

Capturing uncertainty in material culture

Abstract

Design has long been understood as the collaborative, hands-on process that takes an idea and forms it for a market (Lawson, 2006). 'Design thinking' in particular has emerged as the means to innovation and competitive advantage for businesses while also being espoused for resolving 'wicked' problems whether they be driven by systemic issues, or related to service and policy design or community development (Gero, 2010).

Di Russo says that Rittel and Webber in their seminal research on 'wicked problems' "shaped contemporary definitions of design thinking, with current definitions drawing examples from higher orders of design practice" (2016, p.45). This has influenced the uptake of design thinking as a tool of innovation and complex problem solving in business and organisations, and it has led to the proliferation of design thinking (aka design) as a means to solve wicked problems and tackle complexity. The perception for many of the contemporary wicked problems such as poverty, water and food scarcity, sustainability and climate change, is that design and design thinking are possible tools to create innovative, viable and desirable, yet environmentally sustainable, solutions (Kimbell in Engine, 2012, p.21).

Designing for tomorrows

According to Fry (2009 p. 12) "In increasingly more unsustainable worlds, design intelligence would deliver the means to make crucial judgements about actions that could increase or decrease futuring potential". This could be adding to the notion that most often design's agency is posited with those who hold the kudos (and ego) of 'designer' or 'design thinker' as well as in aesthetics or form, systems or things. Fry (2009) and Brown (2009) share a belief that design can equip people with knowledge and skills that they can use to shape the conditions of their lives. But in ignoring or skipping over foresight and futures thinking, the opportunity for people to 're-make' a common good that is human-centred, is dramatically reduced.

Significantly, the more design thinking is used to innovate and solve problems across many professions, the more design itself is brought into significant conversations and decisions that shape our collective futures, yet only recently has the grounding consideration of whether design or design thinking has sufficient capacity or capability in futures thinking or strategic foresight emerged.

If designers are to comprehensively and consciously design for multiple alternative futures (Slaughter 2005) then it could be argued that they are required to have an understanding of both the interconnected causal mechanisms in the design process and how to anticipate the causal mechanisms in the values, beliefs and actions that determine whether those futures are created. Further, the anthropocentric stance and focus of design for 'people-as-users' perhaps needs to be reconsidered towards design that includes non-human life (Jain, 2018).

In 2016, Dan Lockton asked if design "needs to tackle 'the future' in a more nuanced and exploratory way, not the conventional approach of 'trying to pin the future down'

in Dunne & Raby's words (2013, p.2)" (Lockton, 2016). This follows the emergence of the theory of transition design (Irwin, 2015) an approach first outlined in 2013 for addressing 'wicked' problems (such as climate change, loss of biodiversity, crime, poverty, and pollution) and catalysing societal transitions toward more sustainable and desirable futures.

Design and designers are practical agents of visual imagination, creating the sensory blueprints for the objects and experiences of tomorrow. In short, they have skills, tools and experience to turn abstract future concepts and ideals into visible or tangible form. Designers/design thinkers are primary agents in bringing form to images of futures, and therefore in helping humanity see and negotiate (or refuse) the transition.

The challenge then is that whether designing or redesigning, from a building or a product, to a process or policy, design and design practitioners are proposing to anticipate a solution that caters to future needs or responds to futures issues – or if it remains tied to contemporary material culture. Di Russo states that "Design thinking and its core characteristics; multidisciplinary, iterative, rapid prototyping, human-centered, collaborative, visual and divergent thinking, are now seen as suitable for working with problems where the future is tangled and uncertain" however design thinking explicitly does not include futures thinking, strategic foresight and anticipation in its philosophy, tools, methods or frameworks (2016, p.50). Design methods, and not always with futures tools, are being used to form the bridge between current products, systems and practices and what it will be required and desired in the future.

More recently the work of Irwin (2017) and Wahl (2016) has focused on the challenges of creating and sustaining a viable future for humanity. This work acknowledges design as complicit in contributing to consumption and material culture, and that addressing our current state of an overpopulated planet in crisis requires all of us to collaborate, across generations, ideologies and nations (Wahl, 2017). The theories of both transition design and regenerative cultures transcend sustainability or innovation and even social innovation, and instead seek to inform design that influences social change and societal transition towards more sustainable futures.

But design – and designers – must be conscious of this. The material intentionality of design expressed through "the interactions and relationships formed by consumer products, transport systems, economies, systems of governance, housing and settlement patterns, and resource and energy use" (Wahl, 2008) is also the expression of the designer and design brief. Designing occurs within the complexity of a reality that includes social, technological, and aesthetic values spheres: a complexity that cannot be reduced to any one of these spheres (Wahl, 2008). This suggests the need for a design approach that challenges and enables us to hold multiple simultaneous perspectives and to address different levels of awareness across the spectrum of human development (Hayward, 2003).

