferguson, featuring Marla Bendini and Melissa Logan

FOOTwerk is an ongoing project by Alexandra Murray-Leslie that explores computer-enhanced footwear as an apparatus for extending the creative capacities of the human body in live art. Chicks on Speed's mix of performance art, fashion, collaged media, and pop music make for a critical push for presuming. This new work by Alexandra Murray-Leslie, co-founding member of Chicks on Speed, creates a new metaphorical reading of pole and trans-gender activism in Singapore, which have been silenced since the late 1970s. FOOTwerk gives the trans-artist Marla Bendini and the art of pole a new voice via somnified streams of data, contra to forms of silence that have been forced on minority groups throughout history. Generated via the inclusion of Murray-Leslie's computer-enhanced footwear during an exploratory jam session at @NTU Centre for Contemporary Art in Singapore in 2015, the data emitted from Marla's moves with the shoes influenced the entire audio-visual critical dialogue around the illegal status of her body in Singapore. The work continues Chicks on Speed's remixing of popular culture and politically engaged practice.

NO QUO Attempts 2015

DesignInquiry

NO QUO Attempts is a book-in-process initiated collaboratively during a week-long DesignInquiry gathering on the remote island of Vinalhaven, Maine, USA.¹ The ongoing project speaks of an exchange between process and the result, residing in the mountains of collaboration; a collective skill-share method using both physical and digital CNC-cut and collaborative type, fleshing out objects-that-make-objects and lectures about design and typography. The project focused on translating location and moment, and strategies with which to resist closure at every opportunity. The title suggests a twist on "Guido pro quo" (Latin for an exchange of goods or services), where one transfer is contingent upon the other, a tit-for-tat exchange that upholds the existing state of affairs. "NO QUO" considers an uneven give and take, suggesting practices where making something out of nothing or any imbalance of expectations, power, materials, or process can become a constraint as well as an opportunity. *NO QUO* proposes that instead of doing what's expected, design could be an act of going overboard and producing an excess of what's required, or eliminating the thing altogether.

¹ See DesignInquiry, <http://designinquiry.net>.

Tension 13 2007 Tension 17 2013

Timothy Kendall Edser

Since 2000, Edser has explored the artist's body as the subject and material for describing physical and psychological tension. Bound, suspended, dragged, and turned into an apparatus to break structures, Edser performs physical gestures that produce a public display of vulnerability. *Tension 13* (2007) shows Edser fall to the floor after climbing atop a vertical stack of ten sheets. As a site-specific performance, *Tension 17* (2013) shows the artist run across a platform that divided the existing architecture of Metro Arts as he broke through three walls at the centre of the exhibition space. The work extends from other wall-related performances in the series where Edser tested the gravitational force of his body against makeshift structures.¹

¹ Adapted from José Da Silva, "Timothy Kendall Edser: A Force of Oneself," http://www.metroarts.com.au/Resources/Galleries_Feb2013_web.pdf.



Timothy Kendall Edser *Tension 17* 2013. Performance, Metro Arts, Brisbane. Photographer: Carl Warner.



DesignInquiry *NO QUO Attempts* 2015.



Tricia Flanagan *BODYecology* 2015.

BODYecology 2015

Tricia Flanagan

BODYecology is an installation that generates bespoke blankets from sleeping participants. 'Humanistic intelligence' is the term used by Steve Mann to describe the synergy between human and computing systems, where both operate as if one organism, circumventing any conscious operative narrative. In *BODYecology*, the sleeping state at night determines the depth of colour of a hand-spun merino lambswool thread that is drawn at a constant rate across a portable dyeing machine. When a person is soundly asleep, the thread dives deeply into the indigo dye bath; when they are lightly sleeping or stirring, it is shallow or skims the surface. In the day, the resulting variegated coloured thread is woven into a blanket, a physical embodiment of the ontological experience of sleep. Each blanket is generated through the process over approximately a month of sleeping and weaving.

Energy and Co-Designing Communities (ECDC) 2010–14

Bill Gaver, Mike Michael, Tobie Kerridge, Liliana Ovale, Matthew Plummer-Fernandez, Alex Wilkie, and Jennifer Gabrys

ECDC is a co-design project developed as a collaboration between the departments of sociology and design at Goldsmiths, University of London. Funded by the Research Councils UK (RCUK) Energy Programme, *ECDC* is one of several projects that explore how the UK can reduce its energy consumption by 80 percent before 2050.¹ *ECDC*'s co-design process combines a number of methodologies, including fieldtrips, workshops, and the distribution of cultural probe packs in communities such as Whitehill Bordon Eco Town and Low Carbon Living Ladock. The workshops explore questions, such as "How is people's engagement with technology affected by who they trust?" In 2014, *ECDC* distributed *Energy Babble* devices to thirty homes. The *Energy Babble* is a domestic appliance that broadcasts comments and sounds sent from a network of *Babbles*. The *ECDC* team describes the *Energy Babble* as "familiar, playful, [and] ambiguous" and designed to provoke debate within communities.² With the *Babble* network device, *ECDC* explores the imaginative and emotional dimension of energy usage and what they call the "potential" of people's imaginative application of technologies.³

¹ ECDC, "Background: Energy and Co-Designing Communities," www.ecdc.ac.uk.

² ECDC, "Process: Energy and Co-Designing Communities," www.ecdc.ac.uk/#.

³ ECDC, Oxford poster, October 2011, www.ecdc.ac.uk/pdfs/ECDC-oxford-poster.pdf.



Bill Gaver, Mike Michael, Tobie Kerridge, Liliana Ovale, Matthew Plummer-Fernandez, Alex Wilkie, and Jennifer Gabrys *ECDC Energy Babble* 2014.

Avena+ Test Bed: Agricultural Printing and Altered Landscapes 2013

Benedikt Groß

Avena+ Test Bed: Agricultural Printing and Altered Landscapes by Benedikt Groß is a speculative design that explores the possibilities of “agricultural printing”.¹ The experiment applies algorithms to partition and create an environmentally beneficial structure into a standard biomass/energy production field. The *Avena+ Test Bed* field was used to plant over 11.5 hectares (320 x 920 metres) in Unterwaldhausen, southern Germany. Eighty-five percent of the field was planted with oats (*Avena Sativa*) and 15 percent of the field was planted with eleven different flowers and herbs.² *Avena+ Test Bed* won Best Concept and Best Student Project in the 2014 IxDA Interaction Awards and received an Honorary Mention at Prix Ars Electronica 2014. As an example of speculative design, Groß’s work addresses a contemporary challenge and engages people to think critically about their interactions with design, as well as providing a viable model for sustainable agriculture.

¹ David Herring, “Precision Farming,” *Earth Observatory* (January 2001), www.earthobservatory.nasa.gov/Features/PrecisionFarming/.

² Benedikt Groß, “Avena+ Test Bed—Agricultural Printing and Altered Landscapes,” June 2013, http://benedikt-gross.de/log/2013/06/avena-test-bed_agricultural-printing-and-altered-landscapes.

Design-Antropologisk Innovations Model/The Design Anthropological Innovation Model (DAIM) 2008–10

Joachim Halse, Eva Brandt, Brendon Clark, and Thomas Binder

The Design-Anthropological Innovation Model (DAIM) is a large-scale research project developed in the Scandinavian model of participatory design. It investigated user-driven innovation in waste disposal and recycling services in Herlev, Høje Tåstrup and Brøndby, three suburbs of Copenhagen. Subtitled “Rehearsing the Future”, *DAIM* was informed by anthropological field studies. These included documenting observations about waste practices by garbage collectors in their daily work and by community residents who use domestic waste management. *DAIM* developed the User-Driven Innovation Box with which Vestforbrænding and other utility companies can reflect on and renew recycling processes and customer communication. *DAIM* was funded by the Danish Government’s program for user-driven innovation and was selected by INDEX AWARD (2009) as an example of Danish design that aims to improve life.¹

¹ Index, “Democratic Waste Management,” 26 June 2009, www.designtoimprovelife.dk/democratic-waste-management.

Public Meeting 2013

Brad Haylock

Public Meeting instantiates the democratic paradox of relational art and the conflicting value systems through which images and material goods circulate. The poster formed part of an exhibition that operated as a site for the assembly of a fleeting public, while questioning the very motive of a public meeting and the dual possibilities of art-object and vulgar utility.

The Phenology Clock 2014–15

Natalie Jeremijenko and Tega Brain

The Phenology Clock is an exploratory experimental artwork that introduces the concept of time in the visualisation of annual ecological cycles between January and December. The work conveys a sense of the cycle of time in specific geographic locations. It is an open-source software tool that enables the visualisation of phenology data. *The Phenology Clock* displays the temporal dimensions of blooming, budding, fruiting, and migration events of local urban organisms. It re-presents time as seasonal interdependent processes.¹ Taking phenology data for a particular site, the software visualises temporal data within the visual conventions of a clock. Observable seasonal events are arranged in concentric annual circles, one for each species. The clock face is described by the Project X Clinic, led by Natalie Jeremijenko, as showing perennial flowering plants in the innermost circle, with the insects, butterflies, bees, and moths that are dependent on these in the next surrounding set of circles.² The set after that show birds dependent on insectivorous resources, then local trees, with the outermost circle showing large biomass and habitat provisions. Information about Australian climate change is available at Climatewatch (www.climatewatch.org.au). Jeremijenko, Brain, Hornbein, and de Mello Bueno are developing additional plugins to realise these data as calendar updates and social media feeds. The clocks show phenology patterns for local ecosystems.

