fusion

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fusion is an international, online scholarly journal for the communication, creative industries and media arts disciplines. Co-founded by the Faculty of Arts and Education, Charles Sturt University (Australia) and the College of Arts, University of Lincoln (United Kingdom), ***fusion*** publishes refereed papers, creative works and other practice-led forms of output.

Issue 13
Object Subject

Editor

Craig Bremner (Charles Sturt University)

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Editorial: Object Subject

Craig Bremner[1]

The conference that formed the basis of this issue of *fusion* came to my attention in 2016 when the organisers asked me to support a funding application. By early 2017 their application had been successful and after a bit of negotiation we agreed that *fusion* would publish select papers from the conference proceedings and, in exchange, I would join the organising committee.

The conference was concerned with what DESIGN Canberra called "design writing" and it started life with the title *Tomorrowland: The future of design writing is already here* aiming to "bridge scholarly and popular writing in a digital age". It then became *Object | Subject – Speaking about and through Design* to "explore the way design speaks to us, and the way we speak about design." In the end it was staged as *Object Subject*. The sequence of titles tells us a lot about design writing as an idea. In addition, the call for papers "[began] with a premise that writing is essential to the future of design" and the host, Craft ACT: Craft and Design Centre, expanded its idea to include "hope" to also foretell the future of craft.

Design was born from the promise of a better tomorrow. From *what-was* design promised to project the possible future scenarios of *what-might-become*. This optimism was best expressed in the 1956 exhibition "This is Tomorrow" staged by the Independent Group in London. While that project never seemed to make much impression on design history the promise of a better tomorrow has remained part of design's rhetoric. As I write in June 2018 the V&A Museum in London has just opened an exhibition titled "The Future Starts Here: 100 projects shaping the world of tomorrow".

It's clear the future has been starting for a long time, quite possibly beginning with Plato's *Republic*, but without doubt design's dependency on the future-possible for its rationale was borrowed from the concept of "Utopia" (first published 500 years ago). While utopia has subsequently been corralled into the literary genre of satire it is manifest literally in design's desire to project *what-might-become*. What is remarkable about design's now long-term future promise has been its realisation not in any tangible form (it is impossible) but in text. So the history of design seems to indicate that design is better equipped to narrate futures than give them shape. This is even more evident in a recent offshoot from the discipline called "design fiction", which seems satisfied to chronicle the future scenarios made possible by design. Here both history and fiction collide to imply "that the possibility exists for fiction to function in truth" (Foucault 1980, 193).

✉ Professor Craig Bremner: cbremner@csu.edu.au

[1] Faculty of Arts and Education, Charles Sturt University, Australia

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In a similar vein the writer Gerald Murnane characterises the author of what he describes as fiction as "wanting to grasp the paradox that has exercised him (the author) during much of his lifetime: by his wanting to understand how the so-called actual and the so-called possible – what he did and what he only dreamt of doing – come finally to be indistinguishable in the sort of text that we call true fiction" (Murnane 2014, 140).

Having taken the decision to consider writing and designing as complementary actions, or as the conference describes, how we "explore the way design speaks to us, and the way we speak about design", writers of design will run into the residual theoretical problems that Foucault and Murnane outline. This might be another of the great challenges for design – how to establish legitimacy plus be understood! The challenge is complicated by the digital proliferation of design now crafted for illustration and promotion via online media that is generating the production of more *things-for-online-media* and the generation of more *media-for-design*. As such, design writing now produces more design writing and has become a thing (object) in itself.

As I have been saying, design's sentimental attachment to *what-might-become* that has been dependent on different forms of writing (now apparently fictitious) make the conference promise "that writing is essential to the future of design" extremely prophetic. In fact, it would seem that the future of design might be entirely dependent on the future of design writing. If so, the essays in this issue of fusion carry a responsibility not often associated with design.

The paper by Gyungju Chyon – *Embodying Betweenness: Designing Ecological Artefacts through Imperfection, Impermanence and Incompleteness* – deals with designing ecological objects; objects she describes as designed and made via uncommon mediums – wind/light – to establish an ecology of relations. At the same time her paper presents a very good case for a professional practice reflecting on its own practice and learning about itself. Her paper describes two original experiments in an interesting story that is told well. She describes finding a way of "doing" something from the process of making two ephemeral objects, and this makes a very original contribution to Object/Subject dialogue. Citing the dizzying complexity of Timothy Morton's arguments as evidence for the existence of "an ecology of relations" is not easy, especially when in this case the weather has become the "hyperobject" and one project relies on "hypo-objects" (microscopic vapour). The two evocative objects Gyungju Chyon has designed "explore the way design speaks to us, and the way we speak about design".

The authors of the paper – *Design Practice, Things and Language: An Iterative Collaboration* – Thomas Lee and Berto Pandolfo – are both well versed in their fields: literary theory and industrial design respectively. The topic of their paper makes the transition from "objects" into the expanding field of "things"; a field whose critical commentary is increasing in depth and breadth. Therefore, it is an important topic and the authors make sense in their skim across the surface (and skimming the surface is a very wise tactic). Their contribution to the discussion on "thing theory" is original and therefore helpful for design writing where making objects is an increasingly shrinking percentage of the things designers do. In fact, the way in which the matter and manner

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of the paper – the object (as subject) and the text (as object) – have been designed has been crafted with skill and ingenuity. They employ an original method that is a nice balance of literary theory at work with a very clever design "object" that I would classify in what is a difficult genre for literature and a rare genre for design: namely, irony.

The paper *Pride of Place: Co-design, Community Engagement and the Victorian Pride Centre*, authored by Gene Bawden and Alli Edwards, describes an important encounter between academics from Monash University's Design School just formed into a new research entity – the XYX Lab – and Victorian (Australia) LGBTIQA organisations. As far as community engagement goes it revealed two things: that design has an increasingly relevant role to play and that design has a lot of existing "objects" that can be adapted to engagement – and by objects I mean both thoughts and methods that are "designerly". The paper contributes a fresh approach to its subject – gender identification and equity – and it does this through an important encounter. At the time of the engagement the Pride Centre was yet to be designed and the XYX Lab had not designed anything making their experience potentially challenging. The paper describes their success and at the time of writing the Centre has a design and the XYX Lab continues to operate. In the increasingly rich field of "engagement", design could learn a lot from the vast number of other disciplines that have been engaging with people for a long time. The XYX Lab have positioned themselves carefully to break through the problem of the inevitability of all design thinking that is still mistakenly pointing to the preferred situation. It must be remembered that all design thought and action does nothing but change behaviour and one person's preferred behaviour is another's inequality.

Last for comment but the first paper of the conference is the keynote by Alice Rawsthorn – *Design Rewritten* – in which she explores the role of design writing in her own introduction to design (an almost accidental encounter), and how its influence on her perceptions of design, and its cultural potency, has evolved over the years. Amongst Alice's many insights is her use of her own trajectory as a writer to explore the way design first spoke to and continues to speak to her, and how she uses this conversation to speak to us about design.

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Design Rewritten

Alice Rawsthorn[1]

Abstract

This is a keynote given by Alice Rawsthorn at the Object Subject conference in Canberra on 10 November 2017. In Design Rewritten, she explored the role of design writing in her own introduction to design, and how its influence on perceptions of design, and its cultural potency, has evolved over the years.

Keywords

Design; Design History; Design Writing

I discovered design thanks to someone who wrote about it unusually eloquently and compellingly. It was when I was an art history student at Cambridge University in the late 1970s. The course itself was a disappointment, being rather stuffy with no opportunity to study my principal areas of interest: modern and contemporary art. But the faculty library, which we shared with the architecture department, was fantastic, with an incredible selection of books and subscriptions to cultural journals from all over the world. None of which I'd known of before.

Among them was the Italian architecture magazine *Domus*, which was then edited by the architect and designer, Alessandro Mendini, who I later discovered had co-founded the Radical Design and Global Tools movements in the early 1970s.

His friend and fellow designer, Ettore Sottsass, was *Domus*' art director. Mendini described design as an eclectic, dynamic, richly contextualised discipline, which was at the intersection of art, politics, film, literature, music, fashion, architecture, psychology and style culture. All the things I was obsessed by then, and still am. Thanks to Mendini's writing, and that of the friends he roped in to write for *Domus*, I was introduced to design as a bold, gutsy, ambitious, provocative and intellectually dynamic discipline, which was embedded in every aspect of our lives.

Who wouldn't be seduced by that? Having read up on design and design history as much as I could as a student, I continued to do so in the first half of my career as a journalist for the *Financial Times*, where I wrote about corporate affairs, politics, economics, and worked as a foreign correspondent in Paris. I often spent days off – and occasionally whole weeks of holiday – reading up on design history in the National Art

✉ Alice Rawsthorn: alice@alicerawsthorn.com

[1] www.alicerawsthorn.com

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Library at the Victoria & Albert Museum in London and the Bibliothèque des Arts Décoratifs in Paris. When, in 2000, I decided to focus my career by writing about a subject that really fascinated me, I chose design, convinced that I should approach it in Mendini's eclectic spirit.

I was unbelievably lucky to have discovered design through Mendini. Not only was his vision of design exceptional in its ambition and sophistication, design was seldom mentioned – let alone discussed – in 1970s cultural discourse. The unofficial barometer of cultural significance in the United Kingdom at the time was the 1975 book *Keywords: A Vocabulary of Culture and Society* written by the Welsh political scientist Raymond Williams. Design did not appear in the original 1975 edition, showing how poorly it was regarded by intellectuals like Williams. Nor was it in the revised edition, published in 1983. Williams added words such as "anarchism", "anthropology", "ecology", "ethnic", "liberation" and "technology", but not "design".

Mendini wasn't entirely alone in writing about design with the same rigour and subtlety as Williams and his circle analysed literature and politics, but he was a rare exception, because few people considered design to merit serious consideration. The dearth of analysis left design prey to muddles and clichés. None of which is surprising, because design is a complex and elusive phenomenon that has meant many different things to different people at different times and in different contexts.

The more meanings design has acquired, the slipperier and more elusive it has become, not least because so many of its newer interpretations sit so oddly with the older ones. The late design historian John Heskett summed up the confusion in the phrase: "design is to design a design to produce a design". Nonsensical though this sounds, it is grammatically correct. Heskett also compared the difficulty of defining design to doing the same for "love". It was a brilliant allusion because both words have acquired so many layers of meaning that they can be read very differently in different contexts. Just as "love" can describe anything from tender affection and lifelong devotion, to unbridled lust and destructive obsession, it is possible for "design" to convey a minute technical detail to one person; a million-dollar chair to another; and a life-changing innovation to a third.

But, for me, design has always had one elemental role as an agent of change that can help us to make sense of what is happening, and to turn it to our advantage. Every design exercise sets out to change something, whether it is to transform the lives of millions of people, or to make a marginal difference to one, and it does so systematically. At its best, design can ensure that changes of any type – scientific, technological, cultural, political, economic, environmental or whatever – are interpreted in ways that are positive and empowering, rather than scary, inhibiting or destructive.

There is no doubt that we need design more than ever, as we face changes that are unprecedented in their speed and scale on so many fronts: the deepening environmental and refugee crises; the growing imbalance of power between rich and poor, old and young; the need to identify useful applications for ever more complex and

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powerful technologies; and to enable us to express different aspects of our increasingly fluid and nuanced personal identities, in terms of our politics, ethnicity and genders.

Design is not a panacea for any of those "major problems" as *The Economist* calls them, but it can help us to address them intelligently, responsibly and constructively. Yet most people don't see design like that. They regard it as a superficial medium whose primary functions are as a styling tool, a marketing ploy, and an indulgence for spoilt consumers in wealthy economies. They may even see design as a catalyst for toxic hellholes like this, the notorious Agbogbloshie e-waste dump in Ghana, where unwanted computers and other digital junk from Western Europe and North America go to die.

Sadly, some design projects were – and still are – guilty as charged, though that's only part of the picture. But the stereotypes aren't just irritating for those of us who believe that design has much more to offer, they are also deeply damaging. If the power brokers in politics, business, finance, education and economic development persist in thinking of design as only being useful for, say, producing expensive, unstable chairs or blingy cell phones, it risks being restricted to those roles – and to being overlooked as a solution to major problems like climate change. And there will be no public pressure to challenge the Agbogbloshie Dump. If most people still dismiss design as something that creates fetid hellholes like this, why would they think that it might also help to clear them, to clean them up and to devise less dangerous and destructive ways of disposing of junk by recycling it responsibly? They wouldn't.

Unfortunately, design writing has contributed to these stereotypes over the years, almost always unintentionally. And I am not just referring to flashy-trashy articles in style magazines and coffee table books, but to some of the most thoughtful examples of design critiques by intelligent, laudably serious writers. If we look back historically, much of the most incisive writing on design has come from either a negative, or distorted, perspective.

One of my favourite early design writers is an exception, the pioneering 19th century industrial designer, Christopher Dresser, whose books and lectures introduced conservative British consumers to his enlightened approach to industrialisation. As intellectually agile as he was technically ingenious, Dresser was passionately committed to modernity and experimentation, and combined extensive knowledge of industrial materials and production processes with a deep respect for – and understanding of – the skills of the people who fabricated his work. He set a great precedent for future writing on design.

Yet even as deft and dedicated a design champion as Dresser was no match for its opponents led by the artist, designer, poet and maker William Morris, the art critic John Ruskin, and their followers in the Arts and Crafts Movement. Morris and Ruskin championed a return to the gentler, supposedly pure values of rural craftsmanship, and demonised design, as they did "dark satanic mills", child labour exploitation and everything else associated with manufacturing industry.

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The cultural tide turned in the early 20th century when Alexander Rodchenko, Liubov Popova and the other pioneers of Constructivism in post-revolutionary Russia championed industrialisation as a means of improving the lives of millions of people. Their message was spread across Europe by the original Constructivists and their converts. In the forefront was another of my design heroes, the Hungarian-born artist, designer and visual theorist, László Moholy-Nagy, who taught at the Bauhaus school of art and design in Germany during the mid-1920s.

It was Moholy-Nagy who infused the Bauhaus with Constructivist fervour and reinvented it as a progressive, technocratic institution with the slogan "Art and Technology: A New Unity". He even wore factory overalls as his teacher's uniform at the Bauhaus to symbolise his faith in industry and technology. Moholy-Nagy continued to write intelligently and sensitively about design, after leaving Nazi Germany in the 1930s, first for Britain and then the United States, as did his collaborators, including fellow Hungarian visual theorist Gyorgy Kepes and the British art critic and curator, and convert to modernist design, Herbert Read.

But most of the cultural discourse on design at the time was written by architects, led by Walter Gropius, Le Corbusier, Mies van der Rohe and Hermann Muthesius. Understandably architecture was their primary concern, and given that their principal personal engagement with design was through furniture – mostly chairs – this was the area of design they focused on. (Even though many of those architects delegated most or all of the design of their furniture to colleagues, often to women, as Le Corbusier did to Charlotte Perriand, and Mies to Lilly Reich.)

The same applied to the pioneers of design curation in museums, like the US architect Philip Johnson, who founded the architecture and design department at the Museum of Modern Art in New York in the 1930s, and started its famous design collection. Unwittingly, they too viewed design through the prism of architecture, and skewed cultural discourse on it towards aesthetics and styling.

So did the most incisive post-war cultural critiques of design, written by the French philosophers Roland Barthes and Jean Baudrillard, and the British architectural historian Reyner Banham. Barthes wrote brilliantly about the beauty of mass-manufactured objects like the 1955 Citröen DS19 saloon, which he dubbed the "*déesse*" in a play on the similarity of its initials "d" and "s" to the French word for goddess. His writing was nuanced, perceptive and sophisticated, yet it also reinforced the idea that design is about appearances.