Design is the way our worldview and value systems express themselves in our material culture, through the artefacts, systems and processes we create. Past design decisions—like the buildings and cities we inhabit—in turn shape

our worldview and value systems. Design is a conversation through which different perspectives are integrated into culturally creative action.

Wahl, 2016

Design has the tools for visualising complex, large-scale systems; the insights derived from it can be used to improve the quality of experience, the efficiency of the process, and offer benefits across the spectrum of applications (Hargadon, 2005). So is 'bad design' design that negatively affects our complex system of individual, social and cultural perspectives? Perhaps 'bad design' comes about because we fail to consider the design within the complexity of the world it is created in and the futures it might exist for?

The solutions to the world's 'wicked problems' (whether linked to design or not) are more likely to be new processes, lifestyles and changes in meaning, rather than purely material or promotional artefacts. Sustainability is an emergent property of appropriate interactions and relationships among active participants in the complex cultural, social, and ecological processes that constitute life in this century. The necessary shift towards more appropriate and sustainable modes of participation requires that design and education contribute to a widespread increase in social and ecological awareness through transdisciplinary design dialogues.

References

- Äijälä, E, & Karjalainen, TM 2012, *Design strategy and its strategic nature*, International Design Business Management. Alto University
- Ambrose, G & Harris, P 2010, *Design Thinking*, AVA Publishing, Lausanne
- Aristotle's BK II. Ch. 1 & 2. 89b lines 23 to 37 from Ensign, S
<http://scottensign.web.unc.edu/2010/06/> - viewed 10 June 2011
- Bell, W 2008 *Foundations of futures studies (Volume 1)*, New Brunswick, NJ, USA, Transaction Publishers
- Best, K 2006 *Design Management*, AVA Publishing, Singapore
- Brown, T 2008, *Design Thinking*, Harvard Business Review, June, 84-92
- Brown, T 2009, *Change by Design*, Harper Business, New York
- Buchanan, R 1992, *Wicked Problems in Design Thinking*, Design Issues, 8(2), 5-21
- 'Co-designing within Metadesign; synergies of collaboration that inform responsible practice', written for the *Journal of CoDesign, International Journal of CoCreation in Design and the Arts*, Taylor & Francis (noted as to be published in December 2007 or early 2008) <http://attainable-utopias.org/tiki/AcademicPapers>

Cross, N 2002, *Design as a Discipline*, the Inter-disciplinary Design Quandary Conference, 13th February 2002, De Montfort University
<http://nelly.dmu.ac.uk/4dd//DDR3-Cross.html>

Cross, N 2006, *Designerly ways of knowing*. Berlin, Springer

Cross, N 2007, *Editorial: Forty years of design research*, *Design Studies* Vol.28 No.1, January 200

Cross, N 2011 *Design Thinking: Understanding How Designers Think and Work*, Berg Publishers

Curry, A 2016, *The Anticipation Question: on the First International Anticipation Conference Compass*, Newsletter of the Association of Professional Futurists
https://www.academia.edu/21944138/The_Anticipation_Question_on_the_First_International_Anticipation_Conference

Curry, A & Schultz, W, 2009, "Roads Less Travelled: Different Methods, Different Futures," *Journal of Future Studies*, May, Vol. 13, No. 4

Dator, J 2009, Alternative Futures at the Manoa School, *Journal of Futures Studies*, 14(2): 1 – 18.

Dator, J 1979 The futures of culture/cultures of the future in Anthony Marsella, et al., eds., *Perspectives in Cross-Cultural Psychology*. Academic Press.

Di Russo, S (2016) Understanding the behaviour of design thinking in complex environments Doctoral Thesis, Swinburne University of Technology

Dorst, K 2010, *The Nature of Design Thinking*, Proceedings of the 8th Design Thinking Research Symposium (131-139), Sydney University of Technology, Sydney, New South Wales

Esslinger, H 2009, *A Fine Line*, Jossey-Bass, San Francisco

Fraser, HMA 2007, *The practice of breakthrough strategies by design*, *Journal Of Business Strategy* Vol. 28 No. 4, pp. 66-74

Fry, T 2009, *Design Futuring*, UNSW Press, Sydney

Garrett, MJ 1993, *A way through the maze. What futurists do and how they do it*, *Futures* April pp 254-274

Gero, J 2010, *Innovation Policy and Design Thinking. Proceedings of the 8th Design Thinking Research Symposium*, (175-186), Sydney University of Technology, Sydney, New South Wales

Giacomin, J 2014, *What Is Human Centred Design?*, *The Design Journal*, 17:4, 606-623,

Gloppen, J. 2009. Perspectives on design leadership and design thinking and how they relate to European service industries. *Design Management Journal*, 4(1), pp. 33–47.