¹ *The Phenology Clock*, www.phenoclock.org/.

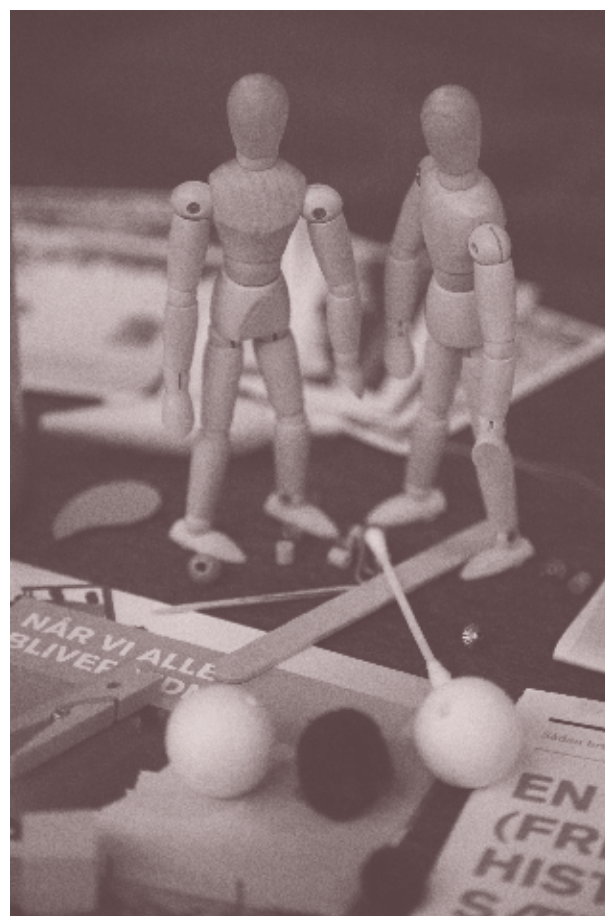
² Natalie Jeremijenko, “Farmacy X: The Phenological Clock,” www.projectsclinic.com/phenological-clock/.



Benedikt Groß Avena+ Test Bed: Agricultural Printing and Altered Landscapes 2013. Photograph: Florian Vögtle/Stefan Eigner (photographers); Hermann Benkler (pilot).



Brad Haylock Public Meeting 2013.



Joachim Halse, Eva Brandt, Brendon Clark and Thomas Binder, Design-Antropologisk Innovations Model / The Design-Anthropological Innovation Model (DAIM). Photographer: Tobias Titz.



Natalie Jeremijenko, Tega Brain, Jake M Richardson, Fran Gallardo, Black Li, Drew Hornbein and Thiago de Mello Bueno The Phenology Clock 2014–15.



Volker Kuchelmeister, Laura Fisher, Jeong Greaves, Jill Bennett, *Veloscape v.5-v.7* 2014–15. Photographer: Laura Fisher.

Veloscape v.7 2015

Volker Kuchelmeister, Laura Fisher, Jeong Greaves, Jill Bennett

Veloscape v.7 is an experimental visualisation of physiological data logged during a Sydney cyclist's traverse of the city. The audience experiences the rider's visual perspective as they cycle from Newtown to Central Station, while the animated data track represents the rider's movement through the streets and the degree of variation in the time interval between heartbeats. For the purposes of this data-visualisation experiment, heart rate variability has been used to draw a connection between numerical physiological data, location, and states of emotional arousal/anxiety. The video thus models a method of visualising the cyclist's experience that reflects on their state of mind rather than mapping infrastructure of risk factors. *Veloscape v.5* was presented as an interactive installation at the City of Sydney's Sydney Rides the Night event as part of the Sydney Rides Festival, October 2014. A stationary bicycle controlled the video playback, allowing audience members to 'ride' through the city with the cyclist and explore the physiological response to heavy traffic, parks, and so on.

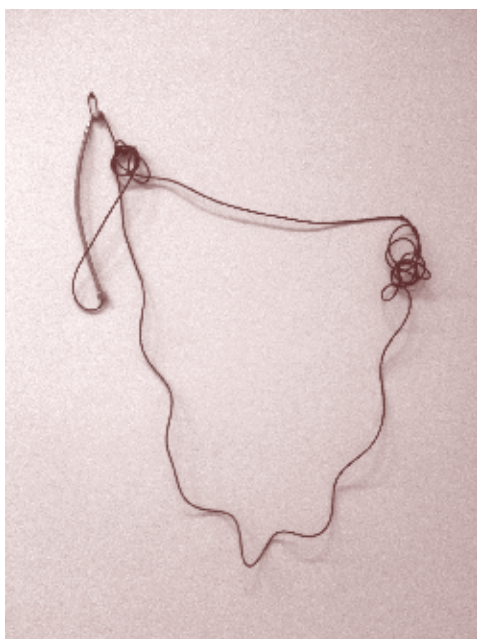
Myths of the Near Future 2: Equipment 2010–15

Katherine Moline

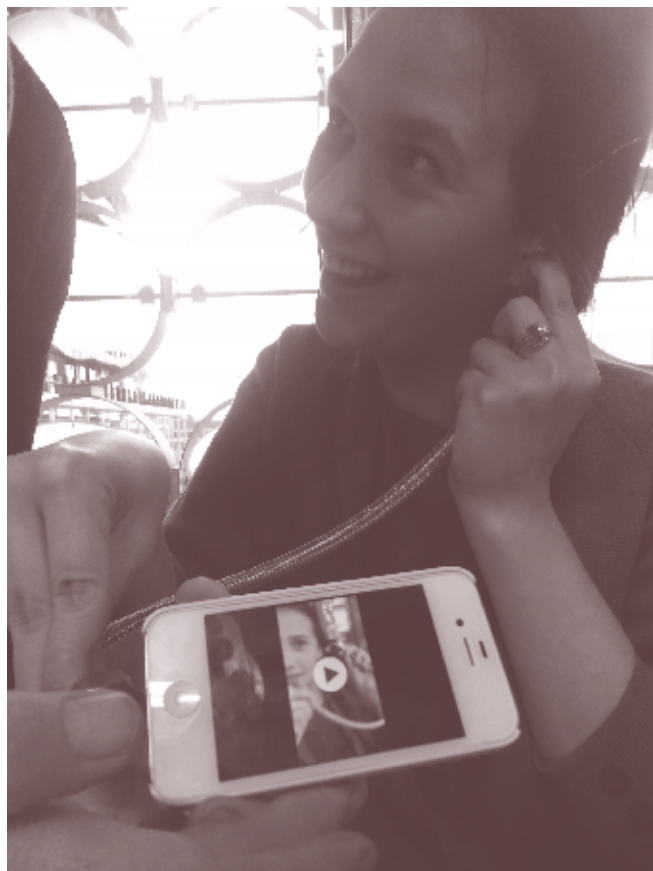
The series titled *Myths of the Near Future* draws together Moline's artwork multiples, her repurposing of processes and materials in design for art-making, and her curatorial focus on experimentalism.¹ It extends Moline's projects and exhibitions concerned with media consumption, participatory art and design, and speculative critical practice.² *Myths of the Near Future 2: Equipment* is the gear with which Moline's participatory workshops explore privacy and identity in media art and design. A sequence of user-generated processes reflects on the excesses of mobile media that are cultivated both individually and collaboratively. Via collective storytelling, an ethnographic method in design, participants share stories about changing social interactions via mobile phone as they collaboratively create visual narratives about mobile experiences. The outcome of interacting with and composing found materials, the resulting artworks make legible selected mobile interactions, and the fleeting emotions they invoke. The workshop considers whether the phone is the prompt and the evidence of our social activity and communication practices, or perhaps even our sole design instrument.

¹ *Print Volume 1 Artists Books* (Sydney: Power Gallery of Contemporary Art, University of Sydney, 1987) is the catalogue for an exhibition curated with Kay Campbell in 1987 that was based on Moline's Bachelor of Visual Arts and Graduate Diploma at Sydney College of the Arts, University of Sydney. See http://www.yuillcrowley.com/blog/?page_id=349 and <http://redobjects.unsw.edu.au/people/dr-katherine-moline/> for Moline's recent artworks.

² Katherine Moline and Teena Clerke, eds., *Brushed with Care: A Model for Participatory Design in the Community Context* (Kingswood, NSW: University of Western Sydney, 1998); K. Moline, *Connections: Experimental Design* (Paddington, NSW: Ivan Dougherty Gallery, 2007); and K. Moline, *Cross Pollination*, (Sydney: UNSW COFA Space, 2012).



Katherine Moline *Myths of the Near Future 2: Equipment* 2010–15. Photographer: Glenn Wallace; Design+Ethnography+Futures.