Reyner Banham was equally witty and incisive in inveighing against the tyranny of furniture design in general and the chair in particular in the phenomenon he called "furniturization" in a 1967 essay for the British political journal *New Society*.

"The area worst blighted by furniturization lies right under the human arse", he wrote. "Check the area under yours at this moment. The chances are that it is occupied by an object too pompous for the function performed, over-elaborate for the performance actually delivered and uncomfortable anyhow." Thoughtful and enlightened though his, Barthes's and Baudrillard's writing on design was, it was rooted in consumerism, visual

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seduction and in deconstructing design's power as a commercial tool, which did nothing to quell the notion, fostered by Morris and fellow Arts and Crafts champions, that design was at best shallow, and at worst damaging.

Nor did the polemics written by design and environmental activists like the Austrian designer Victor Papanek in his 1971 book *Design for the Real World*. Papanek delivered a brutal, but justified assault on the ecological and moral damage caused by sloppy and irresponsible designers, summed up by the opening sentence of the preface to the first edition: "There are professions more harmful than industrial design, but only a few of them". He went on to accuse the "dangerous breed" of causing mass pollution, mass murder, wanton nonsense and other evils. Despite, or perhaps because of, its ominous tone, *Design for the Real World* is still in print, and is one of the best-selling design books in history. And many of Papanek's doleful warnings have, of course, proved to be correct.

Not all design writers were as cynical and disillusioned as Banham and Papanek. There have always been inspired and inspiring individual writers and design journals, who have focused on design's strengths as well as its weaknesses. Among my favourites are Deborah Allen's analyses of car design for *Industrial Design*, the US magazine in the 1950s. Reyner Banham was a great admirer of her design criticism, as was his friend, the British artist Richard Hamilton, who named his painting "Hers is a lush situation" after a line in Allen's review of a 1955 Buick.

I also love *Typographica*, the 1960s British graphic design journal, edited by Herbert Spencer. He published some wonderful writing though *Typographic*a's real forte was fusing words with imagery, as it did in an exposé of the UK's muddle of illegible road signs that triggered a government review of road signage design.

The 1970s was, of course, the decade that Alessandro Mendini came to the fore as the editor of a succession of dazzling radical Italian design magazines: *Casabella*, *Global Tools* and *Domus*. By the time he left *Domus* in the early 1980s, Mendini's mix of design, culture and politics was adopted by the art critic Rosetta Brooks in *ZG*, a post-punk zine that I loved at the time because of its originality, ingenuity and cultural inclusivity.

The US graphic designer and design activist Sheila Levrant de Bretteville also wrote brilliantly about the cultural politics of design, specifically about its gender politics as a co-founder of The Women's Building in Los Angeles, where she set up the Women's Graphics Centre. While in the 1990s, the British magazine, *Eye*, emerged as an excellent source of good writing on graphic design.

And the Dutch product designer Hella Jongerius forged a fascinating collaboration with the design critic and historian Louise Schouwenberg. Hella has always been laudably intellectually ambitious for her work, but is less confident about articulating and contextualising the underlying ideas. Louise has done this for her brilliantly since Hella's career began in the 1990s, and continues to do so.

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Important though all of these writers, editors and journals were, they were preaching to the converted, by being read and debated within the design community, as was the cottage industry of academic design journals. The vast majority of people only read about design in the context of interior design magazines or newspaper Home sections – stuffed with property and furniture ads. The few design stories that received mainstream coverage tended to be calamities – like embarrassing corporate logos and wobbly bridges – or the record-breaking prices set by the over-priced, barely functional chairs sold at design-art auctions. Very few newspapers employed specialist design critics, who could have been counted on to lobby for wider, deeper and more nuanced coverage of design. And the economics of publishing meant that most design writers depended on existing media to disseminate their work, thereby restricting themselves to interiors coverage or specialist journals whose readerships were too small to stimulate a broader debate.

All of that changed with Web 3.0 technology, which has transformed design discourse. Like so many other subjects considered too esoteric to justify regular coverage in the mass media, design has benefited immensely from the latter's decline and from the emergence of countless websites, blogs and social media feeds, which are now devoted to interrogating different elements of it. New writers have been able to express their visions of design and to develop distinctive critical voices by writing for their own blogs and those hosted by established media, such as *The Guardian* and *The New Yorker*, both of which publish considerably more design content online than in their printed editions. Many of the old specialist design journals have closed, but some have survived online. Like the most dynamic of the new design blogs, they can command far larger readerships with a broader international reach than their printed predecessors. Also, many of their readers are more engaged with the ideas they encounter online, because they are able to participate in the debate.

Not only has Web 3.0 design media empowered many more people to air their views on design, the most ambitious and sophisticated blogs, like *Disegno* and *Design Observer*, have provided platforms for thoughtful and spirited discussion. Some of the most influential design critics of the print era, including the British graphic design historian and *E*ye's founding editor, Rick Poynor, now write regularly online, free from the space constraints and visual limitations of printed media. Rick, for example, was initially dubious about blogging, as many established writers were. Then he discovered that it enriched his writing in *Design Observer* and other blogs because of the possibility of animating his writing by placing relevant images alongside the text.

Interestingly, the British art critic, John Berger, did the same – albeit more cumbersomely – when working on his 1972 book, *Ways of Seeing*. Berger sat beside the graphic designer Richard Hollis, with whom he had worked for many years on *New Society* magazine, while he was laying out the pages. Whenever necessary, Berger revised his text to ensure that the images could be perfectly positioned.

Specialist blogs devoted to specific aspects of design and design culture are thriving. Some have print components, like one of my favourites – the Dutch project *Works That Work*. It featured reflective and investigative writing on politically charged aspects of vernacular design, though, sadly, *Works That Work* closed in early 2018. One issue was

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devoted to design in Bhutan – from the design of national dress and stamps to define the tiny country's national identity, to the incredible ingenuity of two self-trained vets, who have designed and constructed medical equipment, splints and animal wheelchairs from whatever scrap materials they could find.

Other blogs are geek fodder, such as *Art of the Title*, which deconstructs the design of inspiring film and television title sequences in extreme detail. Or they focus on important strands of design politics, like *Depatriarchise Design*, a blog founded by the Zürich-based designer, researcher and activist Maya Ober to provide a space to explore feminist and patriarchal issues in design. Neither *Art of the Title*, nor *Depatriarchise Design* could have survived on the old print business model, but like countless other incisive, knowledgeable, funny and provocative blogs, they are very welcome additions to design's cultural discourse.

Another fertile source of design writers stems from the growing interest in conceptual design and design research in which designers interrogate elements of historic or contemporary design culture, using writing as an important component. Some of my favourite new design writing has come from the graduates of the Contextual Design course run by Louise Schouwenberg at Design Academy Eindhoven – like the Chinese designer Jing He's brilliant analysis of the construction of China's new design identity, and the role of copying in it.

Web 3.0 technology has also transformed design curation by fostering a new genre of curatorial projects, whose principal impact stems from the debates they provoke, rather than their physicality, thereby creating new platforms for design writing. This shift also reflects design's evolution into an increasingly eclectic and elastic medium, which is as likely to be applied to complex social and political challenges, such as reinventing dysfunctional social services or alleviating the refugee crisis, as to developing new physical phenomena. Design curation required radical changes to address this. A pioneer was *Design for the Other 90%*, an exhibition on the growing interest in design's social and political responsibilities that opened at the Smithsonian Cooper-Hewitt National Design Museum in New York in 2007, a year after the term "Web 3.0" was coined. Curated by Cynthia E. Smith, the exhibition was modest in size, but its theme was so timely and intriguing that it generated a spirited online discussion of the issues raised that continued long after the show had closed.

The online debate was largely conducted independently of the Cooper-Hewitt. Six years later, the Museum of Modern Art in New York launched a strategic response in an experimental project, *Design and Violence*, that used Web 3.0 technology to fuse design curation and writing. Curated by Paola Antonelli, MoMA's senior curator of architecture and design, and Jamer Hunt, who teaches at Parsons, the New School of Design in New York, *Design and Violence* was the museum's first major exhibition to be presented solely online. Its objective was to explore the changing concept of violence in society by inviting specialists from diverse disciplines to analyse 43 design projects relating to violence, including the AK-47 assault rifle, plastic handcuffs, stiletto heels, a land mine detector and the design template for a 3D-printed gun.

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Every week for 18 months, an essay on a new project was posted on the *Design and Violence* website, where it was commented on and critiqued. The essayists included established design critics like Rob Walker of *The New Yorker* and me, but also Gillian Tett of the *Financial Times*, the feminist theorist Camille Paglia, and a US army officer who had served in Iraq and Afghanistan. The responses were significantly more profound, polemical and surprising than those elicited by conventional museum exhibitions, especially as the curators were able to make strategic interventions in ongoing discussions. *Design and Violence* proved so successful in its online guise that Antonelli and Hunt organised a series of public debates in spring 2014, and published a printed book of the original posts in 2015. The concept was reinvented in 2016 by the Science Gallery in Dublin with a physical exhibition.

Eclectic, incisive, gutsy, accessible and seemingly endlessly adaptable, *Design and Violence* is already hailed as a landmark for early 21st century design curation. It may also be remembered as a milestone in design discourse as the template for a new wave of curatorial projects that, together with all of the other changes fueled by Web 3.0 technology, will create yet more new opportunities for people to write on design in ever more singular, nuanced and diverse ways. I would love to think that this process will continue, and fervently believe that it will, because the more voices we hear and read on design, the better.

About the author

Alice Rawsthorn is an award-winning design critic and the author of critically acclaimed books, including *Design as an Attitude* and *Hello World: Where Design Meets Life*. Her weekly design column for *The New York Times* was syndicated worldwide for over a decade. Alice speaks on design at important global events including TED and the World Economic Forum in Davos. Born in Manchester and based in London, she chairs the boards of trustees at Chisenhale Gallery in London, the contemporary dance group Michael Clark Company and The Hepworth Wakefield in Yorkshire. A founding member of the Writers for Liberty campaign to champion human rights and freedoms, Alice was awarded an OBE for services to design and the arts.

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Embodying betweenness: Designing artefacts through imperfection, impermanence and incompleteness

Gyungju Chyon[1]

Abstract

Imagine a fruit bowl, overflowing with fruits. Removing an apple reconfigures the bowl, as if bowl and fruits are in dialogue, co-shaping one another and the surrounding environment. How might a maker approach materiality akin to this bowl, and bring forward the interactive relationship between materials and environment? What might be the value of this approach? Approaching artefacts with a heightened sense of their relationality, *Embodying Betweenness* investigates the *interactive field* encompassing material, environment and maker. Artefacts like the fruit bowl bring forward the qualities which arise from an interactive relationship between materials and environment. Rather than blocking sunlight, the *Liquid Sky* sunshade is incomplete without it. *10 Kinds of Fog* reveals the ever-changing character of fog with subtle shifts and constantly *impermanent* assemblages with air. These interactions between textile, sunlight, fog and air are not necessary controllable, thus the imperfections of the interaction is embraced. *Imperfection*, *impermanence* and *incompleteness* are qualities of *betweenness* between materials, environment and maker. Reflecting on the making processes of two design projects, the author (maker) delves into the concept of the interactive field and tendencies of in-between space, and elucidates the qualities in artefacts that embody this.

Keywords

Product Design; Aliveness; Making; Materiality; Betweenness

Imagine a fruit bowl, overflowing with ripe fruits of various sorts. As the fruits occupy the space of the bowl, the bowl offers the fruits possibilities and limitations. For example, grapes might overflow in the edge of the bowl, while also occupy spaces between apples and the bowl. Removing an apple reconfigures the relationship between grapes, apples and the bowl. The bowl also engages the changes of colour and smell to

✉ Gyungju Chyon: chyong@newschool.edu

[1] Assistant Professor of Product Design and Industrial Design, Parsons School of Design, The New School, New York, United States

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become perceptible as the fruits ripen. The rationality of bowl, fruit and environment is quite apparent. Now imagine the same fruits in a closed box. The box seals its contents within a universal and immutable container; empty or full, the box is still a box. The bowl, on the other hand, is porous in that it is open to the influence of the fruits. The bowl and fruits are in reciprocity, co-shaping one another and the surrounding environment as if the bowl and the fruits are in dialogue and just as it quiets down, removing another apple causes it to come alive again. The surrounding environment also impacts this relationship, as temperature, humidity, light and the presence of microorganisms influence the fruits' changing scent and colour. Bowl and fruits jointly affect and are affected by the surrounding environment, while the box relates to the environment independently of the fruits inside (see Figure 1).

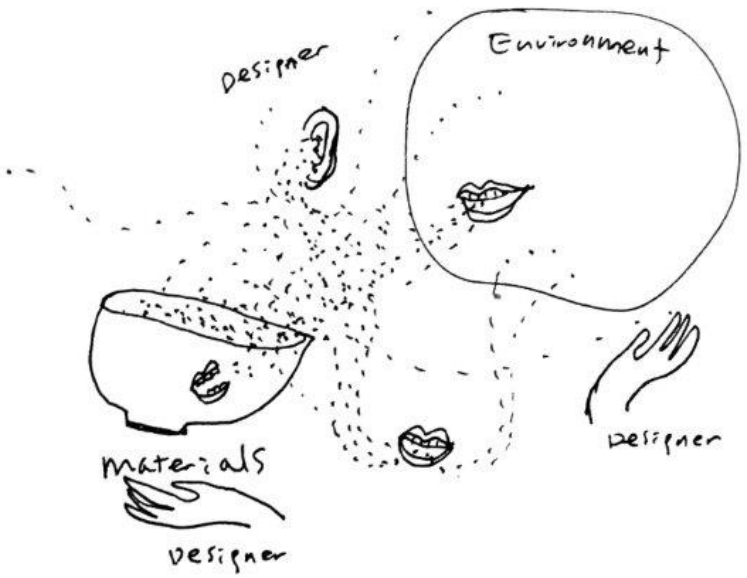

Figure 1. Approaching materiality like a bowl could heighten the conversation between materials, environments and the maker.

Despite often appearing to be self-contained – as the bowl, fruits and environment illustrate – artefacts exist in dynamic, relational fields where they interact and interconnect with their environments. But it is difficult to recognise this aspect, because the interconnectedness of things is often too vast and complex for us to grasp (Morton). Environment, such as the sunlight, water and air are both intangible and omnipresent parts of the atmosphere. Because of this, as artist Ólafur Elíasson puts it, we are "numb" to the atmosphere and we often lose sight of it. Yet, materiality, Elíasson asserts, can re-sensitise us and draw our attention to particular atmospheric qualities by making them tangible (Böhme et al. 47).

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How would a maker approach designing an artefact like a bowl, in the sense of working with the interactions between materials and environment as intrinsic to a design? What might be the value of approaching materials this way? These questions are explored through two design projects that utilise the sunlight and fog as materials. Through the process of making two artefacts, the maker explores how light and fog might be approached as integral part of two artefacts, akin to the relationship between a bowl and fruits and so to make light and fog more apparent and tangible. While approaching materials this way, the maker reflects on the notion of working *with* materials and environments through assemblages of textiles, foggers, fans, light, water and air. Reflecting on the making process reveals that the potential value of this approach might be that the resulting artefacts can evoke a sense of aliveness that is brought forward by the qualities of imperfectness, impermanence and incompleteness.

Materialising the experience of sunlight

My practice was invited to speculate on the future of the waterfront holiday home as a part of the exhibition "Out of the Square: Beach Architecture on the Mornington Peninsula".