Graham, B. 2013. Innovation and Organisation: Towards an Art of Social System Design. (Doctoral Thesis). Monash University

Hargadon, A 2005, *Leading with Vision: The Design of New Ventures*, Design Management Review Volume 16, Issue 1, pages 33–39, Winter

Hayward, P 2003, *Resolving the Moral Impediments to Foresight Action*, <http://www.pspl.com.au/pdf/moral%20impediment.pdf>

Horton, A 1999, *Forefront: a simple guide to successful foresight*, Foresight the journal of futures studies, strategic thinking and policy, vol.01, no.01 pp. 05-09

Haith, MM 1997, *The Development of Future Thinking as Essential for the Emergence of Skill in Planning*, in Friedman, SL and Scholnick, EK *The Developmental Psychology of Planning*, Lawrence Erlbaum and Assoc. New Jersey

Hamel, G & Prahalad, CK 1994, *Competing for the future*. Boston, MA, USA, Harvard Business School Press

Haque, U 2011, *The New Capitalist Manifesto*, Harvard Business School Publishing, Massachusetts

Hines, A & Bishop, P (eds) 2007, *Thinking About the Future*, Guidelines for Strategic Foresight. Social Technologies, LLC

Ideo www.ideo.com

Inayatullah, S 1998, *Causal layered analysis: poststructuralism as method*, Futures 30, 815-29.

Irwin, T 2015, *Transition Design: A Proposal for a New Area of Design Practice, Study, and Research*, Design and Culture, 7:2, 229-246

Jain, A 2018 “More-Than-Human Centred Design” Conference presentation, Interaction Design Association <https://vimeo.com/255010942>

Jen, N 2017 *Design Thinking Is Bullsh*t* Conference Presentation, Adobe 99U 2017, <https://99u.adobe.com/videos/55967/natasha-jen-design-thinking-is-bullshit>

Jones, D 2010, *What kind of thinking is design thinking?* Proceedings of the 8th Design Thinking Research Symposium, (219-228) Sydney University of Technology, Sydney, New South Wales.

Klein, G & Snowden, D 2011, *Anticipatory Thinking. Informed by Knowledge Expert Performance in Complex Situations*, https://www.researchgate.net/publication/228953044_Anticipatory_Thinking

Kimbell, L 2009, *Beyond design thinking : Design-as-practice and designs-in practice*, CRESC Conference, (1-15) September, University of Oxford, <http://www.lucykimbell.com/LucyKimbell/Writing.html>

Kimbell, L 2011, *ReThinking design thinking: Part I*, Design and Culture, 3(3), 285-306

Kimbell, L 2012, *ReThinking Design Thinking: Part II*, Design and Culture, 4(2), 129-148

Kimbell, L 2012, *Drivers of change for organisations around service over the next 3-5 Years*, Report commissioned by Engine Service Design, Retrieved 9 March, 2013 from [ww.engagegroup.co.uk](http://www.engagegroup.co.uk)

Kimbell, L 2009 *Beyond design thinking: Design-as-practice and designs-in practice*, CRESC Conference, (1-15) September, University of Oxford, <http://www.lucykimbell.com/LucyKimbell/Writing.html>

Kimbell, L 2010, *From User-centered Design to Designing for services* Design Management Conference, (1-9), London <http://www.lucykimbell.com/LucyKimbell/Writing.html>

Kumar, V 2009, *A process for practicing design innovation*, *Journal of Business Strategy*, vol. 30, no. 2/3, pp. 91-100

Laakso M. & Hassi, L 2011, Design thinking in the management discourse: Defining the elements of the concept, 18th International Product Development Management Conference, Delft University of Technology

Leavy, B 2010 *Design thinking – a new mental model of value innovation*, *Strategy Leadership*. (38)3, 5-14

Lawson, B 2006, *How Designers Think*, Fourth Edition Architectural Press, Elsevier, Oxford

Leinonen, T & Durall, E 2014, *Design thinking and collaborative learning*, *Media Education Research Journal*, 21(42), 107-116

Lockton, D 2016, *Transition Lenses: Perspectives on futures, models and agency* Draft paper for Transition Design Symposium: Can Design Catalyse the Great Transition? 17-19 June 2016, Schumacher College, Dartington, Devon https://www.academia.edu/25483043/Transition_Lenses_Perspectives_on_futures_models_and_agency

Lockwood, T 2009, *Design Thinking: Integrating Innovation, Customer Experience, and Brand Value*, Allworth Press