ZXX typeface 2012

Sang Mun

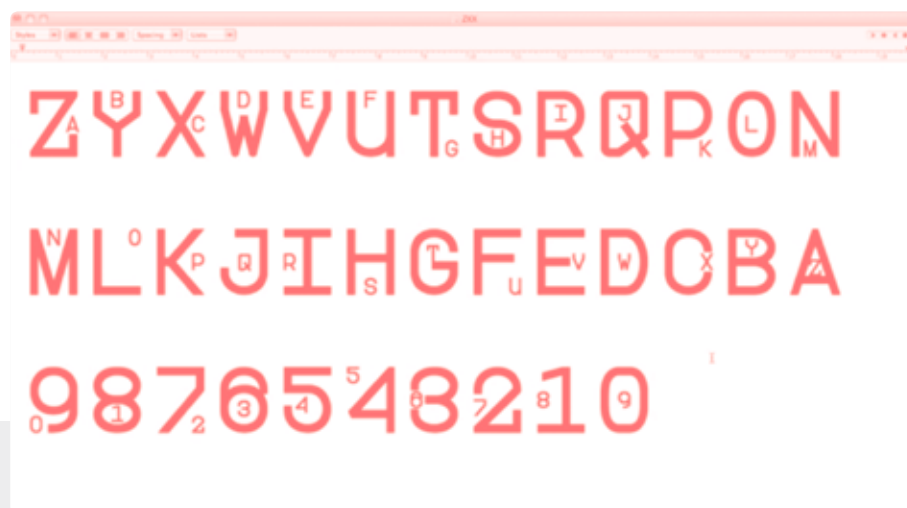
ZXX is a typeface that comments on domestic surveillance programs designed from the perspective of a former contractor with the US National Security Agency. Sang Mun's professional expertise in extracting information from defence targets and gathering vital Signal Intelligence information provides background for his articulation of *unfreedom* through typeface designs that critique the surveillance of American citizens. The project started with a following question: How can we conceal our fundamental thoughts from artificial intelligences and those who deploy them? Mun thus created a typeface that would be unreadable by text-scanning software (whether used by a government agency or a lone hacker), misdirecting information and sometimes not giving any at all.¹

¹ Sang Mun, "Making Democracy Legible," *Walker Art Centre (blog)*, 20 June 2013, <http://blogs.walkerart.org/design/2013/06/20/sang-mun-defiant-typeface-nsa-privacy/>.

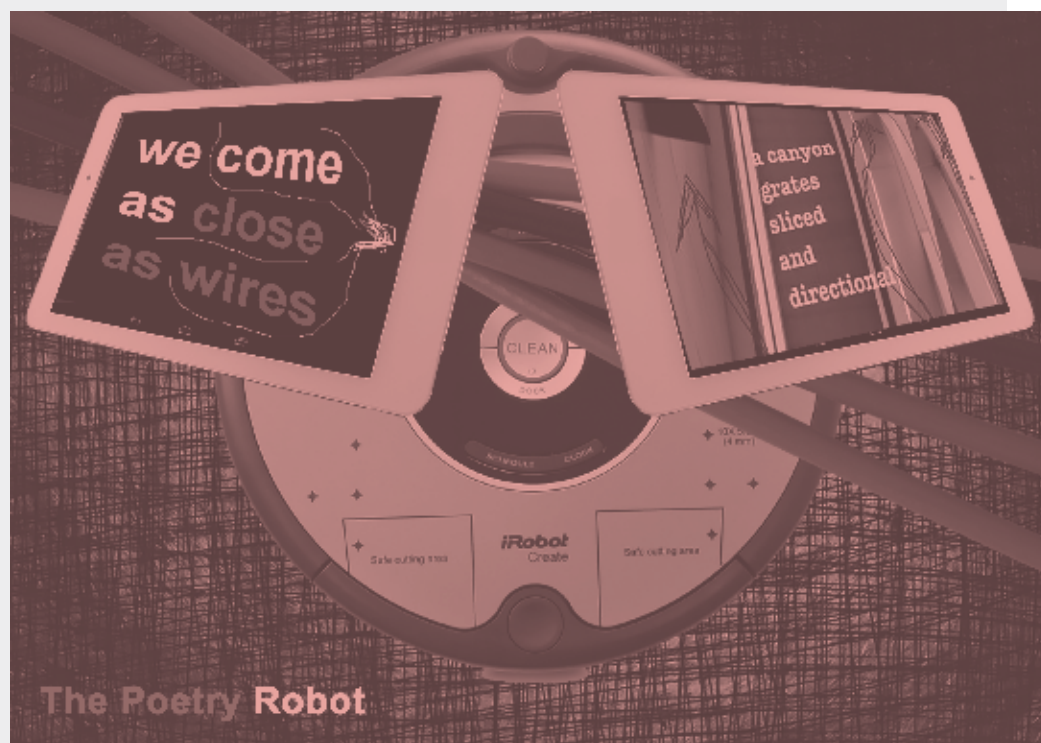
Autonomous Kinetic Poetry Robot 2015

Jason Nelson

The ability to venture towards, avoid, and then circumvent unwanted obstacles, while delivering poetic content, might be considered evidence of sentient, semi-intelligent life. And yet the whirling motor hum coming from a small circular robot with arms and touch-screen hands, roaming around the room is only a half-life. The *Poetry Robot* doesn't understand or even care about gallery visitors as it broadcasts LCD poems. It doesn't know or feel bonded to its digital poet creator. Its only desire is to move, avoid, and feed/recharge. It is an automaton that prompts questions about whether its purpose is to add magic to the everyday or to warn us of a future where life is redefined in binary and servos.



Sang Mun ZXX typeface 2012.



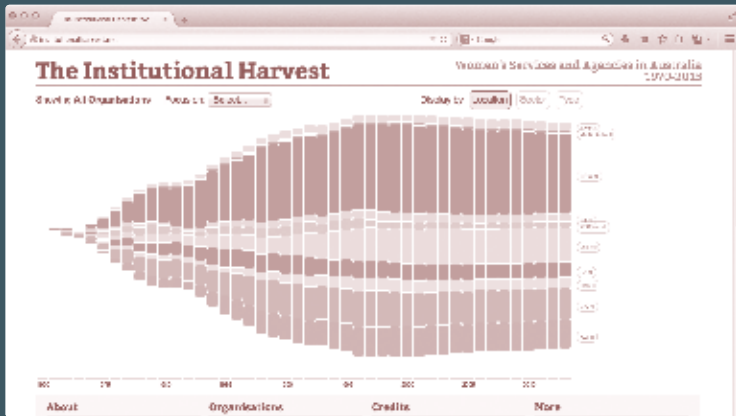
Jason Nelson *Autonomous Kinetic Poetry Robot* 2015.



Tristan Schultz Drawing 'Together' Indigenous Futures 2015.



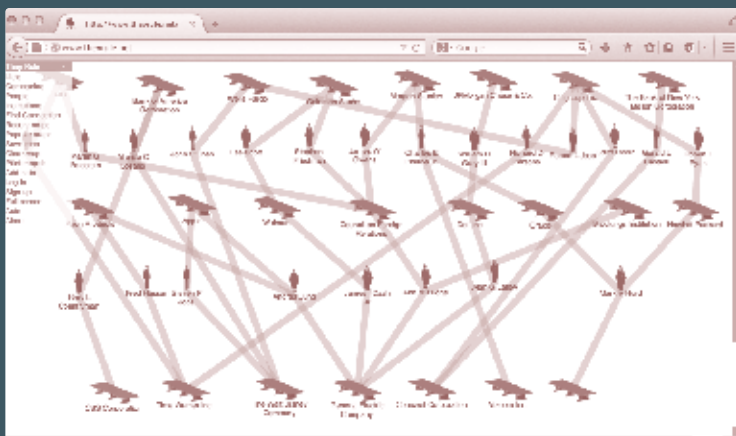
Anouk Wipprecht Robotic Spider Dress 2.0 (Intel Version) 2014.



Mitchell Whitelaw The Institutional Harvest 2013.



Noam Toran If We Never Meet Again 2010.



Josh On/LittleSis.org They Rule 2001/11.

They Rule 2001/2011

Josh On/LittleSis.org

Through active participation, *They Rule* enables the user to explore and expose the interlocking members of the US ruling class as they appear on the boards of the most powerful US companies.¹ *They Rule* asks questions about who runs American society, and economy, and for whose benefit. While acknowledging that the data is not completely accurate—an almost impossible ambition as there is no one source of accurate data—*They Rule* draws on the free database of LittleSis.org, which details connections within the US elite class.

¹ See www.theyrule.net.

Drawing 'Together' Indigenous Futures 2015

Tristan Schultz

Drawing 'Together' Indigenous Futures maps out knowledge patterns emerging from yarnning sessions with a group of Australia's leading Aboriginal & Torres Strait Islander academics, held at GNIBI (College of Indigenous Australian Peoples), Southern Cross University, Lismore, in 2013. Participants discussed what cultural competency looks like from Indigenous perspectives, and how it might be activated as an event in process across a university. The cognitive map overlays commonalities-in-difference between a Canadian First Peoples knowledge, Australian Indigenous Knowledge, and a Western conception of transformative knowledge. In this, the map becomes a 'mediating object' for future intercultural conversations. Four kinds of drawing together are shown: drawing together with the hand; drawing together assemblages; drawing together mess; and performing drawing 'together'. The culturally sensitive parts of the information mapped have been concealed for public exhibition. This concealment is itself a commentary on which actors and networks are deliberately left out of maps, whose history is entangled with colonial histories and agendas. The project corrects the selective cartography of colonialism and revives what was destroyed in that process. The project reinscribes what has been omitted and excluded, and critiques assumptions about the neutrality of information design.