The Mornington Peninsula, which extends south from Melbourne along the eastern shore of Port Phillip, is holiday cottage country for Melbournians, as it offers qualities of both outdoor life and urbane activities all within a short distance of the city. Yet the economic pressures of contemporary urban life have changed the relationship of the holiday to the holiday home, and diminished its role. Thus, instead of designing a holiday home, we proposed an alternative for which we set two criteria: instead of bringing a family to Mornington, the experience of Mornington would be brought to urban cities; and the natural amenities of the Mornington experience, such as water, sea air and sunlight, would be heightened and made portable. Our research found that people visit Mornington primarily seeking sunshine and the beach to escape the everyday routine and reinvigorate. We wondered, would bringing even this one aspect of the Mornington Peninsula into the home enliven urban domestic life and inject something of the exceptional experience into the everyday routine? The dynamic relationship between light conditions and the sea makes the play of light off the water surface mysterious, wonderful and sometimes sublime. How might we capture and materialise this intangible phenomenon of light and water? We looked to textiles, and proposed to capture, modulate and produce light within a textile surface to create the changing quality of light as might be reflected from the surface of the sea.

We first considered capturing light during the day, and releasing it in the evening by utilising either photovoltaic panels combined with artificial light sources, or phosphorescents combined with crystals. Yet, neither of these felt right in the sense of creating a similar quality to that of the sunlight at the seashore. Merely converting the sunlight into energy and artificial light did not capture the experience of the Peninsula. When we experience sunlight at the bay side we do not experience it so much as energy, but as something else.

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After taking a collection of photographs capturing the endless changes of the mood and effect of sunlight on the sea surface, we transformed those photographs into drawings of black dots on a white field, and printed them on clear acetate. When light was projected through these two layers onto the wall in a darkened room, it started to resemble something. Still it did not capture the qualities of seaside light. By inverting the positive and negative of the pattern drawing – transparent dots on a black field – we made the sheet material disappear and produced lights which sparkled when we projected onto the wall. With the first test, the light was merely a medium to project the shadows of drawn dots, yet with the second test the light was transformed into a subject. Its quality and behaviour jumped into the foreground. By foregrounding light, the sunlight became a subject with an active agency, rather than an inert, passive object.

Embodying interactions between textile, light and air

At this point, we realised that we ought to let the light drive the effect. Further experimentation led us towards designing with textiles as a way of collecting and animating light. Rather than designing light, we sought to design *with* sunlight. We sought not to control the light so much as engage it in a simple sensuous way – as a kinetic, visual phenomena. The design of the sunshade, we felt, needs to accept the ever changing, unpredictable character of sunlight. Thus, the relationship between textile and sunlight shifted.

We introduced an array of small perforations (ø10mm, ø5mm, ø3mm) into textiles with varying translucency, and hung them in the window in order to test their light filtering effect. While the translucency of the textiles obscured the view through the window, the perforations invited the light in. However, it felt like the light was scattering into the space, rather than being captured. However, when a black textile was perforated, and a white textile layer was placed in front of it, the background noise was eliminated, and only the light projected on the white surface became tangible and even seemingly amplified. The light was working *with* us! (see Figure 2).

As the angle of the sun changed, perforations through the black layer sculpted the light from circular to oval to elliptical shapes, as it fell onto the white layer. The layered textiles offered the sculpted light a space to linger, while the fibres of the textiles gave the light texture. These together produced something akin to a cinematic performance as the projected light changed from a sharp focus to a soft blur and back again. Opening the window enabled air movement to be included in this assemblage of textile and light; the textile became a stage for light to dance and perform – like the evanescent shimmering of light reflected off the ocean. Both air and light were working together with textiles (see Figure 3).

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Figure 2. Details of light on the textile layer.

Figure 3. *Liquid Sky* sunshade brings weather inside.

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The interactive field

We explored different perforation patterns and continually adjusted the distance between the textiles over a number of weeks as we witnessed the changing effects of light. As the continual interactions of textile, perforations, light and air are never the same and never still, there is a continuity of the past overlapping into the present. Upon completing the prototype, we were aware, and anticipating the effect in coming seasons would not be fully predictable and also not the same. The evanescent effect of light and air is not so much about the fleeting present, but about building up a story over time akin to a movie. The accumulating memory of kinetic relationships from moment to moment, and day to day made me aware that the resulting assemblage was something more than mere sheet materials hanging in my living room. There was certain aliveness about it. This is because it is not so much the textile – fineness of woven fibres, colours or weight – that I see, but rather it is the conversations between textile, light and air that I am hearing.

Like a bowl becoming empty, filling with fruits and becoming empty again, the sunlight is contained in the layers of textiles: sunlight fills, shifts and changes the textile layers. At the same time, the textiles also shape the sunlight, giving it texture, and focus. Highlighting these interactions between sunlight and textiles made the light a tangible presence in the living room (see Figure 4).

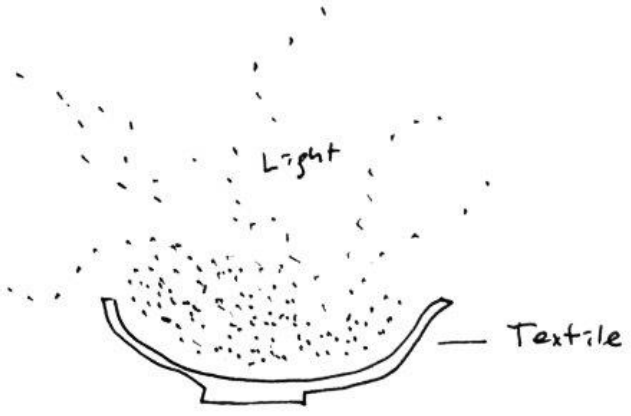

Figure 4. Textiles and light akin to a bowl and fruits.

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Yet, the light effect is incomplete in so far as the interactions are a continuous, unfolding story. Similarly, Ned Kahn's *Wind Arbor* makes the air movement tangible by using overlapping, thin metal scales as the cladding for a building. When the wind blows, the scales sway, creating an animated shimmer of light and producing a theatrical performance of wind, and environmental energy. By connecting metal and air, the building facade is a manifestation of a changing conversation – sometimes whispering, other times shouting loudly – between the scales and the air, thus bringing the facade to life. Thomas Heatherwick materialises the sunlight by setting up a delicate interplay between fibre optic rods, plant seeds and the sunlight in the United Kingdom pavilion for the Shanghai World Expo 2010, the *Seed Cathedral*. The light travels through clear acrylic rods into the *Seed Cathedral*, illuminating both seeds and the interior space of the pavilion. This way of lighting the seeds does not attempt to be perfect, in that rather than illuminating each of them at the same brightness, instead it allows the variety of daylight to be brought in. Allowing the conversation between unpredictable weather, acrylic rods and seeds seems to generate the animate atmosphere of the pavilion, and bring it to life.

In these examples, textiles and metals, and acrylics, light and air – like bowl and fruit – operate within an *interactive field* – a spatio-temporal condition where the relationship between materials and environments continually unfolds, and constant changes and shifting relations are celebrated rather than oppressed. In this *interactive field*, textiles, metal scales and acrylic rods are incomplete objects without sunlight and air movement. At the same time, they materialise the intangible atmosphere, making it tangible.

The textiles in conjunction with the weather choreograph a dance of light, appearing like a shimmering sea one moment and cloudy sky the next (see Figure 5). These effects are not controlled by the maker, but are created by material engagements with environments, and continued regardless of the maker's intention. Philosopher Jane Bennett calls this sort of interplay "vitality" of a thing. Bennett points out how things have a *directedness* that they move away from something. For example, steel can rust, moving away from an ordered, sculpted object. Things in this way, she argues, inherently possess their own vitality (Bennett). This vitality may be brought forward through a particular set of relationships. Within this set of relationships, materials have emergent possibilities: new potentials arise from interactions with other things, thus materials have greater sense of *becoming* something, rather than being static. Embodying the qualities produced through interactions between tangible materials and part of their environments may help in bringing out the vitality noted by Bennett, and thereby evoke a sense of liveliness, as in the sunshade, the façade and the pavilion.

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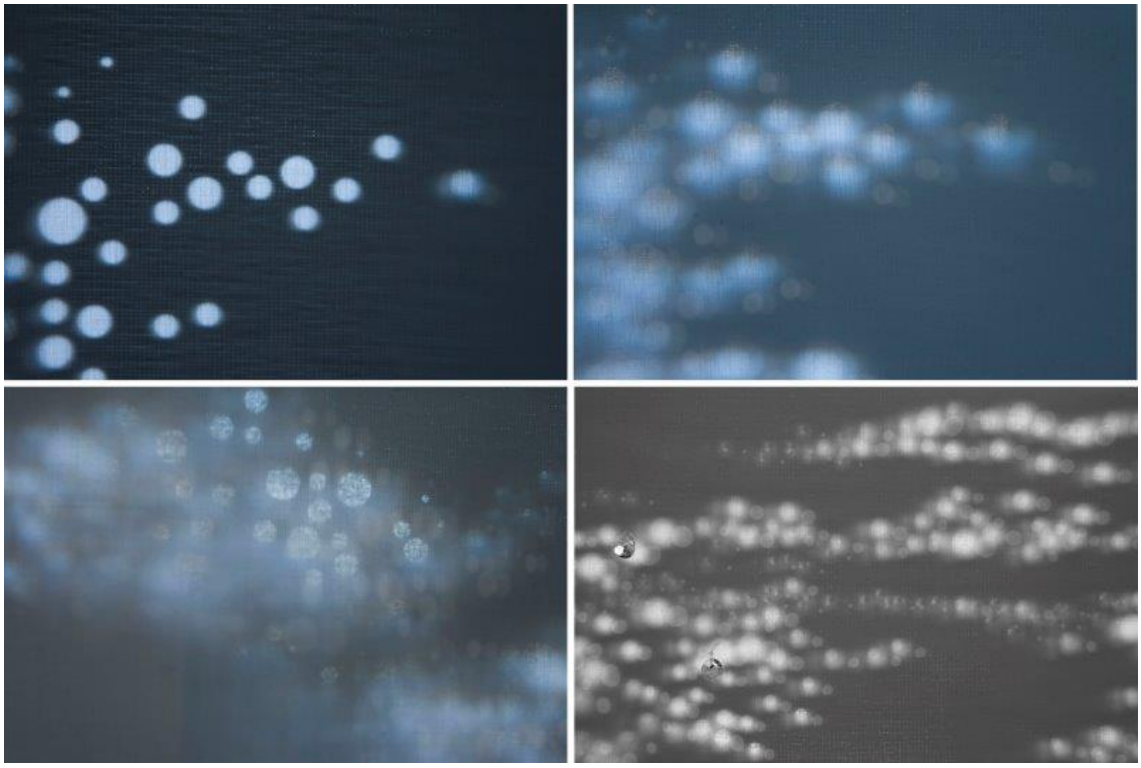

Figure 5. Until the sun is completely set, the slightest changes of weather are captured and amplified by the textiles. Whether rainy or cloudy, with passing seconds and minutes, the vagaries of weather are portrayed on and by the textiles.

Working with fog

10 Kinds of Fog has its origins in *Fog Garden*, an installation at Ljubljana's Jakopič Gallery for the *Public Water Public Space* theme for the BIO50 design biennale in 2014. We proposed to animate a neglected, public entry to Ljubljana's Tivoli Park with hanging, fogponic gardens. Utilising ultrasonically produced fog as an efficient growth medium for plants, an interlocking thicket of water trees would emit clouds of fog to feed translucent capsules of flowering plants. We presented our proposal in the form of a life-size street view and a set of three semi-functioning prototypes of fog capsules with plants. When the foggers in the capsules were activated, the water began to percolate with life as the fog filled the capsule. The fog production changed the installation from a static representation of objects, to a dynamic experience. This led us to further study this fascinating aspect of the project (see Figure 6).

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Figure 6. Three prototypes of fog capsule planters of the *Fog Garden* installed at Jakopič Gallery.

In the 1960s, Yves Klein's *Air Architecture* proposed architecture in which walls and ceilings were created not with wood or plaster, but with air and fire. Created in the same era, Hans Haacke's *Condensation Cube* (1965) demonstrates the interplay of air, water and temperature through condensation in a sealed, transparent cube; depending upon the environmental conditions of the gallery, the cube changes, becoming more fogged up or more transparent depending upon temperature and placement. This interest in the environment as material has resurfaced in the work of contemporary artists and designers. Ólafur Elíasson's *Your Felt Path* (2011) employs fog to produce a spatial experience which engenders a feeling of mystery, seclusion and depth, akin to Diller Scofidio + Renfro's *Blur* pavilion (Diller, Scofidio and Diller + Scofidio). Philippe Rahm's interiors organise spatial sequences using environmental qualities, like heat, humidity and airflow, as a primary generator. Water, air and heat are central to the experience of these artefacts (Clément et al.).

Rather than exploring fog within the system we designed for the Fog Garden, we decided to create a system for the fog itself. How might we design something *with* fog itself? Can the depthless, formless phenomenon of fog assume different and distinct structure and qualities?

In order to release fog into the atmosphere, we used a fan to push ultrasonically produced fog out of a water reservoir. With the force of the fan, the fog was merely microscopic water droplets which quickly dispersed into the air. However, when we added porous materials such as sea-sponges, reticulated foams and geo-textiles as

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filters, and pushed the fog through them, it started to develop distinctive textural qualities – thicker or thinner, heavier or wispier; the filters gave the fog a voice. Yet, the force of the fan still made the fog disperse into the air, without any formal qualities. We wanted to give fog more material presence, so as to reveal its character.

The International Cloud Atlas categorises fog according to the relationship between ground and air which produces it, such as radiation, advection or upslope fog. In order to make the fog linger longer, we thus considered that we ought to on one hand provide surfaces like a landscape, and on the other, work more *with* air in order to work *with* fog. We made a set of modulator boxes of different forms containing different filters. When we moved fog through these modulator boxes and across a variety of different textiles and paper surfaces, mimicking a landscape, the fog began to glide over the surfaces. However, these surfaces also seemed also to reduce the textural qualities of the fog that we noted previously, which required more engagement with air.

When we allowed the fog to push through the surface from below, however, different combinations of textiles, modulators and fan speeds imbued the fog with different characteristics, as if the fog was wearing different costumes. Air, at this point, became a partner for the fog to act and dance with: fog became wispy and buoyant, or heavy and slithering; bouncy, turbid and tempestuous; or calm, eerie, contemplative and still. While each type of fog was behaving differently with air movement, having its own unique dialogue with the air, it also seemed to grip the textile, while the textile allowed fog to move above and below its surface. The fog was negotiating between the textile surfaces and air movement: the fog was held, pulled, strained, combed, bumped or sieved by the textiles. When fog was released into the air in isolation, it was difficult to discern a particular character. Yet, when we added layers of elements for the fog to interact with, it started revealing its different characters and qualities, and at the same time qualities of textiles and air that normally escape us (see Figure 7).

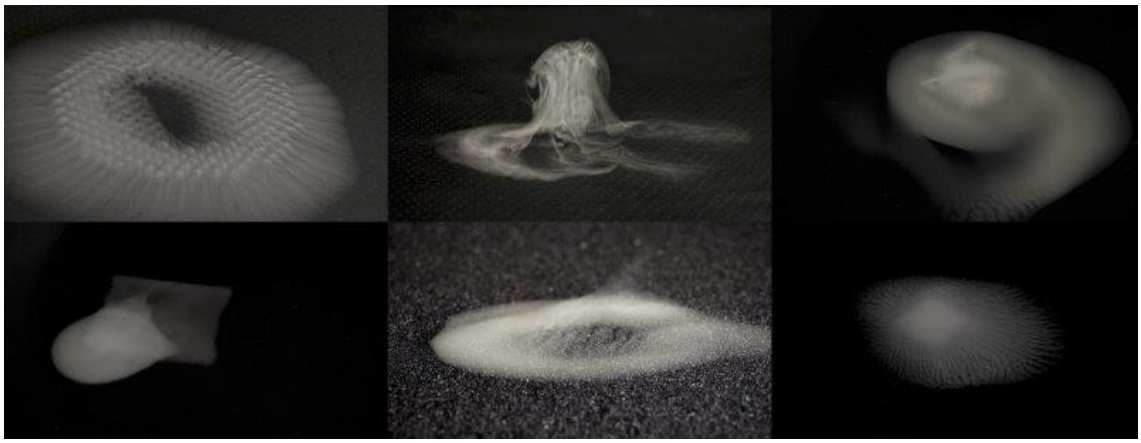

Figure 7. Four different textiles and four different diffusers are assembled to produce different characters of fog.

