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Tangible Thinking: the impact value of oblique co-design & tacit knowledge

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A sustainable and resilient society requires equitable access for all to partake and contribute. Focusing on several interdisciplinary case studies, this paper explores how 'oblique co-design' and other design-inspired methodologies can reveal latent and tacit knowledge towards community impacts. A recent collaborative design workshop with Plan International Australia, Monash University XYX Research Lab, community stakeholders, and young female activists, pioneers a scalable methodology for involving diverse members of the community. This case study transformed a user-created, digital cultural map into actionable proposals and initiatives. The research finds that initial designerly analysis of the data explored through these co-design methods, provides insights of direct use to those concerned with the cultural vibrancy and safety of the city of Melbourne (including the police, public transport operators and local government). Like all cities, Melbourne is changing rapidly and the need for feedback about the city from underrepresented voices is essential to monitor the transition towards greater equity of access. This paper examines how these design techniques can be a valuable disruptive mechanism for engaging citizens and synthesizing diverse perspectives in order to inform an inclusive future vision

With a background in neuroscience, **Hannah Korsmeyer** is interested in how humans construct the realities that shape our lived experience and how different research methodologies may be blended to open new possibilities. Following her work designing educational play environments for young homeless children living in family shelters, she earned a masters degree in Design: Critical Practice from Goldsmiths, University of London. At Goldsmiths, she developed technological research devices for exploring concepts of gender. Her educational practice centres on understanding theory through prototyping and using design methods to reveal latent knowledge.

Delighting in blurring the lines between work + play, **Allison Edwards'** research explores playful methods for creating inclusive, energetic workshop experiences and examining the contributions of this towards collaborative creation. These workshops are informed by research conducted during her Masters of Design at Emily Carr University of Art and Design in Vancouver, Canada. Her educational practice centres around challenging students' ideas of failure and experimentation in the design process; in hopes that her students can tackle the challenges that face contemporary designers – and have fun while doing so.

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INTRODUCTION

This paper uses a recent design activism workshop to case study the importance of tacit knowledge acquired through the oblique design process. We argue that value does not *only* come from conceptualising the design and implementing steps towards its realisation. Real benefit is also found well before the design outcome in processes which encourage complexity and ambiguity, and which disrupt the conventional power dynamics among participants. The 'Free to Be Design Thinking' workshop, case studied below, employed oblique co-design methods to work with youth activists and community members on designs which address the "wicked" problem of sexual harassment in the city. The workshop was modelled as a collaborative space which encouraged self-reflexivity to critique implicit assumptions and problematise solutions. We argue that the tacit knowledge revealed during this process was a very valuable learning outcome and further propose that ambiguity, collaboration and critique should be explicitly inbuilt into the processes of designing solutions to complex social problems.

Critiques of Design Thinking – what values do we need to preserve?

Design-inspired methodologies and "design activism" are increasingly translated across different domains of social innovation and systems (Fuad-Luke, 2009). The influence of design thinking and its ability to create positive impacts is now seen in disparate settings from safer sewage treatment systems being developed in vulnerable communities to initiatives which improve healthcare and social systems (Brown, 2010; Fuad-Luke, 2009; Wyatt, 2013). The activities we employed in the case study workshop, however, challenge claims made by Herbert Simon that design simply 'devises courses of action aimed at changing existing situations into preferred ones' (Simon, 1988).

Bruce Nussbaum, an original proponent of design thinking, has argued that there is a tendency in current design thinking to over simplify an 'inherently messy process' (Nussbaum 2013). Too often workshops rely on post-its and sharpies and design out the messy materials, abstractions and tensions that are essential to the creative process. Indeed, tidy design thinking methods cut short tangential explorations in the interest of time and the need to come up with viable solutions or achieve consensus. And yet as this paper explores, design thinking workshops can offer a unique social learning opportunity which serves a purpose beyond better design solutions.

Oblique Co-Design: THE DISRUPTIVE VALUE OF MATERIALS AND MAKING

Oblique co-design begins with an acknowledgment that there may never be a single perfect solution to any wicked problem. The unique event of a co-design workshop must also be considered an outcome rather than simply a step towards a design solution which is more responsive to the needs of users. Our emphasis in these workshops therefore is on embracing the widening of possibilities and the disruption of linear thinking which occurs when diverse people come together. Encouraging critical reflection, however, is not an automatic outcome of traditional design thinking methods and must be carefully crafted by the designer(s) for each context. Before turning to the case study, we briefly outline and review various strategies that designers employ to intentionally promote a productive sense of disorientation and ambiguity.