If We Never Meet Again 2010

Noam Toran

If We Never Meet Again is a film sequence screened on two monitors that explores fantasies and narratives about interactions with and through design. As an artwork engaged with experimental design, the work implicitly questions design conventions and the broader issue of narrative in history, cinema and literature. In a choreographed car sequence and face-to-face meeting, an assignation between two men evokes films about Cold War espionage. It explores design as an event and what Noam Toran calls an "exchange of 'things' by men".¹ Through a range of cinematic movements, including aerial shots and more conventional close-ups, the work combines emotional intimacy and high-tech with design. Reminiscent of scenes in films such as *North by Northwest* by Alfred Hitchcock (1959) and the novel *The Spy Who Came in from the Cold* by John le Carré (1963), *If We Never Meet Again* interrupts expectations of the cool demeanor of espionage. It implicitly comments on perceptions that design is the product of an omniscient view on the part of designers.

¹ Noam Toran, "If We Never Meet Again," www.noamtoran.com/NT2009/projects/if-we-never-meet-again.

The Institutional Harvest 2013

Mitchell Whitelaw

The data visualisation *The Institutional Harvest* shows changes to Australian women's services and agencies, such as parliamentary bodies and health providers, between 1970 and 2013.² *The Institutional Harvest* represents research on women's services and agencies by Merrindahl Andrew and is part of a larger project led by Marian Sawyer and Sarah Maddison.² Like the website DataViva by MIT Media Lab and César Hidalgo, Mitchell Whitelaw's *The Institutional Harvest* is committed to making government information accessible. These interactive engagements with big data extend to a wide range of possibilities and show how the principles of open-source are currently transforming policy decisions based on the digitisation of information.

¹ Mitchell Whitelaw, *The Institutional Harvest*, www.institutionalharvest.net/.

² Sarah Maddison and Marian Sawyer, eds., *The Women's Movement in Protest, Institutions and the Internet: Australia in Transnational Perspective* (New York: Routledge), 2013.

Robotic Spider Dress 2.0 (Intel Version) 2014

Anouk Wipprecht

Inspired by the territorial displays of arachnids, the *Robotic Spider Dress 2.0 (Intel Version)* by designer and electronic wearables artist Anouk Wipprecht is a mechatronic dress. Using an Intel Edison chip, the *Robotic Spider Dress* uses biosignals and learned threat detection to defend the wearer's personal space. Mechanical arms extend and retract as a response to external stimuli, making it a truly intuitive system. As people approach, the wearer's own breath helps to signal the defence posture of the robotic arms. The speed of the approach will also feed into defensive behaviour; approach quickly and the arms will aggressively posture, but approach in a leisurely fashion and the arms will gently greet you.¹

¹ Hep Svadja, "Anouk's New Creation: Intel Edison Based Spider Dress 2.0," *Make (zine)*, 19 December 2014, <http://makezine.com/2014/12/19/anouks-new-creation-the-spider-dress/>.

CREDITS

Community-Centred Innovation: Co-Designing for Disaster Preparedness

The *Community-Centred Innovation* codesigning workshops have been coordinated for the Southern Otways, Victoria; Kingborough, Tasmania; Kuring-gai Council, NSW; the Aboriginal and Torres Strait Islander (ATSI) community in Cherbourg, Queensland; and the City of Greater Bendigo, Victoria. The workshops are supported by the Australian Emergency Management Institute.

The Sensitive Aunt Provotype

The Sønderborg Participatory Innovation Research Centre (SPIRE) at the University of Southern Denmark; the International Centre for Indoor Environment and Energy (ICIEE) at the Technical University of Denmark (DTU); window and skylight manufacturer Velux; indoor climate designers WindowMaster, Nilan; engineering consultancy Grontmij; and insulation company Saint-Gobain Isover.

FOOTwerk: Improvisations in Gender, Sound and Space

Concept and soundtrack: Alexandra Murray-Leslie
Videography: Kenneth Feinstein

Cast: Marla Bendini, Melissa Logan and Alex Murray-Leslie (Chicks on Speed)

Hair/Make-Up: Andrea Claire

Fashion: Dinu Boddiciu

FOOTwerk collaborators include: Dr. Sam Ferguson, Dr. Andrew Johnston, Max Kibardin, Jeffrey Hong and Dr. Jonas Robinson. The project is made possible through the kind support of: STRETCHSENSE Auckland, SymbioticA, The University of Western Australia, ADM Nanyang Technological University & NTU Centre for Contemporary Art, Singapore, ADRI Pennsylvania State University, Creativity and Cognition Studios, The University of Technology Sydney and Australia Council for the Arts.

Tension 13 and Tension 17

Timothy Kendall Edser acknowledges the assistance of the following people:

Tension 17: Tim Pasmore, Carl Warner, Brooke Ferguson, Metro Arts, and Trevor Edser.

Tension 13: Daine Singer and Amanda De Simone.

Energy and Co-Designing Communities (ECDC)

ECDC acknowledges the contributions by all participants engaged with the project, including ECDC communities: Reephram Green Team, Transition New Cross, Greening Goldsmiths, Low Carbon Living Ladock and Grampound Road, Meadows Partnership Trust, Energise Hastings, Whitehill Bordon Eco Town; the communities: Awel Aman Tawe Community Energy, Baywind Energy Co-operative Ltd, BedZed, Isle of Eigg Heritage Trust, Hook Norton, Lammas Low Impact Initiative, Low Carbon Berwick, Low Carbon West Oxford, Moneyless Village, Muswell Hill Sustainability Group, One Planet Sutton, Sanford Housing Cooperative, Sustainable Blacon, Tinkers' Bubble, Transition Town Brixton, Transition Town Peckham and Transition Town Totnes; and resources provided by: Community Energy Initiatives, Energy Savings Trust, Department of Energy & Climate Change, Forum for the Future, Grassroots Innovations Blog, Nanode, Bristol Energy Network and Electric.

Avena+ Test Bed—Agricultural Printing and Altered Landscapes

Benedikt Groß acknowledges the generous support of the following people and organisations: Maximilian Count of Königsegg-Aulendorf, administrator Hofgut Stefansreute Herbert Geser, project engineer Lorenz Riegger, Roland Groß, tractor driver Stefan Riegger, farming contractor LU Peter Boos and, for agricultural advice, Norbert Menz, Professor Dr Klaus Schmieder and Professor Dr Martin Dieterich. Groß also thanks Florian Vögtle for aerial footage, and Hermann Benkler, pilot. The agricultural machinery was generously provided by AGCO, Massey Ferguson, HORSCH Maschinen GmbH and Agrom Agrar and Kommunaltechnik GmbH.

Design-Antropologisk Innovations Model/The Design Anthropological Innovation Model (DAIM)

DAIM is the result of interdisciplinary collaboration by the Danish Design School, (SPIRE) at the University of Southern Denmark, the waste incineration company Vestforbrænding, Danish design studios including 1508, 3PART and Arkitema, and international partnerships with MakeTools, SWECO FFNS and Ergonomidesign.

The Phenology Clock

The Phenology Clock was developed at xProjects and Farmacy, subsidiaries of the Environmental Health Clinic at New York University led by Natalie Jeremijenko, <http://www.environmentalhealthclinic.net/>. The Environmental Health Clinic is a clinic and lab modelled on other university health clinics. It approaches health from an understanding of its dependence on external local environments, rather than on the internal biology and genetic predispositions of individuals.

Veloscape v.7

Concept and Realisation: Volker Kuchelmeister.
Production: Laura Fisher, Sabrina Sokalik.
Cyclist and Design: Alison Groves. GIS
Consultant: Jeong Greaves

If We Never Meet Again

Writer, director: Noam Toran; director of photography: Per Tingleff. *If We Never Meet Again* was funded by a grant from the Engineering and Physical Sciences Research Council and the Royal College of Art, London. The work is part of the collection of the Israel Museum, Jerusalem.

The Institutional Harvest

The data for *The Institutional Harvest* were collected as part of a research project undertaken by Merrindahl Andrew at the Australian National University, which contributed to a larger project led by Marian Sawyer and Sarah Maddison. The work was funded by the Australian Research Council: Discovery grant number DP0878688. Information design by Mitchell Whitelaw. Research assistance was provided by Gillian Evans, Veronica Oxman, and Sarah Spiller.

Robotic Spider Dress 2.0 (Intel Version)

Anouk Wipprecht acknowledges the support of Intel Edison in the development of *Robotic Spider Dress 2.0 (Intel Version)*.

1. *BIOdress: A Body-Worn Environmental Interface (2014)*, Sara Adhitya, Beck Davis, Tricia Flanagan Raune Frankjaer, Zoe Mahony

A transdisciplinary group, Adhitya, Davis, Frankjaer, Flanagan, and Mahony first met during the Haptic Interface workshop developed by Flanagan and hosted by the Academy of Visual Arts, Hong Kong Baptist University in December 2014. With collective experience that spans fashion, art, sculpture, textiles, technology, and urban design, the group began their collaboration through a common interest in sustainability, the environment, and the role technology plays in envisioning alternative futures. The group's collaborations focus on developing wearables beyond the Anthropocene, and through their exploration of public activism via data democratisation. Between them, the artists have exhibited works in Germany, Australia, Ireland, Italy, China, Hong Kong, the US, and the UK.