Philosopher Tonino Griffero calls such environmental phenomena, like air, humidity, wind and light, *quasi-things* – they are both substance and that which we experience the things around us through (Griffero and De Sanctis). Quasi-things are both the

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creators of atmosphere and atmosphere themselves. They are themselves things-like but not really things; they are things on a scale that we don't really perceive. Fog, on one hand, is vast when seeing from the window of a plane, but on the other hand, minute, when we see it as airborne mist, and as small droplets on our hands or clothing. Fog kind of exists as a thing on these levels. But, between these extremes, such as when we walk through a foggy street, it is not a thing but a quasi-thing that is experienced. Echoing Elíasson's idea of how atmospheric qualities can be tangible, Griffero asserts quasi-things require the attunement of our senses to perceive (Griffero and De Sanctis 12). We can see a linguistic example of this in exceptionally large number of words for different kinds of snow in the Saami language. Saami are indigenous people inhabiting the arctic area encompassing part of Norway, Sweden and Finland. The Saami are highly attuned to snow in their living environment. Their terminology for snow thus illustrates the richness and the depth of their understanding of and relationship with snow that people living elsewhere do not possess (Magga).

Whereas we think of fog as being something that masks and flattens, this project reveals its structure, dynamics and depth that normally evade our direct attention. Through construction of textiles, foams, ultrasonic foggers, fans and water reservoirs, it makes the interactions between fog and air much more apparent, While the effects were largely indescribable, they all exuded certain aliveness.

Making assemblages

In *Vibrant Matter*, philosopher Jane Bennett refers to the sort of construction we made of textiles, reservoirs, fans and plastic modulators as an *assemblage*. Everything in the environment, she argues, from people and corporations to plants to carbon dioxide, continuously makes and remakes assemblages with other "unstable active entities", and acts jointly through these "ad hoc groupings" (Bennett 5). During the design process, assemblages form and re-form between these entities we design and control (such as the foggers, fans, speed controllers, textiles, foams, plastics, resins and foamcore with which we made the components) – and entities we cannot (such as the weather and the conditions of the room). Although we can add foggers, increase the fan speed and add layers of textiles to achieve the desired effects, the ambient conditions of the surrounding environment also shape the result. Similarly, the position of the sun and cloud, air movement of a room, or position of a window, would form different assemblages along with the construction of textiles and their positions. Thus, there is a negotiation between the designer, the materials and the environment itself. Because of this incomplete nature of assemblages, rather than present one fog, we decided to present many, each of which amplifies distinct interactions between air, materials and water, and distinctly manifest of the assemblage of designed and environmental entities.

When fog emerges from the textile surface it demonstrates a certain force and willingness to push through the textile fibres, and begin its dialogue with the air. As fog moves across the textile surface, some retreats underneath the textile and disappears, while some actively engages the air. The interaction between fog and the air is unpredictable and ephemeral, it is always becoming something; there is no final state of

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perfection, exhibiting an ideal form, movement, size or behaviour. The relationship between textile, fog and air oscillates between equilibrium and turbulence, the result of the negotiated contingency of continually forming and reforming assemblages of materials and quasi-materials. Yet, as the fog's directedness becomes heard and brought forward, its aliveness becomes more apparent.

When we filmed *10 Kinds of Fog*, each time we set up a particular combination of textiles and modulators, we became silent observers, as the resultant fog effect emerged as expected or deviated in novel and unexpected ways. For example, when we moved the work from our design studio to the photo studio, the atmospheric conditions of the room changed, and rather than reproducing the effects we witnessed in the design studio, new behaviours emerged. The impermanent assemblages of designed equipment and atmosphere of the room offered new potentials for behaviour and pattern. The process of design and documentation was thus about learning to accept the contingent nature of interactions through the fine balance between control and negotiation.

Betweenness and designing with

Both *Liquid Sky* and *10 Kinds of Fog* exist within relations between particular sets of materials and environments. These relations arise from the continual making and unmaking of assemblages within an *interactive field* comprising materials, maker and environment. In the case of *Liquid Sky*, the changes of position of sun and cloud, the movement of air, and the textiles create an ever-changing effect that heightens the changing relationships between them over the course of the day and the seasons. Similarly, in the case of *10 Kinds of Fog*, both the atmospheric and spatial conditions work in conjunction with the textiles to create a variety of fog effects, which reveal the slightest changes in a space and dynamic air movement. One can experience a similar quality in Ned Kahn's *Wind Arbor*, as the relationship between the metal shingles and their environment becomes much more apparent when a gust of wind causes them to flutter. When there is little movement of air, the relationship between metal and light is foregrounded, as the shingles reflect in relation to the sun and sky.

Just as a fruit bowl reveals a changing relationship between the bowl and the fruits, *10 Kinds of Fog* reveals a continually unfolding dialogue between textiles, sunlight, fog and air. The fog sculpted by the textiles moves, disappears and appears again as the air moves across the textile.

As this kind of interactive relationship between materials and environment is foregrounded, the impermanence of assemblages, the incompleteness of materials, and the imperfectness of interactions is celebrated and brought forward. These are qualities of a *betweenness* that arises between a series of interconnected spatio-temporal actions of materials, environment and a maker**.** In their study of the work of Japanese philosopher and intellectual historian Tetsuro Watsuji, philosophers Robert Carter and Erin McCarthy present Watsuji's betweenness between humans as a spatio-temporal space where all kinds of relationships are possible (Carter and McCarthy). Borrowing his thoughts, the artefacts that arise from the interactive field have these qualities

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precisely because they leave space for the making of assemblages, allowing changing relationships, thus they are continually *becoming* something. Embodying and bringing forwards these kinds of *betweenness* in artefacts may help us to open up questions about artefactual liveliness.

To bring these forward, designers and makers might approach and shape these interactions through designing *with* materials and *with* environments. Architects Mohsen Mostafavi and David Leatherbarrow discuss the siting and use of the rust coloured cor-ten steel for the John Deere Headquarters office buildings by Eero Saarinen as something that "grew from" the land, and is designed "with the topography" (Mostafavi and Leatherbarrow 106). Working *with* the topography, the building, they argue, is in symbiotic relationship with its environment. Similarly, through working *with* the sunlight and air for *Liquid Sky*, and working *with* fog and air for *10 Kinds of Fog*, the interactions between textiles and weather are brought forward.

Working *with*, for these two projects, means that a maker works with potential tendencies of materials arising from their relationship to others and how they behave relative to other things. For example, working with clay does not mean that it is only about the maker's hands and inherent materiality of clay. Rather, it is also about working with clay's relationship to other forces. It is about listening to the conversations as clay engages air, gravity or other forces, from which the maker is sometimes excluded, as the conversation is not necessarily privy to the maker. The architect is excluded from the conversation between the weather, topography and cor-ten steel, which continually change the building in ways that may be or may not be expected. The maker is similarly excluded from the dialogue between sunlight and textile, and between fog, textile and air. Thus, sometimes working *with* the interactions of things requires that the maker back off and only listen, and other times that the maker re-enter the conversation. Sometimes, working *with* a thing (or quasi-thing) requires working *with* another thing (or quasi-thing) as well. Working *with* air was required in order to work *with* fog for *10 Kinds of Fog*. Materials gave voice to the fog; yet working with air enabled us to bring out qualities and characters of fog. Mostafavi and Leatherbarrow take "Saarinen's belief in the creation of a total environment" as an example to assert that embracing the weathering of a building enhances its place by working *with* its environment (Mostafavi and Leatherbarrow 106). Approaching design in this way may help in embodying the betweenness between materials and environments in artefacts.

In the interactive field of *Liquid Sky* and *10 Kinds of Fog*, the forming of different assemblages is not necessarily controlled by the maker. In the midst of assemblages, things don't always occur seamlessly; variations and slippages happen, as unknown forces become a part of the assemblages. The maker may have a sense of control, not by manipulating materials to the maker's will, but by enabling interactions and allowing for unexpected slippages. Working *with* is about setting up conditions for the dynamic making and remaking of assemblages to occur. The composition, layering and perforations of the textiles for *Liquid Sky* were mediated through working *with* sunlight so as to enable certain interactions between sunlight and textile. Likewise, the different forms of plastic modulators, types of filters and textiles, and the number of

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foggers for *10 Kinds of Fog* were negotiated by working with fog and air to allow different conversations between fog, textile and air to be heard.

When we approach materiality in a way akin to the bowl and fruit comparison, we allow for the artefacts to adjust to and be adjusted by their environment. While fruits are arranged by both themselves and the bowl, the fruits' relationship to its environment also shapes fruits, bowl and environment. When the maker approaches designing artefacts like a bowl, quasi-things such as sunlight, air, and fog become more tangible, highlighting their experiential qualities, while they bring out aliveness in artefacts.

When light, water and wind are utilised as renewable energy for powering our consumables and sustaining our modern lifestyles, the mechanical management of our day-to-day urban lives is dependent on their commodification. We generally are not conscious about what is generated behind the scenes to supply energy to our homes and offices. Yet, when we engage air, water and light through our bodies – for example, when we feel a fresh gentle breeze through an open window in a stuffy room or when we are having a warm shower to get rid of stress from the day's activity – we feel them not as resources or commodities, but as stimulating and revitalising, connecting us with our existence, in a way that is intrinsic to our physical, emotional and intellectual well-being (Mangone and Teuffel 249). Bringing forward and embodying these experiential qualities of light, water and air into artefacts may be one way of helping us to bring out the aliveness of artefacts. When both materiality and environments are effectively co-designers of an artefact, environments have an active role in shaping artefactual aliveness. As a way of enabling these, a design process which engages the *betweenness* between materials and environment can foreground the qualities produced from interactions between materials and environments – as things which can be registered and felt, and generate a greater feeing of vitality.

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About the author

Gyungju Chyon is an Assistant Professor of Product and Industrial Design at Parsons School of Design. She previously taught Industrial Design at RMIT University in Melbourne, and Industrial Design at the University of the Arts in Philadelphia. She works internationally across a broad spectrum within objects design and installation though her practice *little wonder*. *little wonder*'s work seeks alternative ways of considering ecological issues by focusing on the relationships between objects, environments and us. It is concerned with engaging the environmental phenomena around us through working with the interplay of materials and environmental elements. *little wonder* has collaborated with companies such as Rosenthal (DEU), Interface (USA), Duravit (DEU), Emotis (FRA) and Lucifer Lighting (USA). Her work has been exhibited in venues in Helsinki, New York, Toronto, Philadelphia, Stuttgart, Sydney and Melbourne. Significantly, the Opening vase, in collaboration with Rosenthal, was among 50 selected to represent the 50th anniversary of the Rosenthal Studio-Line (1961-2011), and received a Baden-Würtemberg Award from the Stuttgart Design Centre.

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Design practice, things and language: An iterative collaboration

Thomas Lee and Berto Pandolfo[1]

Abstract

This paper is a collaboration between an academic design practitioner, whose primary medium of research is the designed object, and a design researcher with a background in literary, critical and poetic writing. As such, the subject of this paper is woven from multiple dialogues. It is a practitioner-led account of the design process which produced a specific object. This perspective brings into focus the role of the hammer as tool for shaping timber, assigning particleboard dignity as a material, and the relationship between digital processing and manual workmanship. In parallel to this dialogue between investigator and object is a secondary dialogue that emerges between the practice of the designer, the design and a writer, who is removed from the process of material making but engaged in the wider cluster of ideas and expressions, which become activated as the design process is explicated in language. The perspective of the writer is significantly informed by various lineages of thought that might be crudely grouped within the field of "thing theory", most significantly Steven Connor's different takes on the relationship between thinking and things, sense and substance, Daniel Tiffany's work on lyric substance, and Alfred North Whitehead's philosophical writing on beauty. The tension which gives the paper its structure comes from the personal, reflective, practical and semantic knowledge of the designer and the patterning of associations and theory used by the writer to variously enhance the scope of the writing and research.

Keywords

Thing Theory; Design Practice; Poetic Design; Product Design; Design Writing

Introduction: A thought provoking analogy?

In a context where technological innovation is often reflexively taken to be advantageous and exceptional, the technological distinctiveness, novelty and sophistication of human-to-human collaboration can be under-appreciated. Human beings remain the most advanced technology in the world. Sometimes it takes a

✉ Thomas Lee: Thomas.Lee@uts.edu.au

[1] Faculty of Design Architecture and Building, University of Technology Sydney, Australia

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metaphorical mis-description or analogy-like thinking about a human being as a kind of technology – to make explicit the innovative potentials human-to-human collaboration has for design.

With this analogy in mind we would like to begin by suggesting that one of the things this collaboration has allowed is for the virtual life of an object to develop further than it otherwise might have. The virtual is now often interpreted as being specifically about technology. In particular, virtual reality technology has significantly influenced the kinds of experiences, objects, meanings and practices associated with "the virtual". However, this is quite a limited, context specific application of a word with a far more generous field of application. The virtual also plays an increasingly central role in design practices that engage with digital design and additive manufacturing (AM). For example, one of the most innovative design studios in this area, Assa Ashuach Studio, describes the virtual life of an object as being in the centre of the studio's practice (Ashuach). Ashuach has designed software that allows "product personalisation and reconfiguration within safe user experience online, connecting the trilogy of user, designer and manufacturer" (Ashuach). The virtual existence of the object in this sense allows for greater customisation, with objects created that adapt to the specific limitations and desires of diverse users, social contexts and activities. In this context, such a description means that an object is open to a range of possible adjustments, based on various inputs, before its final design is settled.

The sense of a design remaining open to possibilities is a key aspect of the virtual that can be meaningfully applied to the collaboration between designer and writer discussed in this paper. The designer creates an object based on a combination of contingency and necessity. The writer then encounters this object as a real thing, in finished form. Yet its virtual life hasn't ended here. As the designer and writer begin to share ideas about the history of making and the formal and symbolic elements of the object, a new field of possibilities begins to emerge. The writer is essentially working to create an increasingly detailed rendering of the object in the virtual space of his or her mind, a space where metaphorical and contextual associations are activated and become undifferentiated from the object as a real thing.

One example of this occurred during our first workshop meeting. The designer described his process and intent with the designed object (PRT) there before us in the space it was created (see Figure 1). One of the striking things about the design is the contrast between the two different materials: the smooth, transparent, uniform surface of the glass table top and the opaque, rough, fuzziness of the particle board which is used for the stand. Part of the artfulness of the design is the shaping of this intensity of contrast, into some kind of aesthetic harmony. A shared acknowledgment of this element led to a further discussion of the more obscure association this pairing of materials suggested, specifically the relationship between glass and sand, something suggested indirectly due to the shared particulate nature of the board used in the design and sand, which is the base material for glass. The material concept of "the particulate" was identified as a key element of the design and then related to a broader field of analogous relations, some of which exist in a meaningful relationship with the design.

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This inexplicit association adds a further layer of interpretive meaning to the design work, which remains relevant whether or not it was part of the designer's intent.

Figure 1. Initial material investigations for PRT.