Design as a field and design thinking, of course, are already known for disruptive strategies which encourage divergent thinking. For example, many designers are familiar with Brian Eno's 'oblique strategies' aimed to stimulate unexpected connections between seemingly disparate ideas and which are useful for overcoming a creative block. Within a co-design context, these strategies are also closely aligned with the concept of Edward de Bono's lateral thinking. Both these established creative strategies are purposeful tools for the individual designer which in turn will generate better outcomes for the user. How these strategies might be better used in participatory workshops as the scaffolding which supports transformative thinking for the participants is a central question for this paper.

Material designed for use in workshops can act as, 'Instruments of Inquiry' (Dalsgaard, 2017) which encourage different perspectives and allow multiple people to contribute at the

same time. As Dalsgaard points out: 'the physical and visual material helps 'overcome our limited abilities to grasp and manipulate complex constructs by offloading cognition to our environment through externalisations.' (Dalsgaard, 2017, p. 8). Tools and materials can allow for more effective distributed cognition. Carefully selecting the correct tools and materials facilitate collaborative work and a collective and creative examination of complex problems. Many of the activities from the featured case study in this article encouraged externalisation and visualisation of personal perspectives, emotions and stories which all reveal tacit knowledge and different perspectives.
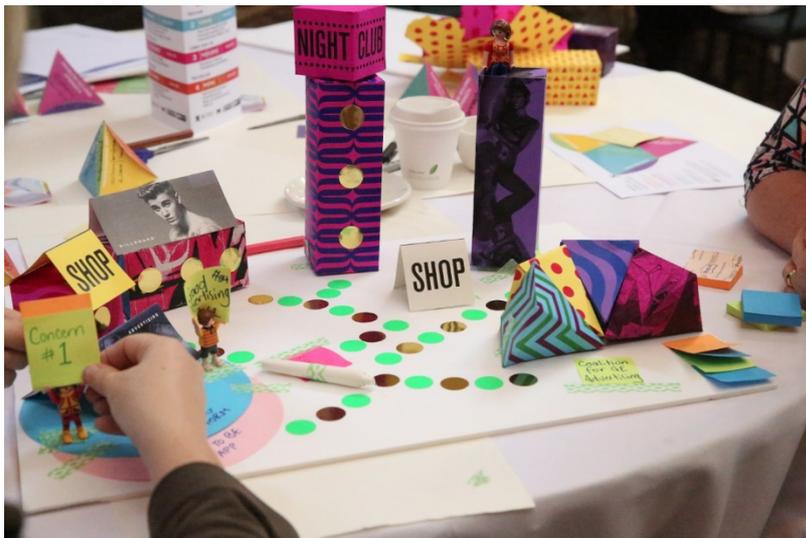
Navigating Power Dynamics

In an ideal oblique co-design workshop, the participants are supported through each stage of the design process, re-making and re-evaluating the different perspectives which form the foundation of our beliefs. In juxtaposing opposing ideas, or exploring the ambiguity or tensions inherent within concepts and beliefs, participants engage actively in problem-finding, a process described by creativity psychologist Csikszentmihalyi which 'confronts the person with a general sense of intellectual or existential unease' about the problem under consideration. Problem finding allows for the notion of rejecting the question and the need to ask a new one (Csikszentmihalyi 1995, p.16). Flexible thinking is very necessary when dealing with these wicked problems where there is no one right answer and where there are complex interacting systems.

The bringing together of diverse and underrepresented voices to best inform the project is also crucial when working on difficult social issues. Co-design can 'contests dominant hierarchically oriented top-down power structures' and results in 'mutual learning between

the stakeholders/actors.' (Fuad-Luke 2009 p. 147) It has the potential to be an equalising force. It can generate feelings of inclusion and address power imbalance. However, when overly systemised and simplified into a routine series of steps, design thinking risks losing its radical edge and at worst becomes an agent of existing social structures or mores (Loyd, 2015)

> Even acclaimed design perspectives (such as participatory design and co-design) risks reproducing tacit forms of coercion, or turning the change agent into a collaborateur, colluding with current exploitative regimes of consumerism and politics of domination. (Cooke and Khotari, 201)

Negotiating Conflict & Revealing Tacit Knowledge

This oblique design process has further value as a communication and mediation tool when debating emotionally charged or contested issues such as gender inequality, which is at the centre of our case study. Typically, there is a tendency for people to shut down when faced with opposing viewpoints during discussion. Furthermore, this 'backfire effect' often serves to only further polarise opposing viewpoints, undermining opportunities for progress within diverse groups. (Kaplan 2016) Parallel thinking, as first theorised by Edward de Bono, allows for the divergent thinking which can limit or avoid conflict to find solution. It potentially offers one pathway through the adversarial dynamic. However, while this strategy is excellent for prolific idea generation, it is less effective in stimulating the kind of social learning that can occur when one's views are challenged. Embracing this tension requires workshop participants to explain their perspective and articulate their framing of the problem in more depth. Therefore, it is necessary for design thinking to operate as a guided process which triggers self-awareness and problem-finding rather than solution-finding.