Sara Adhitya is an urban designer with a multidisciplinary background in environmental design, architecture, urbanism, music, and sound design. She collaborates with design, research, governmental, and non-profit organisations around the world towards improving the sustainability of our cities. Awarded a European doctorate in the Quality of Design of architecture and urban planning, her research is concerned with the multisensorial design of our environment in space and time. She is currently a Research Associate at the Universal Composition Laboratory of the Civil, Environmental and Geomatic Engineering department, University College London.

www.cege.ucl.ac.uk/arg/ucl-squared/

Beck Davis is an industrial designer whose research centres on early stage design, examining design teams and how they collaborate and respond to complex problems. She is a Lecturer and the Convenor of the Product Design Major at the Queensland College of Art, where she teaches digital technologies and product design studio. She is currently researching "Mediated Interactions: How Technologies Shape Experiences and Creative Collaborations" funded by Griffith University New Researcher Grant. Previously, Beck was a research fellow and lecturer at QUT, where she taught and researched sustainability, design methods, work integrated learning, design-led innovation and social change. Beck is a Council Member for the Design Institute of Australia, and manages the Queensland Education and Research Portfolio.

www.hellobeckdavis.com

Tricia Flanagan began her career as a fashion and costume designer, but has been working as a practicing artist and academic since 1996. Since completing a Master's degree in Public Art and New Artistic Strategies in 2003, her practice has focused on the public sphere through the mediums of site-specific sculpture, social sculpture, sound sculpture, sculptural installation, wearables and performance installation. She established the Wearables Lab at the Academy of Visual Arts at Hong Kong Baptist University in 2009 where she currently works. Flanagan has a PhD (Public Art) from the University of Newcastle and has received awards, published and exhibited internationally, and is represented in private and public collections in Australia, Ireland, Germany, Italy, and China. Flanagan also sits on the programming committee for the Design, User Experience and Usability (DUXU) initiative in the context of Human Computer Interaction International (HCII).

www.triciaflanagan.com

With a background in architecture and photography, **Raune Frankjaer** was a self-employed artisan for several years before becoming involved in new media. She holds a Master of Arts in Intermedia Design from the Trier University of Applied Sciences, Germany. Frankjaer's work investigates the application of a digital wearable interface that acts as a technological mediator between physical and social environments. Deeply invested in the pursuit of a more sustainable and liveable world for all, she sees the role of design and designers as creating new and better solutions to the products

and processes presently available. Currently, she teaches Spatial Media and Digital Artefacts at Trier University of Applied Sciences while spending her spare time exploring new ways of applying technology to expand the boundaries of human perception and connectivity.

www.frankjaer.de

Zoe Mahony has been a fashion designer, business CEO and educator. Mahony has extensive Australian and European experience in RTW markets with roles in design, production, ethical supply chains, and marketing. She is a seasoned educator, teaching design thinking, communication, and new technologies. Her current research focus is in the multidisciplinary field of Innovative Wearables in Fashion Design that combines science, technology and fashion. Recipient of the Churchill Fellowship, Mahony has written on design studio practice in England, Belgium, and France. In addition she engages in curating, exhibiting, and freelance design projects. These include collaboration with established and emerging artists/designers such as Luke Sales from Romance Was Born, Australian fashion icon Linda Jackson, paper artist Benja Harney, performance artists Justin Shoulder and Dalas Delaforce, and guerilla knitter Michelle McCosker. Most recently, she contributed to the *Haptic Interface* 2014 exhibition with the *Applause Collar*, a responsive wearable.

2. *Community-Centred Innovation: Co-Designing for Disaster Preparedness (2009–14)*, Yoko Akama

Dr Yoko Akama is Senior Lecturer in communication design in the School of Media and Communication, RMIT University. She undertakes research to explore the role and agency of design to tackle social issues. Her expertise is in human-centred design that sees design as a scaffold that facilitates communication, engagement and co-creation with people and leads to transformative change. Her current research project with the Bushfire CRC explores design methods to strengthen community resilience in mitigating bushfire risks. This has recently won her two awards from Good Design Australia: the Good Design Award, best in the category for service design and the Patron's Prize for Good Design. Her research interests extend into the networks she actively organises, including the Design for Social Innovation and Sustainability (DESIS) network in Melbourne and the Service Design Network Melbourne.

www.designresearch.rmit.edu.au/contact/researcher-directory/yoko-akama

3. *Run That Town: A Strategy Game with a Twist (2013)*, The Australian Bureau of Statistics, Leo Burnett Sydney and Millipede Creative Development

runthattown.abs.gov.au

The Australian Bureau of Statistics (ABS) is Australia's national statistical agency and has played a critical role in Australian society. The ABS, which has been operating for over one hundred years, provides official statistics on a wide range of economic, environmental, and social issues to encourage informed decision making, research and discussion within governments and the community. The ABS also plays an important leadership and coordination role in relation to the statistical activities of other official bodies, both within Australia and internationally. The ABS is committed to developing new and innovative statistical information solutions to ensure it remains a world leader among national statistical agencies.

Leo Burnett Sydney is an advertising agency in Australasia that has won Agency of the Year twelve times on a local, regional, and global level in the last five years. Leo Burnett Sydney was the first Australian agency to rank in the Top 10 Most Creative Companies internationally and was the first to win both the prestigious Global Cannes Lion for Effectiveness and Media Agency of the Year. In 2013, the agency was the second most awarded digital company in Australia. Millipede Creative Development design and develop games, applications, services, and experiences for mobile platforms, physical spaces, and the web.

4. *The Sensitive Aunt Provotype (2012)*, Laurens Boer and Jared Donovan

www.sdu.dk/en/om_sdu/institutter_centre/c_spire/projects/indoor_climate

Dr Laurens Boer is Assistant Professor at IT University Copenhagen. His research interest is in the areas of speculative design and experience design. He studied Industrial Design at the Eindhoven University of Technology, the Netherlands. In 2012, he completed his PhD at the SPIRE Centre with a dissertation titled "How Provotypes Challenge Stakeholder Conceptions in Innovation Projects". Boer has worked with provotypes as ethnographically based and technically robust artefacts that deliberately challenge stakeholders. By building provocative prototypes and deploying them at family homes and industrial organisations, he aims to bring together practices of critical design, design ethnography, and organisational change.

Dr Jared Donovan is a Lecturer and researcher in Interaction Design in the Creative Industries Faculty at QUT, Brisbane. His main research interest is in finding better ways of interacting with computer technologies with the goal of making computer technologies easier to use, more enjoyable and more respecting of people's abilities for skilled physical movement. In particular, he has investigated the use of gesture as a way for people to interact with computer interfaces without the need for computers and mice. Donovan is also keenly interested in Participatory Design approaches and finding better ways to involve stakeholders in the design process. Before joining QUT, he worked for four years at the SPIRE centre for Participatory Innovation at the University of Southern Denmark where he researched the use of 'provotypes' (provocative prototypes) to spark discussion and debate. Donovan co-edited *Design and Anthropology* with Wendy Gunn (Surrey: Ashgate, 2012).

5. *Tile Town (2015)*, Andrew R. Brown

<http://explodingart.com/tiletown/>

Professor Andrew R. Brown's research focuses on augmenting our creative intelligence through interactions with computer systems; he has published widely and won numerous research grants around this topic. His research interests include algorithmic music, computational arts, music technology, creativity support systems, interaction design, and music education. After Andrew studied classical and jazz piano at The University of Melbourne, he worked as a keyboard player in touring bands through the 1980s. During this time, an interest in electronic keyboards grew into a passion for music technology more broadly. This passion has fuelled an academic career in teaching and research at The University of Melbourne, QUT, the Australasian CRC for Interaction Design and now Griffith University. He is involved in a range of digital arts practices and his current work focuses on interactive media and algorithmic design. His performance practice is laptop live coding.

6. *Ortho (2015) and Cups for Alice (2015)*, Bettina Bruder

Bettina Bruder is currently completing her PhD at UNSW Art & Design. Her research explores two questions: How can sensitivity be induced to disclose an alternative understanding of our world beyond scientific rationality and economic efficiency? and What different qualities can be evoked through art and design practice that are otherwise excluded by analytical, scientific and economical approaches? Her research builds on her extensive professional background in information design and advertising gained as a communications designer for global brands in Germany.

7. Circus Oz Living Archive (2011–14)

<http://circusarchive.net/>

RMIT University: project director/lead researcher David Carlin, lead researchers Adrian Miles, Peta Tait (La Trobe University), James Thom, Laurene Vaughan, Jeremy Yuille; interaction designer and developer and PhD candidate Reuben Stanton; video server administrator, database designer and PhD candidate Lukman Iwan; project manager Laetitia Shand; video digitisation and research associate Kim Baston; research assistants Ana Vaz and Melissa Toh; and research associate/project co-founder Jane Mullett. Circus Oz: Mike Finch, Linda Mickleborough, Tim Coldwell, Peter Williams (Deloitte Digital), Robyn McGregor, Clare McKenzie, Anni Davey, Mel Fyfe, Jaclyn Booton, Olivia Blackburn, Erica Heller-Wagner, Jono Hawkes and Scott Grayland.

Associate Professor David Carlin is a writer, director and Program Director of Media within the RMIT School of Media and Communication. He brings to the *Circus Oz Living Archive* project experience as a film and video documentary maker and former show director of Circus Oz. He has taught and led projects at RMIT focused on social and participatory media, and has scholarly and creative publications in the field of memory, narrative and media archives. Associate Professor Carlin's documentaries, short films and plays have been performed and screened internationally, and he has published a book of creative non-fiction, *Our Father Who Wasn't There* (Brunswick: Scribe, 2010).

Adrian Miles is a Senior Lecturer in New Media and currently the Program Director of the Bachelor of Media and Communication Honours research studio at RMIT. He has also been a senior new media researcher in the InterMedia Lab at the University of Bergen, Norway. His academic research on hypertext and networked interactive video has been widely published and his applied digital projects have been exhibited internationally. Adrian has extensive expertise in online video with extensive publications in the field and is one of the first video bloggers in the world. His expertise extends to social media from both a practical and theoretical point of view.