In a media landscape increasingly dominated by the visual, it is taken for granted that product designers will take high-quality photographs or produce videos of their work. The value of poetry as a means to document, communicate and potentially transform the meaning of a design is unsurprisingly far less common. The textual component of a design is typically limited to prosaic descriptions, which have limited value when it comes to creatively interpreting or enhancing a design. Poetic techniques, such as ellipsis, enjambment, metaphor and various kinds of punning, limit the amount of overt information conveyed in favour of deliberately obscure, multiple or suggestive meanings meant to engage the imagination.

As part of the process of this paper the writer composed a poem which shares the same name as the designed object. This was undertaken with the view of gaining a more exact appreciation of how the design might exist in the form of a poem.

> *PRT*
>
> *The open edge fuzzes,*
> *Fibrous, dense*
> *When a drop flattens, glass*
> *Spreads, smooth perfection.*
> *Disc and the spine,*
> *Rough husks tapering, stack*
> *Into crystal still shifting.*
> *Even the transparent*
> *Is mixed.*

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Rather than an exact description the poem works by allusion. It displays a stereotypically modernist preference for ellipsis and an emphasis on the language rather than the subjective situation of the poet. The lack of exactitude and overt visual information (compared to photographic imagery) ideally allows the imagination to become more involved in interpreting both the meaning of the poem and the design. Along with a range of metaphors, the poem is motivated by a key insight that thinking with PRT brought to light: that things which we perceive to be transparent (glass, air, water) are still mixed at an imperceptible level. This is both interesting in itself and because it highlights something crucial about human perception more generally: that there is much obscured yet active in-between what we see and what there is.

Words and things

There is a long history of poets writing about objects. As Daniel Tiffany notes in Lyric Substance: "Archaeological evidence reveals that the earliest poetry in English displays an affinity for objects whose rarity and eccentricity were signalled by a peculiar verbal identity. Indeed, it may be possible to claim that lyric poetry first emerged in English as the enigmatic voice of certain highly wrought objects" (Tiffany, 73). Yet it is not only rare and eccentric objects which have captured the imagination of poets. Tiffany notes that most of the riddles in *The Exeter Book*, an Anglo-Saxon seminal riddle text from the late 10th century, "are familiar objects, and sometimes animals, of the house, hall, farmyard, monastery, or battlefield" (79). These include riddles about leather, a rake, a horn, a plough, a churn and a weaver's loom. As Tiffany writes, "The weird creature we encounter at the outset of the poem turns out to be a phenomenon common to most people's experience; the dark speech of the riddle veils, even as it describes precisely, a familiar object" (79). The riddle in this sense at once *obscures* the object through cryptic language play and illuminates its existence by giving it an expressive voice.

For the purposes of this paper, we want to highlight the way object riddles express an intimate relationship between words and things, and how the use of literary or poetic writing extended the virtual presence of a physical object. Take Riddle 34, *The Rake*, for example:

> *I saw a thing in the dwellings of men*
> *that feeds the cattle; has many teeth.*
> *The beak is useful to it; it goes downwards,*
> *ravages faithfully; pulls homewards;*
> *hunts along walls; reaches for roots.*
> *Always it finds them, those which are not fast;*
> *lets them, the beautiful, when they are fast,*
> *stand in quiet in their proper places,*
> *brightly shining, growing, blooming. (Baum 1963)*

In this example the identity of the object is revealed and hidden through a series of metaphorical references to other things and practices. The rake is described as a quasi-animate thing with "teeth" and "beak" that "hunts", "ravages", "reaches" and "seeks".

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This set of metaphors gives the rake a sense of agency that might otherwise remain inexplicit.

This tradition is continued in a series of more recent poems analysed by Tiffany that display an intense preoccupation with the mysteries of the material world. There is a tendency expressed in all of these poems to describe the material world as a dynamic combination of form and formlessness, of substance and the insubstantial, of clarity and obscurity. Part of this is attributable to the subject matter for the poems – meteoric phenomena such as rainbows, beams of light and storms, swarms, corpses and automata – and part of it, as suggested above, is to do with a certain, longstanding tradition in lyric and modernist poetry, that evokes an image or idea of an object through an indirect field of associations which link to other phenomena. In this sense both ancient riddles and modern poetry combine the intuitive and unintuitive aspects of things to create a description which compels readers to use and in some sense picture the form our imagination might take were its properties embodied in a material phenomena.

The genre of the riddle bears some relevance to the relationship between textual and tangible in design practice. While not considered riddling in the conventional sense, the design brief is a genre of textual communication that discloses and obscures a hypothetical, yet-to-be-made object. Like the objects of *The Exeter Book*, the designs adumbrated in design briefs have an ambiguous identity, which is often suggested rather than explicitly disclosed. This connection between the verbal and physical identity of designed objects is alluded to by Jonathan Ventura and Gal Ventura in the article *Exphrasis: Verbalizing Unexisting Objects in the World of Design* (Ventura and Ventura). The authors modify the term "ekphrasis" – the tradition of describing images in words, primarily used by art and literary scholars – to "exphrasis", which relates to descriptions of yet-to-be-made objects that exist in the shared space between design brief and the mind of the designer.

Yet another different but comparable example of a riddling technique is suggested by Bruno Munari in a short chapter of his book *Design as Art*, entitled *Orange, Pea, Rose*. Munari suggests the strangeness and intricacy of natural objects becomes explicit when imagined as though they were the product of human intention, in other words, if they were designed. The orange is his first example:

> *Each section or container consists of an envelope of plastic-like material large enough to contain the juice but easy to handle during the dismemberment of the global form. The sections are attached to one another by a very weak, though adequate, adhesive. The outer packing container, following the growing tendency of today is not returnable and may be the thrown away. (Munari 2008, 83)*

By obliquely referring to the object, Munari creates a sense of ambiguity as to whether he is describing natural produce or a fabricated package. Like the rake in *The Exeter Book*, which is an inanimate object described as though it were living, the orange obtains a peculiar identity through the metaphorical play in writing.

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Thinking things

Tiffany's work is part of a broader trend towards writing and research about objects in sociological and cultural research. Rather than focus on the social construction of objects and materials by looking at categories like race, class and gender, researchers like Tiffany (2001), Bruno Latour (1996), Lorraine Daston (2008), Mary Poovey (1998), Steven Connor (2000; 2011; 2013); and Marina Warner (2006), to name a select few, have focused on the specific being or ontology of things, the variety of publics they enlist and the fantasies to which they give rise. Connor states this explicitly in an article that gives this approach, somewhat warily, the name "cultural phenomenology":

> *Instead of readings of abstract social and psychological structures, functions and dynamics, cultural phenomenology would home in on substances, habits, organs, rituals, obsessions, pathologies, processes and patterns of feeling. Such interests would be at once philosophical and poetic, explanatory and exploratory, analytic and evocative. (Connor 2000, 3)*

Rather than see our attachments to things as fetishes and phobias produced by some hidden ideological agenda or unconscious drive, thinkers in this tradition focus first of all on the agency, specifics and metaphorical capacity of the things that are said to produce such a response. This might be a specific financial instrument such as double-entry bookkeeping, in the case of Poovey; wax or smoke, in the case of Warner; glass flowers for Daston; or Personal Rapid Transportation devices, in the case of Latour.

Connor's work is particularly relevant when considering the relationship between poetry and things. His book *Paraphernalia* (2011) is a homage to the pervasive, important and yet often anonymous lives of mass produced items, typically found in a domestic context or pocket. These include sticky tape, paper clips, cards, rubber bands, glasses, batteries, pins, bags, plugs and many others. Although not explicitly stated as a technique or method, Connor's primary means for generating novel insights about these objects is what might broadly be described as his poetic turn of phrase. Take, for example, this riff on stickiness in his chapter on sticky tape:

> *Stickiness is vitiated stillness, solidity infected by a slow, syrupy drift, in an insidious conspiracy of the liquid with the solid. It sticks to itself, and sticks other things to it, but its stickiness is a seduction and solicitation, rather than a threat; one can always and easily break the glutinous bond which it intimates, but only at the cost of oneself having become sticky. (2011, 190-191)*

Or his further elaboration, in the same chapter, where the contrasting but contiguous surfaces of the tape prompt some metaphysical speculation:

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> *Sticky tape is magical because it promises that the two sides of the world, the two orders of things, the smooth and the sticky, the distinct and the indistinct, can themselves miraculously be articulated, which is to say, both kept distinct and joined together. Like so many other apparently unremarkable objects, the roll of sticky tape is a philosophical machine. (191)*

In addition to his work on things, Connor has developed a vocabulary to elaborate the complicated relations we have with substances. This includes various essays on "quasi-choate" phenomena such as sand and dust (2010) and his concept of "senstances", which, like his work on thinking things, proposes that hybrids of subject and object, or in this case, sense and substance, are a more useful interpretive unit for an understanding of culture than either subject or object in isolation. Connor describes a senstance as "a substance so closely twinned with a sensation as to have become cosubstantial with it" (2013). The examples he uses are the slimy, the sticky, the shiny, "the brittle, the tenuous, the cool, the granular, the smooth, the matted" (2013).

In his paper, Connor discusses his mother's phobic relation to sugar, which sees an example of the complicated emotional responses induced by different materials and the context in which they become sensible to us:

> *She had no difficulty with most of the ways in which sugar was packaged and put to use, just as long as it was not spilled, on the table, or, most abominable of all, on the floor. Then there was a kind of horror, that I have never myself felt directly, but feel that I can now feel by proxy, the horror of the sudden explosion of the tractably pourable substance into innumerable grains felt beneath the fingertips and, most appallingly, the crunch, as of tiny, mobile molluscs, under your feet, a milling maceration that then sticks to you, that you carry with you on your soles, and renew with every step. (2013)*

This insight usefully captures the sense of materials existing simultaneously as events with interacting physical and psychological properties. Connor's mother responds in a highly specific psychological and emotional manner to an equally specific material event. Connor is deliberately resistant to the psychoanalytic tendency, both popularised and professional, to see such responses as "a masking in material form of more abstract fears and desires" (2013). Connor argues that this neglects "the most important thing about the fetish or phobia, namely that it represents the fascination of matter as such" (2013): in this case, a peculiar combination of granularity, stickiness and the "explosion" of sugar on the floor. He gives the insight further nuance by pointing out that salt, which is a substance of comparable granularity, didn't provoke the same response for his mother due to its lack of stickiness:

> *Salt rolls smoothly across the surfaces on which it has been spilled, leaving them as clean as, or maybe even cleaner than they were before. Grains of sugar exert a disgusting little tug at the surface on which they have been spilled, clinging like mites in hair. Salt is lapidary, jewel-like in its dryness; sugar seems quasi-animate. (2013)*

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Connor thus unfolds a rich series of insights from a mundane story. His writing glows with a kind of readiness for further development.

This story and the way Connor uses it to elaborate a metaphysics of stickiness is a useful framing device for understanding the way different materials exist as part of a designer's emotional, perceptual and cognitive experience. A different version of something similar is evident in the initial inspiration for PRT, which came from the masses of broken particleboard that typically builds up in the construction skip bins and on hard rubbish collection days. This build-up or explosion of formless material niggled away in the mind of the designer, provoking periods of contemplation about how to give meaning to this typically undervalued material.

Figure 2. Discarded particle board.

Designers respond to formless material by giving it form, ideally in a way that manages to preserve the distinctiveness of a material. In PRT, the particleboard is given form and allowed to express its peculiar attributes. By deliberately breaking the edge with a rudimentary yet precise hammering technique, adapted specifically for the purpose of this design, the designer both accentuates the particulate properties of the particleboard and brings the material into an overall coherence through a thoughtful, meticulously realised design. The fuzzy edge of the material is an element which is abstracted from the context of the overflowing bin, shaped and brought into relation with other elements, so that it is assigned a dignity it might have otherwise lacked, whether hidden beneath a surface finish or discarded in a bin as waste.

Philippe Starck's "Jim Nature" for Saba is a comparable exercise drawing attention to the aesthetic distinctiveness and beauty of a typically ordinary, cheap material that has uneasy relationship with fine wood craft. Starck references the early 20th century radio and television sets, which once housed the relevant media technology inside timber box

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constructions, a process that was completely replaced by moulded plastic products. Like PRT, “Jim Nature” features composite wood, in this case resin-impregnated sawdust and wood powder for outer casing of a television set. Both designs foreground the unique particulate quality of the materials. However, in comparing the two we can appreciate some of the distinctiveness of each design with regard to the expressiveness of the materials. The form and technique chosen for the television resulted in a relatively smooth finish, with less textural detail than PRT. The unique construction method of breaking the edge of the particle board with a hammer created a distinctive rough-hewn effect, with a varied, porous surface finish. The expressivity and distinctiveness of this effect evokes a peculiar combination of the senstances listed by Connor, including the brittle, the granular, as well as the fuzzy and rough (see Figure 3).

Figure 3. PRT final design.

Pied Beauty and intensity of contrast

An important element to Tiffany’s notion of lyric substance is the fascination poets have expressed with certain manifestations of contrasting phenomena. Tiffany (2001) refers to a poem by Gerard Manley Hopkins titled *Pied Beauty* in which the poet praises “dappled things”, such as “finches’ wings”, “landscape plotted and pieced”, “a brindled cow” and many other examples (quoted in Tiffany 93). In Hopkins’ verse pied beauty is expressed as more profound than simply the “strange” or contrary coming together of two opposing things. It is equally important that such phenomena give some deeper insight into a rudimentary protean force, something “original” and “spare” which suggests a dynamic relationship between creation and destruction. Hopkins captures this in the phrase “beauty is past change”, meaning that pied beauty of the kind he

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describes gives some indication of an in-between state, form and formlessness, or what Connor calls, the "quasi-choate" (2012).

The exact nature of the thing which Hopkins describes here is necessarily difficult to picture in a clear and distinct fashion. This is for two reasons: firstly, there is, as Tiffany notes, a kind of riddling taking place in his poetry which deliberately both discloses and obscures the referent of the poem, and secondly, the referent itself is a something which "hover[s] just below the threshold of objecthood" (2001, 93) and is thus difficult to describe in a straightforward sense. The subject matter of the poem is both the natural phenomena and the response of the poet, which is a combination of feeling, perception, imagination and cognition, given expressive form in language. We are often only dimly aware of the way these different elements of experience come together in a singular perceptual event.

The notion of beauty being the harmonious coming together of contrasting phenomena is a crucial element to the theory of beauty and aesthetics put forward by Alfred North Whitehead. Whitehead was a mathematician, physicist, philosopher, perhaps most famous for his work with Bertrand Russell on the *Principia Mathematica*. He moved from England in the twilight of his career to teach philosophy at Harvard. Here he departed from the key concerns of his previous logical and mathematical investigations. Whitehead began writing an expansive brand of philosophical speculation, attempting to weave together the findings of modern physics, including the theory of relativity, with a more general account of how perception worked.

Whitehead's work is particularly tricky to cite in a fragmentary way because he develops a highly technical, interconnected system of concepts that depend on each other for meaning. His mathematician's penchant for abstraction does have the advantage of making the work applicable across diverse domains of experience and the generous space he gives to aesthetics offers a level of appeal for the multitude of vaguely perceived yet important influences which are realised in a creative act.