The value of challenging one's own viewpoint is also echoed in Transformative Learning Theory. It is necessary to understand 'the structures of assumptions through which we understand our experiences; and which 'selectively shape and delimit expectations, perceptions, cognition, and feelings.' (Mezirow, 1997, p. 5). Critiquing our frames of reference through unfamiliar oblique making strategies becomes essential when it is understood that 'actions and behaviors will be changed based on the changed perspective' (Cranton, 1994, p. 730). Moreover, when non-designers are asked to model or prototype a concept, this unfamiliar material framing serves as a buffer against direct conflict. Oblique strategies simultaneously propel understanding by creating a 'disorienting dilemma' and 'exposes a discrepancy between what a person has always assumed to be true and what has just been experienced, heard or read'. (Cranton, 2002, p. 66). The oblique design, which we celebrate in this paper strikes a balance between these different theories of adversarial and parallel thinking.

THE EVOLVING ROLE OF THE DESIGNER (as facilitator)

Designers are increasingly being asked to play a facilitation role in designing and running workshops. Many who were once trained to design beautiful things for people to use are now designing tools that enable participants to express ideas which are purposefully incomplete and can be hacked and re-arranged. This requires a new mindset. Designing a structure and an experience which can guide workshop participants without being overly prescriptive is not new to the field of generative design tools (Sanders, (Convivial toolbox). However, the design of materials which encourage a more oblique approach to an issue is innovative, it calls for reflexive thinking on how subtle design decisions can reinforce or subvert paradigms and discourse. How to design materials which are situated in the real world and which can trigger different perspectives is unfortunately not frequently taught in design school.

CASE STUDY - Free to Be Design Thinking

XYX Lab is a research lab at Monash University which is composed of designers and architects who investigate the wicked problems at the intersection of urban spaces, gender and communication. These wicked problems are impossible to solve within a narrow problem- solving approach because the social and political factors acting on them are so complex and intertwined. Working with Plan International Australia and the City of Melbourne, XYX Lab designed a workshop leveraging oblique design methodologies which allow participants to reflect, visualise, and conceptualise real world impacts. The workshop followed the results of crowdsourced data from young women and girls on safe and unsafe

spaces in the city. This initial research was conducted by Plan International Australia using Crowdspot technology to map experiences of public spaces across the city of Melbourne. Over the course of a day, diverse participants in this workshop considered the complex social contexts of this data. They reflected on their own lived-experience, empathised with others and shared their fresh insights with each other.