Professor Peta Tait, from the Theatre and Drama Program at La Trobe University, is an academic scholar and playwright with an extensive background in theatre, dramatic literature, performance theory, and creative arts practice. Her research focuses on the interdisciplinary humanities fields of emotions, body theory, and gender identity. She has published extensively on circus and is one of the few scholars writing on new circus and, in particular, on Circus Oz. Tait has worked with Dr Jane Mullett on Circus Oz materials over a number of years. She brings her knowledge of circus research, practices, and archives to the *Circus Oz Living Archive* project. Tait has authored four monographs and further publications include articles in *Theatre Journal*, *Modern Drama*, and *Performance Research*. She also writes plays and contemporary performances.

Jamie Thom is a computer scientist with extensive experience in text retrieval, document databases, and image/video retrieval. His main contribution to *Circus Oz Living Archive* was the development of technology that supports content-based video retrieval combined with community tagging.

Laurene Vaughan: See Curator Biographies, inside back cover.

Jeremy Yuille is an interaction designer, digital media artist and academic with a background in digital art, music, performance, and architecture. Yuille is a co-founder of the Media and Communication Design Studio at RMIT where he undertakes collaborative research with the Australasian CRC for Interaction Design (ACID). He is also a certified scrum-master and was director of the Interaction Design Association.

Lukman Iwan is a PhD candidate in the School of Computer Science and Information Technology at RMIT University. His doctoral research on content-based retrieval systems is part of an ARC Linkage project was applied to Circus Oz videos. Iwan's retrieval system includes a video collection server, metadata video database, and web-based application software.

Reuben Stanton completed a PhD in the School of Media and Communication at RMIT University. His doctoral research in the *Circus Oz Living Archive* project explored interaction design and development in the design and creation of a prototype digital archive as both a pragmatic design act and as a research activity. Stanton is interested in the role that interaction design can play in creating new, useful, and engaging digital archives, and how the possibilities of technology are utilised to enable different ideas of what an archive could be.

8. Chicks on Speed Presents FOOTwerk: Improvisations in Gender, Sound and Space (2015) by Alexandra Murray-Leslie in collaboration with Kenneth Feinstein and Dr. Sam Ferguson, featuring Marla Bendini and Melissa Logan

Alexandra Murray-Leslie is a PhD candidate, Creativity and Cognition Studios, The University of Technology, Sydney and co-founder of Chicks on Speed, an internationally renowned art ensemble. Alex's current practice-based research is fashion acoustics: wearable musical instrument design for live-art performance focusing on the development of computer-enhanced foot wearables for aerial dance practice and musical composition with possible health applications.

9. NO QUO Attempts (2015), DesignInquiry

DesignInquiry is a non-profit educational organisation devoted to researching design issues in intensive team-based gatherings. An alternative to the design conference, it brings together practitioners from disparate fields to generate new work and ideas around a single topic. The organisation was founded by Peter Hall, Melle Hammer, and Margo Halverson in Portland, Maine, USA, in 2004. The DesignInquiry *NO QUO* team was: Zack Kaiser, Steve Bowden, Rachele Riley, Peter Evonuk, Molly Renda, Maia Wright, Jonathan Novak, Emily Luce, Chris Fox, Ben Van Dyke, Anita Cooney, Alice Lee, Tricia Treacy, Rebecca Tegtmeyer, Pouya Jahanshahi, Neil Patel, Margo Halverson, Joshua Unikel, Denise Gonzales Crisp, Charles Melcher, Arzu Ozcal, Amanda Thomas, and Adam Taylor.

10. Tension 13 (2007) Tension 17 (2013), Timothy Kendall Edser

Timothy Kendall Edser is a contemporary artist based in Melbourne. He completed his Bachelor Fine Arts (Visual Arts) with Honours at QUT, Brisbane, in 2002. Edser works across performance, installation, sculpture and new media to tease out ideas that encompass the formation of masculine identity. His on-going and evolving *Tension* series of performance-based works often challenge the physicality of his body in relation to exhibition spaces in which he is working.

<https://www.metroarts.com.au/artist/timothy-kendall-edser/>

11. BODYecology (2015), Tricia Flanagan

Tricia Flanagan began her career as a fashion and costume designer, but has been working as a practicing artist and academic since 1996. Since completing a Master's degree in Public Art and New Artistic Strategies in 2003, her practice has focused on the public sphere through the mediums of site-specific sculpture, social sculpture, sound sculpture, sculptural installation, wearables and performance installation. She established the Wearables Lab at the Academy of Visual Arts at Hong Kong Baptist University in 2009 where she currently works. Flanagan has a PhD (Public Art) from the University of Newcastle and has received awards, published and exhibited internationally and is represented in private and public collections in Australia, Ireland, Germany, Italy, and China. Flanagan also sits on the programming committee for the Design, User Experience and Usability (DUXU) initiative in the context of Human Computer Interaction International (HCII).

www.triciaflanagan.com

12. The Energy and Co-Designing Communities (ECDC) research team includes Bill Gaver, Mike Michael, Tobie Kerridge, Liliana Ovale, Matthew Plummer-Fernandez, Alex Wilkie, and Jennifer Gabrys

www.ecdc.ac.uk

Professor William (Bill) Gaver leads the Interaction Research Studio at Goldsmiths, University of London. His research on design-led methodologies and innovative technologies for everyday life led him to develop an internationally renowned studio bringing the skills of designers together with expertise in ubiquitous computing and sociology. With the studio, he has developed approaches to design ranging from cultural probes to the use of documentary film to help assess peoples' experience with designs. He has pursued conceptual work on topics such as ambiguity and interpretation, and produced highly finished prototypes that have been deployed for long-term field trials. He has exhibited internationally at venues such as the Victoria & Albert Museum, Tate Britain, and New York's Museum of Modern Art. He has published over seventy articles and is an elected member of the Computer-Human Interaction (CHI) Academy. Professor Gaver currently holds an ERC Advanced Investigator Grant and is principal investigator of ECDC.

Professor Mike Michael is a sociologist of science and technology. His research interests include the relation of everyday life to technoscience, biomedical innovation, and culture, the interface of the material and the social, and process methodology. Recent research has addressed the complexities of HIV pre-exposure prophylaxis clinical trials (with Marsha Rosengarten), the interdisciplinary use of sociological and speculative design techniques to explore energy demand reduction (with the ECDC project team), and the development of an 'idiomatic methodology'. He has authored six books and over one hundred papers and chapters. Michael is a co-editor of *The Sociological Review*.

Tobie Kerridge is based at the Interaction Research Studio, University of London. His PhD thesis explores the mixing of speculative design and public engagement with science and technology in two public engagement projects: biojewellery and material beliefs. Kerridge has helped develop an innovative mixed method approach to design research, with a recent focus on community and energy reduction. Kerridge is co-convenor of MA Design: Interaction Research, which offers a research-based approach to interaction design. Kerridge's work has been exhibited internationally, including the Museum of Modern Art in New York and the Design Triennial in Beijing.

Liliana Ovale is a product and furniture designer based in London. Since graduating from the Royal College of Art, she has been running her own practice developing design projects in Mexico, Italy, and London. Ovale is research associate at the Interaction Research Studio, Goldsmiths College, University of London and she is a member of the London based design collective Okay Studio. Ovale designs objects where the functional and the aesthetic components are accompanied by a reflection of contemporary life aspects. She pays special attention to inquiring themes such as the 'incomplete' and the 'unrehearsed' observed in the urban context. Ovale was presented the Talent Award by the British Council in 2006 and the Mexican Clara Porset Special Award in 2008.

Matthew Plummer-Fernandez is a British/Colombian artist and designer who makes work that critically and playfully examines new sociocultural entanglements with emerging technologies. His current interests span bots, algorithms, automation, copyright and filesharing. Based in New Cross, London, he is also a research associate and technologist at the Interaction Research Studio at Goldsmiths College, University of London.

Dr Alex Wilkie has worked at the intersection between design and science and technology studies (STS) for over twelve years. Wilkie studied interaction design at the Royal College of Art and was awarded his PhD in sociology, based on an ethnographic study of user-centred design. He was an original member of govcom.org, a group who designed and developed the Issuecrawler, an online tool for tracing and visualising controversy on the web and has been a member of the Interaction Research Studio at Goldsmith, University of London since 2006. Wilkie is particularly interested in exploring computational technology and the politics of participation in issue-oriented design as well as inventive research methods and research through design. He currently works on topics including the design of energy and climate change, healthcare informatics and technological interventions into domestic living. Wilkie is also committed to developing sociological accounts of design practice, drawing on his engagement with developments in actor-network theory and process sociology.

Prior to joining the Department of Sociology at Goldsmiths, University of London, **Dr Jennifer Gabrys** was Senior Lecturer and Convenor of the MA in Design and Environment in the Department of Design at Goldsmiths, University of London. Her research investigates environments, material processes and communication technologies through theoretical and practice-based work. Projects within this area include a recently published book, *Digital Rubbish: A Natural History of Electronics* (University of Michigan Press, 2011), which examines the materialities of electronic waste; and a written study currently underway on citizen sensing and environmental practice, titled *Program Earth: Environment as Experiment in Sensing Technology*. Gabrys is currently Principal Investigator on the European Research Council starting grant, Citizen Sensing and Environmental Practice: Assessing Participatory Engagements with Environments through Sensor Technologies.