Whitehead interprets beauty as being determined by two factors, one minor and one major. The minor factor is "the absence of painful clash, the absence of vulgarity"; the major factor is the introduction of new contrasts which increase the intensity of feeling (1967, 252). This is the high-level summary. A closer reading reveals a nested hierarchy of different terms with subtle, technical meanings:

> *the perfection of Beauty is defined as being the perfection of Harmony; and the perfection of Harmony is defined in terms of the perfection of Subjective Form in detail and in final synthesis. Also the perfection of Subjective Form is defined in terms of 'Strength'. In the sense here meant, Strength has two factors, namely, variety of detail with effective contrast, which is Massiveness, and Intensity Proper which is comparative magnitude without reference to qualitative variety. But the maximum of intensity proper is finally dependent on massiveness. (1967, 252-253)*

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It requires patience to make sense of it all. To begin with, it's essential to know that for Whitehead, "Subjective Form" does not necessarily mean human subject. Whitehead writes about perception in more abstract terms which apply to events influencing each other through time – it's worth remembering that he was writing at a time when it was common for philosophers of his stripe, with a background in mathematics and physics, to be thinking a good deal about theories of relativity. Subjective Form is the way one event responds to another: "how that subject feels that objective datum" (221). This might be the way I respond to myself as I was three seconds ago, the way the grass responds to the sun, or the way a designer responds to a pile of particleboard – potentially quite tricky stuff to comprehend. The language of modern physics ("strength", "intensity", "massiveness") is applied to a wider field of reference with aesthetics as its key motivating force. There's also something algebraic in the syntax, with meaning emerging through the gradual building and manipulation of a system with subtle rules and obscure symbols. But the meaning and usefulness is there. Massiveness, which Whitehead describes as "variety of detail with effective contrast" is the key determining feature of beauty. This is more important than "Intensity Proper" which is less about specific qualities and more about force. To translate the language into something with a more obvious application, Intensity Proper might have something to do with irreverence, boldness, a raw show of force, whereas Massiveness is quality and detail dependent. The two typically go together.

The insights from Tiffany and Whitehead help make explicit the aesthetic achievement of PRT. The design brings a range of different contrasts into harmonious relation. These include the roughness of the broken particleboard and neat geometry of the circle; the even greater contrast between the smooth surface of the glass and the rough particleboard; the contrast between the transparent glass and the dense, opaque particleboard; the brutal and lo-fi method of breaking timber panel product with a hammer contrasts significantly with the precision and high-tech nature of digital machining; and the contrast between the typical brutality of the action of hammering and the relatively gentle, coercive ends to which it is put in this design.

The hammer

The hammer has been a favoured tool in philosophical thinking, particularly in the philosophy of technology. It's a kind of index to changing tempers and inflections in a gratuitous archive of speculations about relations between subject and object. Perhaps the most famous is Martin Heidegger's use of the hammer in *Being and Time* (2002) to articulate different elements of his philosophy of tool being. Heidegger uses the hammer as a paradigmatic example of equipment (*zeug*), objects that we use for specific ends. More recently, Bruno Latour (2002) turns to the hammer to outline a theory of technical action that is generous enough to include the different places, times and agents we connect with in using utensils. Latour emphasises the transformational power of tools in a way that captures the experience of designers immersed in the possibilities of the objects they use: "Those who believe that tools are simple utensils have never held a hammer in their hand, have never allowed themselves to recognize the flux of possibilities that they are suddenly able to envisage" (2002, 250). Rather

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than being an extension of human capacity, the tool plus human is a completely new situation.

For the designer, PRT is as much about the hammer as any material, furniture typology, form or style. In this case, the hammer is among the most rudimentary tools used by designer-makers. It still possesses a reassuring intimacy with the actions it has evolved to accomplish. Despite, and in a sense due to this apparent simplicity, the hammer is also a particularly adaptable technology, open to a variety of subtle modifications in use. The hammer over its long history has evolved into literally thousands of variations including hammers for blacksmiths, jewellers, panel beaters and many more. In some senses it is like a ball, which Connor describes as a "magical thing" due to its "indeterminate kinds of affordance": "A ball is a magical object because its affordances, its ways of proposing itself for use, are at once irresistible and yet also so seemingly open. The more common an object is, the more various the uses it will propose, or make possible" (2011, 3). While the hammer is irresistibly about hammering, it is also versatile or "seemingly open" in its application and its form.

PRT involved a simple yet innovative use of the hammer. In woodwork hammers are typically used in combination with chisels and nails, or to force joints into place. However, in this design the hammer was used in combination with an anvil and a CNC router. The CNC router first produces the cut-line, a series (sometimes hundreds) of small perforations equidistant from each other along a predetermined path. This cut-line performs the dual role of informing where the hammer should land and where, in a controlled manner, the material should break. The hammer is then used in combination with an anvil to work the circumference of the circular cut-line with many small and repeated knocks, sometimes hundreds, in order to first crack and then break the unwanted material away (see Figure 4). The action of the hammer is limited to avoid unnecessary breakage, similar to how a panel beater or metalsmith works a material from edge to edge.

The hammer is essential in achieving the rough effect that allows the particleboard to express its specific material quality. Both the material and the tool depend on each other: the shorter, uniquely mashed-up grains of the particleboard permit certain kinds of breakage not possible with longer grain wood. The hammer allows this quality to become explicit by a controlled breakage, which leads to a completely different material effect than from sawing or chiselling.

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Figure 4. Hammer, anvil and particleboard.

Conclusion

Rather than provide a framework or method for future research, we have chosen to adopt a digressive, analogy driven structure for this paper. In keeping with this approach, it is fitting to conclude with another analogy, which illuminates the specific kinds of insights we have brought into focus and suggests a future direction for the development of a more systematic approach.

Herb Greene's *Painting the Mental Continuum* (2003) is an exemplary application of Whitehead's philosophy to a practice of creative making. Greene is an architect and artist; in the context of his book he focuses on his art practice of collage making, which involves combining images that "persistently move" or interest the author with his "own painted interpretive forms" (14):

> *After transferring an image to a canvas, I surround and overpaint it with a visual commentary, an organised rumination stemming from details, parts, and wholes that respond to what seems to me some of its important forms and messages. (14)*

Greene then uses Whitehead's philosophical vocabulary and concepts to "gain fresh content and precision in [his] explanations" (23). More so than formal and semiotic analysis in the style of thinkers like Roland Barthes, Whitehead's concepts and Greene's use of them are distinctive in the place they give to the active role of the imagination in perception, reasoning and making. The process of interpreting an image is also distinctively informed by Whitehead's focus on the perceptual act as the outcome of events interacting with each other in time. The human subject is one perceptual event amid others that cuts across and distorts the relationship of different events (Greene,

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30). The act of interpreting and making and Greene's analysis of it bears the imprint of this unique philosophical emphasis. In the context of this paper, the designed object has functioned in a way that is similar to the images Greene uses in his collages. This paper has been "an organised rumination" in the sense described by Greene, where the inspirational object is given a new interpretation and situated in what Whitehead describes as the "enduring personality" of a design writer (quoted in Greene, 21). Like Greene's collages, which surround the original stimulus in a penumbra of variously obscure and distinct metaphorical, theoretical and contextual associations, this paper has situated PRT within a flow of curated events that have extended and transformed its meaning.

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About the author

Dr Thomas Lee is a Design Researcher whose work focuses on the usefulness of contemporary aesthetic theory, poetics and design philosophy to design practitioners. He is Director of the Masters of Design program in the Faculty of Design Architecture and Building at the University of Technology Sydney.

Berto Pandolfo is the Associate Head of the Design School in the Faculty of Design Architecture and Building at the University of Technology Sydney. His research interests in design are focused around the aim to investigate and experiment how new and emerging technologies can be introduced and ultimately benefit product design and the end user in a non-exclusive manner. Another key area of interest is the articulation and validation of practice-led design research.

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Pride of Place: Co-design, community engagement and the Victorian Pride Centre

Gene Bawden and Alli Edwards[1]

Abstract

XYX Lab, at Monash Art Design and Architecture, Melbourne, is a newly formed research collective of design academics and practitioners examining issues pertaining to communication and spatial design practices interrogated through the lens of gender identification and equity. Determined to make real-world impact, the Lab's remit is to collaborate with real-world stakeholders: other researchers, activists, affiliated groups, policy makers and the broader public. To this end we have developed a number of design thinking "tools" – two- and three-dimensional play-based prompts – through which we engage workshop participants in co-design processes that activate participatory story-telling. The tools permit our diverse collaborators to align themselves to shared ideas; extend innovative discovery; dispute contentious concepts; and reveal new insights that inform the research of the Lab and the objectives of the stakeholders. The most significant of these workshops was undertaken with the newly formed Victorian Pride Centre Board in late 2016.

In April 2016 the Victorian State Government announced their intention to establish the first Australian Pride Centre in Melbourne. The Pride Centre will galvanise the city's diverse LGTBIQ community through a physical and metaphoric site of support and celebration. Buoyed by the clear commitment of the State Government to recognise, respect and empower gay, lesbian and non-binary gender identity, the members of XYX approached the newly appointed Commissioner for Gender and Sexuality, Rowena Allen, with an offer of design thinking workshops that would surface the Pride Centre's key ambitions. The Centre must be more than a building, the identity of which is construed simply by its location and tenants. It needs to define itself through a clear, careful and outward facing communication of its culture, values and history. To this end the Lab set about constructing a bespoke set of design tools for the Pride Centre Board to engage with in a one-day workshop. The tools produced a sequential revelation: personal affiliations and deeply held opinions from the various legions of the LGTBIQ community shifted through a progression of interactive, performative and play-based activities towards a united consensus on the Centre's higher purpose.

✉ Gene Bawden: gene.bawden@monash.edu

[1] Monash University, Art Design and Architecture (MADA)

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Use of the bespoke tools, hand-made by the Lab members, revealed the importance of well-designed, engaging and intersected prompts in revealing and extrapolating ideas from a community, that, at times, may be suspicious of participatory methodologies that activate story-telling as research. This paper reveals how the tools facilitated the participants' engagement, and how they have helped shape the future thinking of the Pride Centre Board.

Keywords

Victorian Pride Centre; LGTBIQ; Design Thinking; Co-design; Design Workshop

Setting the stage

In April 2016 the Victorian Minister for Equality, Martin Foley, announced the State Government's $15 million pledge toward the establishment of the first Australian Pride Centre in Melbourne. Only a month before, a small research lab was initiated within the Faculty of Art, Design and Architecture at Monash University, located in the same city. The researchers – collectively defined as XYX Lab – are six design academics and practitioners who, independently and collaboratively, examine issues pertaining to gender identification, equity and safety, but through the lens of spatial and communication design practice. Unknown to the Lab then, the confluence of these two initiatives would provide for an extraordinary opportunity. XYX Lab was small, new, untested and unknown. The Victorian Government was (and is) none of these. Nonetheless, buoyed by the potential for possibility, the XYX Director, Dr Nicole Kalms, contacted Minister Foley in the spirit of congratulations, and with the offer of the Lab's fledgling expertise towards the formation of the new Pride Centre ethos. With little expectation of a reply, we were delighted when a return letter soon arrived listing the contacts and introductions we needed to pursue our further engagement with the Pride Centre and its Board.

The Pride Centre project was the first significant collaborative design engagement undertaken by XYX Lab that permitted us the opportunity to explore and test our own mode of collaborative design inquiry. This is one that engages traditional research methods intersected with the findings of generative, co-design processes that use bespoke design thinking tools built specifically for an identified challenge. The paper will illustrate how we use this workshop methodology to both assist stakeholders towards their goals, and at the same time inform the Lab of key questions pertinent to its own research ambitions, and importantly reveal the possibilities and limitations of our methodology. The Lab's approach is one that continues to appreciate the material beauty of the designed object (design as a "thing"); whilst revealing how it transcends into the more temporal, expanded realm of contemporary design practice and research that embraces shared experiences, collective narratives and embodied learning (design as an "action"). Our approach also enables solution-oriented thinking (design as "sense-making"); and provides a framework for further investigations (design as "inquiry"). Core to the methods of the Lab are what Peter Dasgaard describes as

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"instruments of inquiry" (Dasgaard, 7). These are physical tools specially designed to collectively generate ideas that "support perception, revealing facets of a situation that would otherwise remain hidden" (Dasgaard). Our "instruments of inquiry" have become integral to the methods of the Lab; helping us to locate design at the core of research questions more readily fielded by gender and sexuality scholars. Our ambition is to position spatial and communication design research within gender-focused challenges, and in doing so, add new design perspectives that enhance the substantial inquiry already occurring in this field. Rather than default to a consultant design practice simply engaged to help realise the solutions of others; the Lab is determined to be participant in the processes that lead to discovery; but with the design capability to facilitate solutions that make genuine contributions to addressing gender inequity in Australia.

XYX Lab specifically seeks to understand how gender and sexuality may limit who and what contributes to the production of – and participation in – the spatial culture of our cities. The Lab intends to reframe equity issues relevant to the contemporary expansion of gender identification through "designerly" ways of thinking, but with a focus on design practices activated in urban environments. As cities develop and grow they construct – deliberately and organically – a visual and spatial dialogue that communicates particular messages of gender inclusion and exclusion. Signage, advertising, architecture, amenities, lighting, pedestrian traffic and public transport infrastructure amalgamate to create public experiences that portray "safety" or "threat"; and these experiences can be felt deeply by women, marginalised cultures, and members of the LGTBIQ community. According to the United Nations, "in addition to urbanization itself, the lack of inclusive, gender sensitive and pro-poor policy frameworks and governance have led to exclusionary trends in urban development" (UN Habitat, 10). Through scholarly, practice-led and participatory research XYX Lab intends to locate ways in which design interventions can help mitigate the anxieties of people who feel threatened within the spatial fabric of their city because of their gender or sexuality. Of course, this cannot be successfully achieved if the Lab operates as a single, siloed entity. We must collaborate with a myriad of partners: other academics, other designers, gender and sexuality experts, community members, not-for-profit organisations and government policy makers. As our first collaborator we could not hope for a better partner than the newly formed Victorian Pride Centre Board.

"It is not enough to provide a building; to get a good architect; or a great site; or a catchy logo. It is about the shared purpose and messages that run through the spaces, [and] the systems of communication that make a great Pride community" (Kalms). The "messages", "spaces", and "systems of communication" – in essence, the Pride Centre identity – cannot, as Kalms suggests, be construed simply by a location, a building and it tenants. The messages need to be crafted, the spaces curated, and the systems of communication aligned to a shared belief system that a broad and diverse community are happy and proud to assign their futures to. Well before an architect, The Pride Centre needed a vision – a vision collectively framed through a participatory community research engagement; what Liz Sanders and Pieter Stappers have termed "generative design research". "Generative design research gives people a language with which they can imagine and express their ideas and dreams for a future experience"

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(Sanders and Stappers, 14). The "future experience" of the Pride Centre cannot be determined by an outsider or even a well-meaning intermediary, but by those whose values and belief systems will be deeply entrenched in the Centre's daily operations. Users are, as explained by Sanders and Stappers, "experts of their own experience" (Sanders and Stappers, 24). In the case of the Pride Centre, to neglect the contribution of its future users, is to disregard the cultural expertise, powerful relationships and specialist knowledge drawn together over decades by the LGTBIQ community. More than an intermediary between architect and client, the Centre required a facilitator that would, through a process of community co-design, help frame the vision that would then inform the architect's brief.

Reaching out: Making contact with the Pride Centre

Following the arrival of the letter of invitation from Minister Foley, the Lab quickly made contact with the newly appointed Commissioner for Gender and Sexuality, Rowena Allen. Allen's assumption to the role in mid-2015, followed by the announcement of the Pride Centre in April 2016, and the Premier's subsequent state apology to those convicted under its previous draconian anti-homosexual laws; indicated the State Government had a clear commitment to recognise and respect diversity. This commitment clearly aligned with the agenda of the XYX Lab, and despite being inexperienced in the facilitation of co-design workshops, we were confident that we could offer the Commissioner our particular expertise. As designers we trust our instruments of inquiry to guide the participants through problem solving "without knowing exactly where they are heading, and trust their... use of instruments to help them build new understandings along the way" (Dalsgaard, 28). With little more than a promise of success and a pro-bono agreement; Commissioner Allen introduced the Lab to the Pride Centre Board and its CEO, Jude Munro. With Munro, a date was set, an agenda established, and a purpose clearly defined for the first Pride Centre Board workshop to be held with XYX Lab. The workshop would address the core beliefs of the Centre through examining the culture, values and history of Victoria's LGTBIQ community.