Martin, R 2009b, *The Design of Business*, Harvard Business Press, Boston

- Martin, R 2009 *The Opposable Mind*, Harvard Business School Publishing, Massachusetts
- Miller, R, Poli, R and Rossel, P 2013. The discipline of anticipation: Exploring key issues. *IN: fume. org.*
- Merholz, P 2009, *Why Design Thinking Won't Save You*, Harvard Business Review blog <http://blogs.hbr.org/merholz/2009/10/why-design-thinking-wont-save.html>
- Nussbaum, B *Design thinking is a failed experiment, So what's next?* FastCo Design, <http://www.fastcodesign.com/1663558/beyond-design-thinking>
- Pilloton, E 2009, *Design Revolution*, Thames & Hudson, London
- Piirainen, K & Gonzalez, RA 2015, *Theory of and within foresight – “What does a theory of foresight even mean?”* Technological Forecasting and Social Change, vol 96, pp. 191–201. DOI: 10.1016/j.techfore.2015.03.003
- Poli, R 2010, “An Introduction to the Ontology of Anticipation,” *Futures*, Vol. 42, Issue 7.
- Raford, N ‘*The coming boom and bust of design thinking*’ <http://news.noahraford.com/?p=246>
- Rhisiart, M, Miller, R, & Brooks, S 2014, *Learning to use the future: developing foresight capabilities through scenario processes* Technological Forecasting and Social Change, 101, 124–133.
- Rittel, H J, & Webber, MM 1973, *Dilemmas in a General Theory of Planning* Policy Sciences, 4, 155-169.
- Rittel, HJ, & Webber, MM 1984, *Planning problems are wicked problems*, in N. Cross (ed.), “Developments in Design Methodology” (pp. 135-144.). Chichester, UK: John Wiley & Sons Ltd.
- Rowe, PG 1987, *Design Thinking*. Cambridge, The MIT Press
- Ruff, F 2006, *Corporate foresight: integrating the future business environment into innovation and strategy*, International Journal Technology Management Vol. 34, Nos. 3/4 Rowe, PG (1987). *Design Thinking*. Cambridge: The MIT Press
- Ryle, G 1949, *The Concept of Mind*, London, Hutchinson.
- Seginer, R 2003, *Adolescent future orientation: An integrated cultural and ecological perspective*, in W. J. Lonner, et al (eds.), *Online Readings in Psychology and Culture* (<http://www.wvu.edu/~culture>), Center for Cross-Cultural Research, Western Washington University, Bellingham
- Simon, HA 1973, *The structure of ill-structured problems*, Artificial Intelligence, 4: 181–

Simon, HA 1996 *The sciences of the artificial* (3rd ed.). Cambridge, MA, MIT Press.

Slaughter, RA 2001, *Knowledge creation, future methodologies and the integral agenda*, Foresight, the journal of future studies, strategic thinking and policy 03(05) pp 407-418

Slaughter, RA 2008, *Reflections on 40 years of futures studies and Futures*, Symposium/Futures 40

Slaughter, RA, Inayatullah, S & Ramos, JM 2005, *The Knowledge Base of Futures Studies*, Brisbane, Australia, Foresight International.

Tham, M & Jones, H 2008, *Metadesign tools. Designing the seeds for shared processes of change*, <http://attainable-utopias.org/tiki/AcademicPapers>

Tonkinwise, C 2016. *Committing to the Political Values of Post-Thing-Centered Designing (Teaching Designers How to Design How to Live Collaboratively)*.

Tonkinwise, C 2014, *Design's (Dis)Orders & Transition Design Medium* <https://medium.com/@camerontw/designs-dis-orders-transition-design-cd53c3ad7d35>

Tonkinwise, C 2010, *A Taste for Practices: Unrepressing Style in Design Thinking*, Proceedings of the 8th Design Thinking Research Symposium (DTRS8), (381–8), Sydney

Von Thienen, J, Meinel, C & Nicolai, C 2014, *How design thinking tools help to solve wicked problems*, in H. Plattner et al. (eds.), *Design Thinking Research, Understanding Innovation*, (97-102), Switzerland: Springer

Voros, J 2003 *A Generic Foresight Process Framework* *Foresight* 5, 10-21

Wahl, DC 2016, *Join the Re-Generation! Designing Regenerative Cultures*, Medium <https://medium.com/insurge-intelligence/join-the-re-generation-designing-regenerative-cultures-77f7868c63cd>

Walters, H *"Design Thinking" Isn't a Miracle Cure, but Here's How It Helps* FastCo Design, http://www.fastcodesign.com/1663480/helen-walters-design-thinking-buzzwords?partner=homepage_newsletter

Wood, J 2008, *Changing the Change: A Fractal Framework for Metadesign* <http://attainable-utopias.org/tiki/AcademicPapers>

Wuisman, J 2005, *The logic of scientific discovery in critical realist social scientific Research*, *Journal of Critical Realism*, (4)2, 366-394