13. *Avena+ Test Bed—Agricultural Printing and Altered Landscapes* (2013), **Benedikt Groß**

Benedikt Groß is a Stuttgart-based speculative and computational designer who focuses on relationships between people, their data, technology and environments. He is particularly interested in antidisciplinarity and speculating on the possibilities of the near future in design visualisations. Groß's working mode can be described as thinking through making with software. Groß received the IxDA 2014 Best Student and the IxDA 2014 Best Concept for his final RCA graduation projects, *Avena+ Test Bed* and the Excellence Award (with Joseph K. Lee) at the 18th Japanese Media Arts Festival for The Big Atlas of LA Pools. He is co-author of *Generative Design* (Princeton Architectural Press, 2010) and his work has been published in *Wired*, *CAN*, *Form*, *Page*, *Weave*, and *Infoethics*. He has exhibited internationally at the Open Data Institute, Ars Electronica, V2_ and the New Institute and the Node Festival. Groß is currently a visiting tutor for Digital Culture and Data Visualization at the Hochschule für Gestaltung Schwäbisch Gmünd. www.benedikt-gross.de

14. *The Design-Anthropological Innovation Model (DAIM)* research team includes **Joachim Halse, Eva Brandt, Brendon Clark, and Thomas Binder**

www.dkds.dk/Forskning/Projekter/DAIM

Joachim Halse is an Associate Professor at School of Design, The Royal Danish Academy of Fine Arts. He works in the transdisciplinary field of anthropology and design, where he experiments with building a productive interaction between anthropological studies of everyday life and design oriented articulations of new possibilities. The innovation potential of everyday life is one of the areas that Halse explores in his research. He is interested in expanded user-involvement where the user is not simply included in the final stages of the design process to testify to the ease of use of a given product and is instead taken seriously as a dialogue partner for design and development throughout the whole design process.

Professor Eva Brandt leads The Codesign Research Centre (CODE) at the School of Design, The Royal Danish Academy of Fine Arts. Her research is closely associated with practice and is typically carried out in cooperation with companies, design agencies, and/or partners from the public sector. Her research approach is experimental, and she often draws on theories from other disciplines such as anthropology, ethnology or the world of theatre and other artistic disciplines. Brandt's work mainly involves interdisciplinary projects that involve a wide range of stakeholders such as researchers, designers, technicians and end-users. The design approaches, methods, and tools that she develops are dialogue oriented and usually playful, experimental and explorative in nature. They belong in the category that is often referred to as co-design and are essentially about developing various ways of 'rehearsing the future'. She co-edited the book *Rehearsing the Future*, which is an outcome of the DAIM project.

Brendon Clark is the studio director and a senior researcher at the Interactive Institute Stockholm. He completed his PhD exploring the emerging field of design anthropology and developed a framework for organisational negotiations at the front end of design research projects. His research interests lie at the intersection of anthropology and design (Participatory Design) with a nod toward business and innovation. He focuses on exploring collaborative practices and full-bodied interaction that seek to re-think linear processes of research, analysis, design, intervention, and evaluation—exploring the implications for knowledge generation and knowledge transfer in praxis settings. Brendon worked on the DAIM project while completing post-doctoral research in design anthropology at SPIRE at the University of Southern Denmark's Mads Clausen Institute for Product Innovation (MCI). He teaches PhD and MA-level courses in Scandinavia (e.g., Umeå Institute of Design, University of Southern Denmark, Chalmers & Göteborg University) and he is a project leader for projects such as Lead User Innovation Lab, Language as Participation, and Språkskap.

Professor Thomas Binder leads The Codesign Research Centre (CODE) at the School of Design, The Royal Danish Academy of Fine Arts. Binder's research is about understanding how design processes generate new knowledge, and how an emphasis on knowledge building and learning can connect the designer's classic design skills with more open design processes based on dialogue with users, for example in the fields of service design, strategic development and change processes. Binder has worked with design laboratories, where designers and non-designers collaborate on 'rehearsing the future' at the intersection between the known and the unknown. Through workshops and other activities where designers and stakeholders co-create future oriented experiments, a learning zone is established in which the possible comes within reach. For this learning zone, Binder has developed methods and approaches for collaborative inquiries such as a documentary video that serves as design material, design games, and scenario and prototyping methods based on improvisation. These design laboratories were used in the DAIM project.

15. *Public Meeting* (2013), **Brad Haylock**

see Curator biographies, inside back cover.

16. *The Phenology Clock, Natalie Jeremijenko (xClinic) and Tega Brain*

www.phenoclock.org

Dr Natalie Jeremijenko directs the Environmental Health Clinic, is an Associate Professor in the Visual Art Department, New York University, and has affiliated faculty appointments in the schools of Computer Science and Environmental Studies. With a background in biochemistry, engineering, neuroscience and the history and philosophy of science, Jeremijenko was included in the Whitney Biennial of American Art (1997 and 2006), and the Cooper Hewitt Smithsonian Design Triennial (2006). In 2010 Neuberger Museum, SUNY Purchase (2010) curated a retrospective exhibition of Jeremijenko's work, titled *Connected Environments*. Recent exhibitions and performances include *Cross Species (xSpecies) Adventure Club* at the Dublin Science Gallery (2012); *Alter Nature: Designing Nature – Designing Human Life – Owning Life*, Z33, Hasselt (2011); *(Re)Designing Nature*, Kuenstlerhaus, Vienna (2010–11); and, with Bureau of Inverse Technology, was exhibited in *Mortality* at the Australian Centre for Contemporary Art (2010). Jeremijenko has been named one of the most influential women in technology by Fast Company (2011) and one of the inaugural top young innovators by *MIT Technology Review* (1999).

Tega Brain is an artist, researcher and environmental engineer from Sydney, Australia. Her work rethinks the infrastructures, interfaces and institutions that structure our relationship with larger environment systems. She has made experimental infrastructures, speculative services and data driven installations. She is currently Visiting Assistant Professor of New Media at Purchase College, State University of New York. She previously taught at the School for Poetic Computation (SFPC) in New York and was in residence at the Environmental Health Clinic at New York University. She has recently exhibited at the Dublin Science Gallery and at Eyebeam Centre for Art and Technology, New York (2013). In 2013, Brain was awarded a Creative Australia Fellowship for early career artists from the Australia Council for the Arts.

17. *Veloscape v.7* (2014–15) was developed by a research team led by **Volker Kuchelmeister, Jeong Greaves, Laura Fisher, and Jill Bennett**

www.niea.unsw.edu.au/research/projects/curatingcities-social-and-ecological-potential-publicart-practice

Volker Kuchelmeister is a media artist, researcher, digital media specialist, and expert in place representation. He is a Lecturer at UNSW Art & Design. Kuchelmeister focuses on cinematography, experimental imaging, spatial mapping, interactive systems, immersive visualization, and mediation in the performing arts while exploring the boundaries of the cinematic image. He was a founding member of several media-based research labs, including ZKM Centre for Art and Media Karlsruhe, iCinema Centre at the UNSW's iCinema Centre and the iCinema Lab at the National Institute for Experimental Arts. Kuchelmeister's art projects have been exhibited internationally and he has been appointed Research Fellow at iCinema Centre for Interactive Cinema Research and the National Institute of Experimental Arts.

Jeong Greaves is a research assistant at NIEA. She completed a Bachelor of Art Theory with Distinction at the College of Fine Arts, UNSW. She is currently completing a Bachelor of Science in hydrogeology and Environmental Impact Assessment, and a Bachelor of Arts majoring in Philosophy and History.

Dr Laura Fisher trained as a sociologist and art historian and is currently based at the Sydney College of the Arts, University of Sydney. She is pursuing a range of research interests around art in the public domain, visionary outdoor environments, and the ways in which art's meanings are shaped by social and political change. She has published on Aboriginal art, public art and visual culture, with recent articles in *Cultural Sociology* and *Visual Studies*. In addition to her work with Veloscape: a Curating Cities Project, which is exploring the emotional and sensory dimensions of urban cycling, Laura is currently developing her manuscript *Aboriginal Art: Ethics and Politics* (Anthem Press), based on her doctoral thesis, and collaborating with Gay McDonald on a book project about the Aboriginal Art Board's program of touring Aboriginal art exhibitions overseas between the 1970s and 1990s.

Professor Jill Bennett is Professor of Experimental Arts and founding Director of the National Institute for Experimental Arts (NIEA,) and Associate Dean Research, UNSW Art & Design. A writer and curator, she has published widely on visual culture, new media and transdisciplinary aesthetics. Her research is particularly focused on aesthetics, broadly understood as the analysis of sensory-affective perception and interaction, and its practical deployment both in art/exhibitions and in social and scientific areas beyond traditional art practice. Her most recent book is *Practical Aesthetics: Events, Affects and Art After 9/11* (London: IB Tauris, 2012), for which she received the St and Francine Clark Fellowship (Clark Institute, Massachusetts) in 2009 and an ARC Discovery Grant. Her previous books include *Empathic Vision* (Stanford UP, 2005), a study of art and traumatic events and several monographs on new media art. Bennett leads the Curating Cities ARC Linkage Project with the City of Sydney council, Object: Australian Centre for Design, University of Cincinnati and Carbon Arts. Growing out of the 2010 HotHouse symposium on art and ecology at the Sydney Opera House, Curating Cities develops experimental public art, promoting urban sustainability. As part of this project, Bennett is coauthoring, with Saskia Beudel, *Curating Sydney* (UNSW Press, 2014), the Database of Eco-Public Art, and is leading Veloscape, with Volker Kuchelmeister and Laura Fisher.