The workshop: An introduction

In October 2016 the various representatives of the new Pride Centre tenancy were invited to a whole-day workshop at the Caulfield Campus of Monash University. The 20 invited participants, who collectively formed the first Pride Centre Board, included representation from Beyond Blue, Melbourne Queer Film Festival, the Australian Lesbian and Gay Archives (ALGA), Switchboard, Joy FM, and the Victorian AIDS Council. The geographic location of the Monash venue was an important consideration. It did not privilege one group over another, but positioned each representative as an equivalently valuable player in the day's workshop activities. For the members of the XYX Lab, the diversity and number of participants were among our most important considerations. As designers and academics, we are active participants in the changing landscape of design practice and research. Design and the academy are both moving away from the heroic, solitary achievements of sole authorship. As explained by John

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Thakara, designers have had to "evolve from being the authors of objects and buildings, to being the facilitators of change among large groups of people" (Thakara, 7). To genuinely engage in co-design actions the designer-researcher in particular must assume the role of facilitator (Sanders and Stappers, 24) over the role of revered, creative specialist. A facilitator must have the capacity to engage the creative sensitivities of a diverse audience, draw out novel ways of rethinking challenges, and draw together the individual threads of the group's discoveries. The facilitator/ designer/researcher must operate in a unique framework that acknowledges a more people-centred and equitable process of creation. This does not, as argued by Rama Gheerawo, "herald the death of the individual designer or innovator, but signals an evolution of the role to a more multifaceted stance where users become participants, evaluators and even authors of solutions" (Gheerawo, 304). The Pride Centre workshop was critical to XYX developing its own approach to co-design, and provided a rich testing ground for a number of innovative design thinking tools that both "drew out" and "drew together" the collective ideas of the Pride Centre community. As argued by Adam Thorpe and Lorraine Gamman:

> *Design and designing is able to bring people together around a shared concern, assembling a 'public', a potential designing network which, with the necessary catalyst, may precipitate a 'design coalition' composed of many people, with many interpretations of a problem... They have to agree on goals and actions for reaching them in the process of 'reframing' the problem as an opportunity for positive change. (Thorpe and Gamman, 326)*

The "catalyst" employed by the XYX lab to stimulate the creative exchanges among the Pride Centre community loosely followed the familiar Stanford d.school "design thinking" methodology, but without the linear, systematic and broadly applicable qualities inherent in their process. The d.school model of "empathise, define, ideate, prototype and test" was the foundation of the workshop, but the language was altered, and our process designed to permit periods of reflective return to earlier ideas. Most importantly our ideation tools differed considerably to the usual 3M Post-it mapping generally employed in design thinking exercises. The XYX group devised a number of bespoke, two- and three-dimensional tools to elicit the creative thinking of the Pride Centre Board through a process of physical making. Being bespoke – design thinking objects designed specifically and only for them – engendered a feeling amongst the Board of being "special" and thoughtfully catered for. Unique, purpose designed tools that clearly embraced the visual vernacular of the LGTBIQ community, indelibly connected the workshop participants to us, to each other, and to the processes they would undertake throughout the day.

The process of "thinking through making" is a vital component of the XYX methodology. Often overlooked in traditional design thinking workshops, or intentionally left out in the interest of time, is the physical construction and material thinking that is so integral to creative practice. "Within design the focus on making and building and practical creative problem solving is at the foundation of the discipline" (Graham, et al, 410). Through making and re-making designers can explore and test

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multiple possibilities before settling on their most informed solution. Making, be it stories, artefacts, or a confluence of the two, is how the Lab engages its workshop participants. But, the concept of "making" is introduced through carefully measured engagements that build up confidence and allay personal anxieties of "creative" capacity among a non-design community. "Everyone designs who devises courses of action aimed at changing existing situations into preferred ones" (Simon, 67). Here Herbert Simon locates "design" as an action of betterment not merely beautification. And, by including "everyone" who enables positive change, he removed the ego-centric mantle of "designer" from trained professionals to include a broad community of influential change-makers. With this in mind the XYX Lab had to carefully nurture its own community of change-makers in a single day through a sequence of exercises that developed their creative confidence as much as surface their ideas.

Pride is ... empathy: The Tetrahedron introduction

To establish an empathetic passage for the problem solving that would ensue throughout the day, the Lab devised a tetrahedron identity project for the participants to undertake as their first engagement with material thinking (see Figure 1). As already identified, "thinking through making" is a core principle to our methods that helps participants realise solutions with more complexity and nuanced narratives. As explained by John Bielenberg, Mike Burn and Greg Galle:

> *something happens when you move from a thought to a thing. You understand the challenge and opportunity more deeply through making which leads to richer solutions. Making triggers a new form of thinking... making is essential to understanding. (Bielenberg, Burn and Galle, 149)*

The flatplan of a Tetrahedron – four equilateral triangles that would eventually form into a pyramid – was provided to each participant. At the core of the plan was a simple provocation: "Pride is...". Here they would complete the sentence with a foundation word: the one they associate most strongly with "Pride". The remaining surfaces permitted three further responses to the provocation: a reflection on the meaning and potency of the word "Pride" to themselves as individuals, and the LGTBIQ community, nationally, globally and historically. Slender leaf-shapes abutted the triangles. On these participants were asked to consider the qualities that would unite one surface to its corresponding other. For example, one participant connected "community" to "respect" with "listening"; immediately identifying the need for community consultation in the Pride Centre processes. Once complete, the participants were asked to cut out their plan, and fold it into its intended pyramid form.

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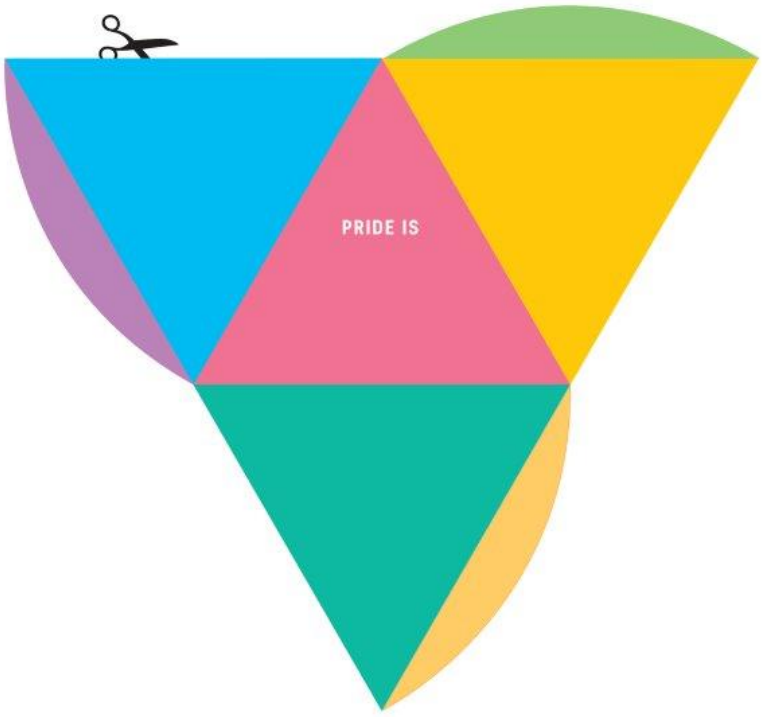

Figure 1. "Pride is..." tetrahedron flat plan.[2]

The Tetrahedron was chosen for its simplicity of construction (six easy folds with no adhesive), but also for its structural strength. The form metaphorically reflected the strength the Centre would need to exude in order to match the strength of conviction inherent in the history of the LGTBIQ community. This was the first foray into making, and started to illustrate how these physical materials could "support the generation of novel solutions, or help [communication] with other stakeholders in a design process" (Dalsgaard, 22). Pyramid in hand, each participant introduced themselves to their co-design community through the structure, explaining their choice of keywords, and the qualities they believe held the form together. Once their narrative was complete they were invited to suspend their pyramid from threads already located in the centre of the room (see Figure 2).

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Figure 2. Individuals presenting their tetrahedron and constructing their physical word cloud.

Once all participants had completed their introduction, a mass of ideas in the form of a physical "word cloud" emerged in the centre of our workspace. There for the remainder of the day, the tetrahedrons served as a reflective point of reference as we moved through the other exercises, to ensure the original narratives of conviction were being respected throughout the co-design journey. As explained by Sanders and Stappers, "ideas can be thought of as clouds of association" (Sanders and Stappers, 43). Each participant was able to articulate their understanding and commitment to "Pride", but also locate it in a collective narrative: building associations and identifying shared beliefs and convictions. Among the most repeated terms were "community", "celebration", "inclusion", "unity" and "support". Immediately the participants were beginning to realise their workshop ambition: to identify the qualities that needed to exude from the physical and philosophical architecture of the Centre.

Pride looks like: Defining the needs of the Centre

Following the tetrahedron exercise the participants were asked to self-select into six collaborative teams, each one approximately four strong. Each team would concentrate for the remainder of the day on their self-identified mission: to extrapolate what is meant by "culture", "values" and "history" in the Pride Centre context. This resulted in two "culture" teams, two "values" teams and two "history" teams with an XYX

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facilitator present in each. The following exercise required the groups to concentrate on their core principle (culture, values or history) and, using various sized cardboard shapes, they were asked to identify key ideas pertinent to their theme; but also to assign a physical scale value to it. For example, one of the "values" team decided that a public, visible presence that proudly embodied "courage, inclusion and respect" needed to be a dominant form, both physically (in the building) and virtually (via the web) (see Figure 3).

Figure 3. The abstract floor plan. Using different shaped cards of various sizes the workshop participants mapped the needs of the Pride Centre.

This was simply represented by a large yellow card, around which the team located smaller forms that represented such ideas as intimate spaces for consultancy and support; free spaces for volunteers to book without charge, flexible studio spaces for arts and cultural events, and story-telling venues or devices in and around the building. Pinned to the wall, the composition of shapes began to represent abstract floor plans. These in no way reflected how the actual building might look in reality, but in every way identified what situations that must be enabled in the actual Pride Centre realisation.

This exercise was the first that asked the participants to engage collaboratively, unlike the independent voices that simply came together to form the tetrahedron narrative. In this exercise they were charged with settling upon a common vision. One of the strengths of any design thinking process is the collaborative spirit of its engagement. As explained by Idris Mootee, "design thinking helps structure team interactions... and align participants around specific goals and results" (Mootee, n.p.). Every participant was at once a member of a common board (and temporarily a member of a co-design team), but at the same time, each was also a representative of the various stakeholders that would take up tenancy in the Pride Centre. Although united by a commitment to the LGTBIQ community, they were also charged with representing their individual

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sector within that community. Simple exercises like the abstract cardboard floor plan permitted individual sector needs to be represented in an overall collective vision; ensuring the multitude of needs were both heard and recorded.

A transformation timeline

A journey map is a familiar design thinking tool, and often employed by those engaged in user experience design. They enable designers to visualise a user's engagement with their world, and they help identify pain-points, frustrations, needs and wants. In the spirit of a journey map the XYX team devised a "transformation timeline" for the Pride Centre Board. This modification of the typical journey map included the benefits of "backcasting", a method that guides participants to work backwards from a desired state – in this case, the fully completed and functioning Pride Centre. This method "allows the emergence of desired futures as a product of the process of analysis and engagement" (Robinson 854), and guided each team as they worked backwards and started plotting the steps to achieve their goals. Across a linear timeline each group was asked to identify key signifiers of developmental success; alongside any disruptions that might impede its progress. Intersected into the timeline were the events and organisations that already herald "Pride" within the city without a physical centre supporting them. These include such Melbourne institutions as the Midsumma Festival, the Australian Lesbian and Gay Archives, Joy FM and the Pride March. Before the Centre is complete it falls to these institutions and events to retain the visibility and presence of the LGTBIQ community in the city; therefore, it is important that they feature in the Centre's transformation story before, during and after the physical completion of the building.

By way of example, one of the "culture" groups divided their timeline into three significant phases: "storming", "forming" and "performing" (see Figure 4). "Storming" involved the processes of community consultation, establishing a funding model, and agreeing upon a shared vision. The "forming" phase involved the inevitable disagreement on direction—what the team described colloquially as "the bitch fight". Regardless of what altruistic vision might be enshrined by the Board, amongst a community so diverse there is bound to be voices of dissent and disagreement. Like a political party a struggle amongst the LGTBIQ factions for a position of privilege was acknowledged as a component part of the "forming" phase. The "culture" group bravely pointed to this "inevitability", but reframed it from a "problem" to an "opportunity"; an opportunity to re-evaluate and strengthen the direction and ambitions of the Centre. The final phase, "performing" described the Centre as a functioning entity, acting out the expectations of the community and realising the vision established by the board and augmented by the community itself.

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Figure 4. The "transformation timeline".

The later analysis of the timelines permitted the XYX lab to extricate key events and ideals pertinent to each group. For culture, values and history: what would be the evidence of their inclusion in the Centre after five years? From the timelines we could determine that "culture is leadership" and "culture is celebration"; "history is archives" and "history is story-telling"; and, "values are inclusion and celebration" and "values are courage". These guiding principles where then aligned to the visible evidence that would be seen, felt and activated in the Centre. For example, the "culture" groups identified network mapping, financial resilience, the Centre narrative and a charter for cooperation as evidence of "Leadership". Visualising queer history through an exhibition calendar, structured education programs, and expanding the modes of community engagement with ALGA through artefacts, collections and virtual experiences would identify that "History" was being respected and shared in the Centre. "Values" would be evidenced through the Centre's ability to support and promote Indigenous and less visible communities among the LGTBIQ; its respect for multiple cultures and languages; and, more topically then, its support of marriage equality and the expanded definition of "family".

The abstract floor plan and transformation timeline exercises were instrumental in shepherding, refining and intersecting the ideas of the Pride Centre Board. Their physical, interactive quality allowed the groups – and the individuals within them – to give form to their ideas so they could be understood, shared and quickly evaluated (Bielenberg, Burn and Galle, 148). Just as this is a pivotal activity within any design practice; when the process is shared with, and led by, a user group, the process is a means to envision an action – rather than a product – that leads to a specific outcome which is useful for many (Margolin, 39). For example, dispute, or "the bitch fight" as one culture group referred to the pain-points in the Centre's development, emerged among the groups within the workshop itself. A discussion by one group of the need for "women only safe spaces" within the Centre, immediately challenged its principle of inclusion. How would such a space of privilege be understood by, and impact on, people who identified as women, but were not born as such, or people who identified in entirely non-binary gendered ways? The need for the space was acknowledged – women find few spaces of refuge in our cities, and Lesbian women, even fewer – but this position is becoming increasingly shared by others, including transgender and intergender people. The discussion led to an understanding that the building itself

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needed to be fluid, permitting private spaces that could be adapted for use by any subgroup, collective or LGTBIQ organisation; but not named as specific to any. At no point was this positioned as a compromise, but rather a better solution. As explained by Thorpe and Gamman, "at the heart of design is the need to mobilise cooperation and imagination" (Thorpe and Gamman 320). Using visualisation tools the groups were able to identify a challenge, but collaboratively work through it using design thinking as both a mode of "sense making" and "problem solving" (Thorpe and Gamman 326).