18. Myths of the Near Future (2010–15), Katherine Moline

See Curator biographies, inside back cover.

19. ZXX typeface (2012), Sang Mun

Sang Mun is a graphic designer based in Seoul, Korea. He received his BFA in Graphic Design from RISD with honors, where he was awarded the Bo Bernstein Award. A 2012/13 Design Fellow at the Walker Art Center, Sang's works have been featured in CNN, *Wired*, Fast Company, etc. In 2012, Sang was selected as *PRINT* magazine's "20 under 30: New Visual Artists". Sang lives and works in Seoul as a designer and an art director.

<http://www.sang-mun.com/>

20. Autonomous Kinetic Poetry Robot (2015), Jason Nelson

Dr Jason Nelson is a Senior Lecturer of Net Art and Electronic Literature at Queensland College of Art, Griffith University. His research interests range from digital creative writing to data visualisation, artistic video games and interactive digital interfaces to locative writing. Jason is most widely known as a creator of digital poetry and art-games, with his work reaching millions through his web portals including <http://www.digitalcreatures.net>. His work has been widely exhibited in galleries and journals, including FILE, ACM, LEA, ISEA, SIGGRAPH, and ELO. Over the past five years, he has been commissioned to create works for institutions including New Media Scotland, Turbulence in New York City, the Electronic Literature Organization at MIT, the Australia Council of the Arts, the State Library of Queensland, Arts Queensland, among others. Jason was short-listed for the Premiere's Book Awards, Western Australia, Digital Narrative Category, 2014 and won the Jury Award (top peer-review score) at Annual Electronic Literature/Art Conference Exhibition, West Virginia University, 2012, and Paris Biennale Media Poetry Prize, 2011.

21. They Rule (2001/11), Josh On / LittleSis.org

www.theyrule.net

Josh On designs interactive mapping systems including The Anti-War Game, Communiculture, They Rule, and Exxon Secrets. These projects provide a glimpse of some of the relationships of the US ruling class (*They Rule*) and the connections between the giant Exxon corporation and anti-environmental think tanks. He believes computers have become political, and that designing computer networks is a political act. His research focuses on how much and what sort of structure should be imposed upon users in order for them to be able to communicate and perform effectively, as well as experiment with the technology. Josh has worked with Futurefarmers, a group of diverse practitioners aligned through an interest in making work that is relevant to the time and place surrounding us.

22. Drawing 'Together' Indigenous Futures (2015), Tristan Schultz

Tristan Schultz is an interdisciplinary designer and lecturer in visual communication design at Queensland College of Art, Griffith University. His research interests are related to the connections between Design and Colonialism, with a particular focus on new openings combining Design Futures and Australian Aboriginal cultural production. Previously, Tristan was a research collaborator with Southern Cross University as part of the Indigenous Musical Journeys project and with GNIBI College of Indigenous Australian Peoples as part of the Indigenous Futures project. Tristan is a panel member of the Australia Council for the Arts (a council of the Australian Government) as an Aboriginal and Torres Strait Islander Arts Strategy Panel Member.

23. If We Never Meet Again (2010), Noam Toran

Noam Toran is a graduate and tutor at Royal College of Art, London, and HEAD, Geneva. His work involves the creation of intricate narratives developed as a means to reflect upon the interrelations of history, cinema, literature, and memory. The works are most often exhibited as sculptures, films and installations. The works examine how fictions influence the collective consciousness, be it as history, myth, or memory forming. This is realised through an original way of deconstructing and reconfiguring cinematic and literary codes, conventions and structures, and weaving them with historical materials, thereby complicating the relation between artifact and artifice. His work is exhibited, screened and published internationally and is part of the collections at the Museum of Modern Art, New York, Frac Îlede-France, the Israel Museum and the Centre National des Arts Plastiques (CNAP).

www.noamtoran.com

24. The Institutional Harvest (2013), Mitchell Whitelaw

<http://mtchl.net/the-institutional-harvest/>

Associate Professor Mitchell Whitelaw is an academic, writer and practitioner with interests in new media art and culture, especially generative systems, data-aesthetics, and digital cultural collections. His work has appeared in journals including *Leonardo*, *Digital Creativity*, *FibreCulture*, and *Senses and Society*. His current work spans materiality, data and culture, with a practical focus on creating generous interfaces for digital heritage. He has worked with institutions including the State Library of NSW, the National Archives, and the National Gallery of Australia, developing innovative interfaces to their digital collections. Mitchell is currently an Associate Professor in the Faculty of Arts and Design at the University of Canberra, where he leads the Digital Treasures program in the Centre for Creative and Cultural Research. He blogs sporadically at *The Teeming Void*.

25. Robotic Spider Dress 2.0 (Intel Version) (2014), Anouk Wipprecht

Dutch-based fashion-tech designer and innovator **Anouk Wipprecht** applies Microcontrollers in the emerging field of "fashion-tech"; a rare combination of fashion design combined with engineering, science and interaction/user experience design. She has created an impressive body of tech-enhanced designs and technological couture with systems around the body that tend towards artificial intelligence; projected as 'host' systems on the human body. Her work has featured in collaborations with the Black Eyed Peas, SuperBowl, and Eurovision. She is the brainchild/curator of the *TECHNOSENSUAL: Where Fashion Meets Technology* exhibition, with attached Artist in Residency program to stimulate the grow of fashion-tech projects coupling fashion designers and engineers together, that took place in Vienna, Austria, over the summer of 2012.

<http://anoukwipprecht.nl/projects.html>

CURATOR BIOGRAPHIES

Experimental Thinking/Design Practices was curated by Katherine Moline, Peter Hall, Beck Davis, Laurene Vaughan, and Brad Haylock for Griffith University Art Gallery, Queensland College of Arts, Brisbane. The curators thank Cameron Tonkinwise for contributing an essay to the exhibition catalogue.

Dr Katherine Moline is a Senior Lecturer in research practices and Postgraduate Coordinator: Admissions for Masters by Research and PhDs at UNSW Art & Design. As an artist, researcher and curator, Katherine explores the cross-overs between avant-gardism in visual art and contemporary experimental design and their reformulation of the strategies of historic artistic avant-gardes, and the social pacts of design. Current projects include a series of experimental workshops on social practices with mobile telephones, and a number of ongoing systems artworks. Her artworks are courtesy Yuill Crowley Gallery, Sydney.

Dr Peter Hall is a design writer whose research focuses on critical visualisation and mapping as a design process. He is a Senior Lecturer and the Program Director of Design at Queensland College of Art, Griffith University, where he teaches design history and interdisciplinary studio practice. He is currently researching interactive visualisation tools for predictive assessment of risk as part of the European TRESPASS project. Previously, Peter was senior lecturer in design at the University of Texas at Austin and a lecturer at Yale University School of Art. His books include *Else/Where: Mapping—New Cartographies of Networks and Territories* and *Tibor Kalman: Perverse Optimist*.

Dr Beck Davis is an industrial designer whose research centres on early stage design, examining design teams and how they collaborate and respond to complex problems. She is a Lecturer and the Convenor the Product Design Major at the Queensland College of Art, Griffith University, where she teaches digital technologies and product design studio. She is currently researching "Mediated Interactions: How Technologies Shape Experiences and Creative Collaborations" funded by a Griffith University New Researcher Grant. Beck is a Council Member for the Design Institute of Australia, and manages the Queensland Education and Research Portfolio.

Dr Laurene Vaughan is Professor of Design at RMIT University. She is an artist, writer, curator, and designer who is fascinated by the ways that people design and make place. Her practice spans a spectrum of embodied domains of making and performance, from walking interventions to the design of collaborative digital platforms. She is a founding member of the Arts and Cartography Commission in the International Cartographic Association. Her recent projects include The Stony Rises Project, a curatorial exploration of vernacular practices, immigration, modes of dwelling and the crafting of landscape in the making of place. This included an associated book *Designing Place* (Melbourne Books, 2010).

Dr Brad Haylock is a designer, publisher and academic, who is unwaveringly interested in the politics of things. He is an Associate Professor of Design in the School of Media and Communication at RMIT University, Melbourne, where he manages the Master of Communication Design program and jointly leads (with Professor Laurene Vaughan) the Design Futures Lab research group. He is founding editor of Surplus, an independent publisher of printed matter (mostly books) pertaining to critical and speculative practices across art, design, and theory.

PROVOCATEUR

Dr Cameron Tonkinwise is Director of Design Studies at the School of Design at Carnegie Mellon University, Pittsburgh. His research focuses on what designers can learn from philosophies of making, material culture studies, and sociologies of technology.

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Griffith Artworks

Angela Goddard, Director

Naomi Evans, Curator

Karen La Rocca, Administrator

Rob Corless, Exhibition and Public Programs Coordinator

Liveworm Studio

Queensland College of Art, Griffith University

David Sargent, Creative Director

Jacqui Becker, Designer

Griffith Centre for Creative Arts Research

Professor Ross Woodrow, Director

Evie Franzidis, Editor

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Installation detail of *The Phenology Clock* by Natalie Jeremijenko, Tega Brain, Jake M Richardson, Fran Gallardo, Black Li, Drew Hornbein and Thiago de Mello Bueno at RMIT Design Hub, May 2015. Photographer: Tobias Titz.