Building Pride: the summative "object-thinking" exercise

Throughout the entirety of the Pride Centre workshop a colourful, playful centrepiece was an ever-present, but largely unacknowledged feature of the day (see Figure 5). The XYX Lab deliberately drew no attention to it. It drew its own attention by its physicality, scale and colour; but the workshop participants had no idea of why it was there beyond a visually seductive focal point. For the duration of the workshop its role was ornamental, providing little more than a lively backdrop for the Instagram picture-stories that participants constructed throughout the day. Unbeknownst to them, this collection of blocks, bridges and pyramids formed loosely into an archetypal cityscape of skyscrapers, buildings, flags and signage, would become the summation of the day's activities, and the ultimate revelation of their ideas demonstrated through material thinking.

Figure 5. The Pride City, before the workshop participants were invited to take it apart and imbue the elements with narrative and meaning.

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The blocks had been constructed over a week by the XYX Lab. Their colour and pattern drew heavily on the extended rainbow of the LGTBIQ flag, that now includes black and brown in acknowledgement of the ethnic and cultural diversity of the community that this powerful symbol has come to represent. Among the patterns were geometric shapes, but also repeated headshots of key players in the Pride Centre initiative. “Pride Centre” was typographically emblazoned on panels, and more subtly incorporated into patterns. The bespoke nature of these forms created an immediate connection to the workshop participants. These were not just any blocks; these were “their” blocks. Interspersed throughout the cityscape were toy figures of varying gender and ethnicity. The Centre, after all, had to have people at the core of its purpose.

In the final session of the day, the workshops groups were formally introduced to the Pride City. It was described by the XYX team as an aesthetically seductive form, and this was evidenced by the fact that people had engaged with it throughout the day in exactly this way: as an ornamental photographic backdrop. But, it was explained, this did not make for “good” design: pretty but meaningless forms might attract an audience in a surface way; but any deep engagement with it must extend beyond the veneers of visual seduction. As a group the workshop participants needed to “move beyond the prevalent interpretation of design as merely the creation of beautiful things” (Dorst, 41), and engage with the design “as an alternative to conventional problem solving strategies” (Dorst, 41). The forms needed to be imbued with meaning for them to deeply connect with their audience; just as the Pride Centre would eventually itself need to deeply connect with the multitude of audiences it intends to covet. A magnificent building would potentially identify the Centre as a heroic architectural triumph, but not necessarily one that connects a community and satisfies its needs.

With this predisposition firmly established the workshop participants were invited to deconstruct the “pretty city” and reimagine the forms by giving them purpose, meaning and narrative. They were encouraged to think metaphorically and materially: to connect the forms to make new meanings; tear or cut them apart to explain processes; and to collate them in sequences that revealed the narratives of history, values and culture that had surfaced throughout the day.

The deconstruction of the city permitted the group to engage in one of the most valuable design processes: prototyping (see Figure 6). As Ricardo Sosa and Lisa Grocott explain, “simulations, facsimiles, models, props and blueprints become the material and experiential way that designers tangibly explore not-yet-fixed ideas” (Sosa and Grocott, 82). Just as designers feel safe to collectively iterate, develop, confer upon and dispute ideas through prototypes, the Pride Centre Board were permitted the same freedom. “Unfixed Ideas” could be safely presented, but equally safely challenged.

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Figure 6. Workshop participants co-creating the narrative for their "history" theme.

For example, using the forms as material metaphors, one of the history groups conceived of an entirely different location for the Australian Lesbian and Gay Archives (ALGA) that immediately challenged the assumptions of where archives belong. An archivist and a librarian from ALGA gathered together several of the abstract forms that they had labelled as "things" (like books and historical artefacts) and "themes" (like knowledge of the past, and the appreciation of struggle). These were stacked together as a larger, more complex form that was then labelled as the library/archive. Another group member, who did not work in the Archive, moved their form to a lower area of their Centre visualisation, commenting that archives would not the first thing visitors see when they go into the building.

The archivist in the group then jokingly retorted. She bemoaned being always located in the desolate silence of a basement, away from interaction and extensive public engagement. This visual, object-based thinking revealed an implicit assumption that archives, while important, only needed to be considered as a secure documentation of time and events, and did not need to be celebrated publicly. As the group discussed the different ways the archives could interact with the public, the person who moved it down the visualisation admitted they always thought of history as something to read about but not participate in. This prompted discussion about how to create a more outward facing and dynamic archive that challenged this familiar thinking. How might the Centre translate knowledge of the past into a more interactive and public-facing

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experience? Using the forms, the group were able to re-image how the Archive content might be thoughtfully embedded into the user's experience of the building.

Each group was provided with time to debate and consolidate their ideas, then invited to bring their re-imagined forms back together in a meaningful reconstruction of the city. Each group used their forms as tools to help the other participants understand the ideas that they relayed verbally. For example, the same history group that debated the location of the Archives, enacted a journey into the centre through forms that represented a tunnel coming into light. Using their forms to demonstrate, they conceived of a space where people could digitally embed their own histories through the retelling of their "coming out" stories. While the artefacts of political demonstrations and changes in laws are significant historical content represented within the Archive, the group acknowledged that "coming out" was, for many in the community, the most significant point in their own histories. Collected together in a publicly accessible space they build a visible, archival narrative of strength, resilience and honesty that both honours the past and embraces the future.

Each group was asked to present, but not in any particular order. The completion of one group's narrative would simply act as a prompt for another to extend the collective story. Through this process, the groups within the workshop took complete control of the outcome. They had needed the material and intellectual prompts throughout the day from the XYX lab, but this final exercise became one of completely autonomous thinking. The narrative flowed easily and convincingly between the groups, despite the lack of any formal structure. No one group was privileged over the other; each found their opportunity within a self-constructed framework of story-telling. As explained by Sanders and Stappers, "stories are useful for joining together many different details into a whole. Such story elements provide rich pictures (literally and metaphorically) with which we can connect" (Sanders and Stappers, 48). The stories invoked empathy for the Centre's users. How and why would they use the space, but equally how would they connect to it emotionally? The workshop had shifted from one of design thinking to what Thorpe and Gamman refer to as "design feeling". Design feeling is "linked to the designerly qualities of empathic recognition and understanding of [one] another fostered amongst the confederacy of actors engaged in the design action" (Thorpe and Gamman, 327). In essence, the engagement throughout the day had sensitised the participants to each other's needs and challenges, such that they generously incorporated them as equivalent to their own (see Figure 7).

Collectively the group identified the need for a comprehensive inclusive space, that reaches beyond its city-centric location to connect with suburban and rural LGTBIQ who are often at risk of the detrimental impacts of isolation and non-supportive communities. The physical space needed to be social, educational, sustainable and safe. The reconfigured city also revealed the equivalent value of a virtual pride centre; an online presence that extended the purpose and ethos of the physical building. Through this, the Centre could connect services and supportive organisations to families and individuals without them once needing to set foot in the physical building.

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Figure 7. Reconstructing the Pride City. Each group reconfigured their elements then told their story through them in order to contribute to a collective Pride Centre narrative.

Feeding the workshop data back

Throughout the workshop members of the XYX Lab both facilitated the various exercises, but also collected the qualitative data revealed in each one. This collation of discoveries has served both the Pride Centre Board and the Lab well. To complete the Pride workshop the Lab comprehensively compiled the data into a single document that was then returned to the Board. Timely communication back was an imperative for both the Board and the Lab. For the impact of the day's revelations to be genuinely incorporated into the formation of the Centre, key findings needed to be clearly articulated such that they could be incorporated into the final architectural design brief. The architects and designers who would eventually participate in the construction of the Centre required clarification of the needs and ambitions of the Centre. Without these, the building could easily be consumed by a designer-genius mythology that would not take into account the genuine needs of a diverse and complex community of users. On completion of the workshop the Pride Centre CEO, Jude Munro, responded to the workshop:

> *The design of the workshop introduced the concept of purpose, and through its focus on history, culture and values, we were together able to design a new Centre, contemplate its usage of space and even think about the Centre as a virtual entity and how it might evolve over time. The workshop was important for building on the bond between our board and our future tenants. (Munro)*

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"If the workshop has worked a form that has emerged in that space will somehow persist" (Graham, et al, 414). As further recognition of the workshop's significant contribution various outcomes have indeed persisted beyond the day. The completed worksheets were collected for inclusion in the Australian Lesbian and Gay Archives as historical evidence of the collaboration that formed the Pride Centre vision. Images of the workshop, especially the Pride City, have been used by the Board in their subsequent documents, and have themselves become part of the visual identity of the Victorian Pride Centre. Much of the language developed on the day now forms the narrative on the Centre's newly constructed website. The Lab was invited to bring our methods to a large community engagement workshop in 2017, and most recently the contributions of the combined workshops were published as part of the Pride Centre architectural competition, won in 2018 by Grant Amon Architects and Brearley Architects and Urbanists.

What the Lab learned

The workshop not only informed the Pride Centre's vision and brief for the building, it provided opportunities for growth and reflection for the researchers in the lab. The process of creating the materials and activities for the participants helped us as designers learn about what was allowing the participants to engage with these materials in creative and productive ways. Observing the construction, sharing and discussion of the paper city validated our hopes that these could function as instruments of inquiry; materials that "affect our perception and understanding of the world, and help us explore and make sense of it" (Dalsgaard, 24). The positive responses from participants who found they were able to quickly make their ideas visible, and create a model to speak to, eased our fears that non-designers would find it difficult to actively – and confidently – participate in creative making.

The experience of the day also inspired ideas for what could be done differently in the future to surface insights and allow for a smoother flow of discussing, thinking and making. One common comment from participants was about the pressure of time limits, and the tendency to have to quickly push past interesting nuances or disagreements in order to get to the idea that would be permanently recorded and shared. This serves as a provocation to the Lab going forward. Is a process that directs participants towards an immediate and easily presented answer the most innovative or just the most productive option? Is there a way for these creative workshops to help participants sit with ambiguity and make visible these tensions or conflicts? What materials would best facilitate these negotiations, and how might they contribute to a more equitable and considered output?

Observing how the materials did influence the discussions and even framed the outcomes in certain ways reinforced our notion that these materials had to be designed and assembled in a thoughtful, inclusive and socially responsible way. This informs how the Lab has approached the creation of workshop activities since; from the careful inclusion of gender balance and identity, and the racial diversity of figures or images of people; to the careful consideration of facilitation language such as pronoun usage, and

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the cautious use of familiar but problematised words (such as "tolerance" – people need to "be" not "tolerated"). Since the Pride Centre project the Lab continues to interrogate multiple modes workshop investigation and communication through continually reinventing, refining, indeed "prototyping", our investigation tools.

The workshop also revealed a need to pre-plan the capture and coding of data or information produced through this process. As argued by Sanders and Stappers, "dealing with qualitative data is messy and challenging" (197). While the members of the Lab were careful to document the day's events through photography, and we carefully collated and analysed the completed exercises, we did not capture all that was revealed on the day. Had we employed sound recording devices, or workshop "observers" who diligently recorded the emotional and physical engagement of participants we would have a far more comprehensive collection of data.

A leading challenge moving forward is how a design lab located in an academy meaningfully intersects designerly methods with scholarly knowing to create results ultimately more powerful than the sum of their parts. As perfectly framed by Dwight Conquergood:

> *The dominant way of knowing in the academy is that of empirical observation and critical analysis from a distanced perspective: 'knowing that,' and 'knowing about.' This is a view from above the object of inquiry: knowledge that is anchored in paradigm and secured in print. This propositional knowledge is shadowed by another way of knowing that is grounded in active, intimate, hands-on participation and personal connection: 'knowing how,' and 'knowing who.' This is a view from ground level, in the thick of things. This is knowledge that is anchored in practice and circulated within a ... community. (Conquergood, 2002)*

"In the thick of things" is perhaps where designers feel most comfortable; among a community of practice, where their research is perceived to be revealed publicly in the design itself, rather than the dissemination of the ideas that informed it. The Lab intends to privilege both; to document and publish generative processes and the realised outcomes. Yet finding unique modes of dissemination beyond those revered by the traditions of a university system present an ongoing challenge for many creative research bodies globally.

Our experience also helped us reflect more deeply about people: whose vision was being crafted and whose voices we were championing. In the case of the LGTBIQ community our collaborators needed to be far more expanded than the Pride Board represented. Only on the day of the event were we struck by the limited extent of diversity present in the Board. While the Board did represent diversity in sexuality and gender identity, it was largely constructed of white middle-class representatives of the community. Indigenous membership and members of non-European cultures were entirely absent. So too were the extremities of age: the young, and the very old, were not represented at all, yet the LGTBIQ experience impacts a lifetime. For the XYX Lab, it was important that all our future engagements needed the broadest possible spectrum of representation from any community we engaged with.

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Nonetheless, the workshop did serve to identify that our methods engender strong, inclusive and useful collaboration. As Gheerawo explains, "democratization of practice offers a framework for designers to move towards the more people-centred and equitable processes needed today" (304). Our methodologies engage the Gheerwo framework upon which we can construct ideas, knowledge and insights gathered from the interaction of numerous stakeholders in a design problem. Our methods go beyond the familiar Post-it note engagement with design thinking, to embrace a far more embodied participation where carefully designed props empower non-design collaborators to both identify challenges and surface their own creative solutions.

Conclusion

For the Lab, this first "designerly" interrogation of user needs within a complex gendered environment, revealed both strengths and flaws in our co-design methodology. These revelations have enabled us to adapt and improve them for subsequent projects. The strengths were clearly the sense of collaborative engagement that a series of bespoke, materially oriented exercises enabled in a community. They helped to grow the confidence of the participants; and indeed their own belief in the process. They grew both in confidence and contribution. By empowering the groups with specially designed visual and material thinking tools that were accessible and easy to modify, intriguingly the specialness of "designing" was debunked. For the participants, design was repositioned as a "process" not a "thing"; yet carefully designed "things" helped them realise this. The tools, especially the final toy-like Pride City, engaged the participants in the "deceptive playfulness inherent in the conceptual phases of a design project" (Dorst, 43). The playful quality of the exercises did not devalue the outcome, but rather demystified a design process that is otherwise located in a sphere of exclusivity. Acts of "play", while not explicitly identified in this paper, was, and remains, a key mode of engagement with our collaborators. As identified among Julienne Van Loon's *Manifesto in Ten Parts*, "Play is not the opposite of work... Play has an important relationship with uncertainty and risk... To play is—through movement—a doing, a shifting or reshaping towards a new form, finding or understanding" (Van Loon, 210). Playful interludes are richly revealing research processes because "play-ing" helps diminish the "us and them" between design, the academy and the public. Through play we occupy a shared platform of inquisitive expert.

As the "designer-hero" myth recedes into the past, co-design, user-centredness and participatory methods of inquiry speak more clearly to the original intent of design. As Alison J. Clarke posits, "is design's lean to pluralism and its shift to social inclusion just an inevitable outcome of its original humanist vision?" (Clarke, 164). For the XYX Lab, and its concern for people dislocated from built environments on the basis of gender, Clarke's query must be answered with "yes". It is only through our engagement with a public as collaborators that any of our research questions can even be posed let alone answered.

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About the authors

Gene Bawden is Deputy Head of the Monash University, Art Design and Architecture (MADA) Design Department. His research and design practice embraces the confluence of the material, the visual and the spatial, and the narratives of belonging articulated in each. As a member of XYX Lab, he is afforded the opportunity to combine his knowledge of gendered spatial practices and his communication design expertise within collaborative research projects aimed at mitigating gender inequity in Australia's urban environments. Using bespoke material tools of enquiry are an area of investigation that is increasingly part of Gene's expanding area of material/spatial research.

Alli Edwards is both a Faculty member and PhD candidate in the Department of Design at Monash University, Art Design and Architecture (MADA). Delighting in blurring the lines between work and play, Alli's research explores methods for creating inclusive, energetic workshop experiences and examining the contributions of this dynamic towards collaborative creation. Her educational practice centres around challenging student's ideas of failure and experimentation in the design process, in hopes that her students can tackle the challenges that face contemporary designers – and have a little fun while doing so.

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