Design Research and Visual Provocations: visually understanding the problem space
As an introduction to the workshop, XYX Lab presented the research data and interrogated and interpreted the results. For example, Pamela Salen, a designer at Monash University, went out to physical locations in the city that had emerged from the data and photographed all the signage, advertising and branding on the streets. The documentation and analysis revealed that the clusters of 'sad' spaces had an abundance of fast food chains, rectangular and aggressive signs and subtly masculine targets or phrasing. Spaces reported as happy spaces contained smaller, locally owned places with custom signage and carefully crafted facades. The data and analysis were very useful in understanding how to read safe and unsafe spaces. As one participant later commented: 'I was particularly enlightened by the gendered physical environments and the images of gendered signage was so clear in illustrating this point.' (Follow up survey, 2017).
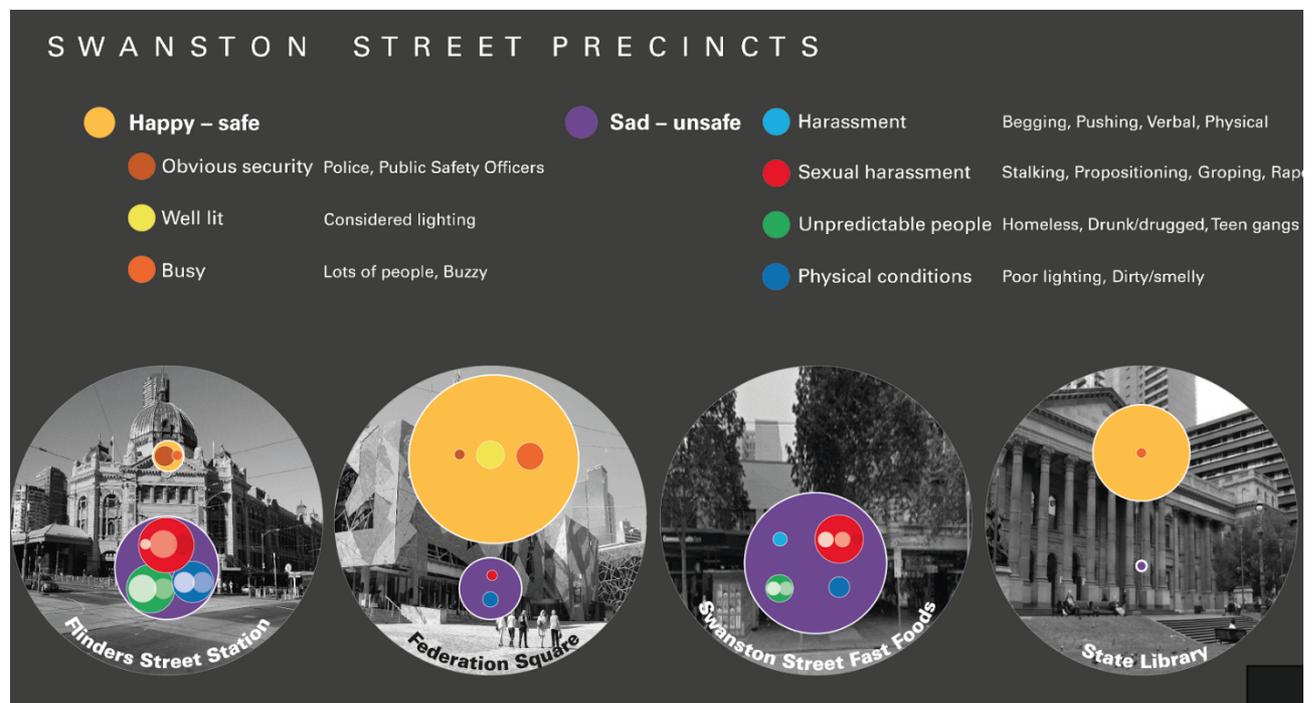

Image of example data from presentation and research by Gill Matthewson

Gill Mattewson also presented a more visual analysis of the research data (see image above) In these diagrams, the relative size of the circles indicates the number of pins or comments. The more pins, the bigger the circle. And within the safe and unsafe larger bubbles are smaller circles that show which elements make the place safe or unsafe. This presentation of layered information helped participants with limited knowledge understand how public space elements contribute to perceived safety or unease.

After all participants had been introduced to this topic and followed traditional design thinking techniques to generate ideas for responses to the data. Our 'transformation timeline' guided groups as they mapped out what a successful project would look like and strategically plotted out challenges and milestones along the journey of implementation. The materials were designed so that multiple people to contribute at the same time. Following the concept of parallel thinking, the transformation timeline consisted of easily arranged components which allowed for ideas to sit side by side. Participants were encouraged to plot out all the different elements necessary to implement the proposal rather than getting stuck debating one detail or challenge. The linear and pragmatic nature of the time-line championed types of systems thinking and knowledge which has been gained from years of experience in social sectors. Groups working on more speculative and human centred propositions were able to completely fill in the timelines and note where there was confusion, multiple approaches or conflict.

However, one group was so involved in debating the responsibilities of a local organisation that the timeline was barely filled in. It was also noted that debates disengaged the group

members who had little knowledge of the organisation. It seemed that in this direct and linear phase of the workshop, argumentative participants reverted to typical ways of defending their personal lived experience and ideas. This reversion to type indeed highlights the need for researchers to continue refining activities which encourage speculation about future-oriented propositions.

Building the city, Building Ideas

Our capacity to mediate conflict and assist participants build consensus, however, proved more successful in a playful, speculative activity at the end of the day. We asked each group to distil a day's worth of collaboration and conceptualisation into a visual format which could be easily explained and critiqued. Participants were challenged to visualise the impact of their idea on Melbourne through the building of a physical prototype. Coloured paper with patterns was used to represent components of a city which could be easily modified to explain or tell the story of their idea. This bespoke paper city was designed specifically for the workshop and was based on the many visual signs and symbols which had been discussed throughout the day. Urban elements such as billboards; construction sites; public transportation stations; shopping and nightlife districts; and open green spaces were created for participants to modify and extend. Some buildings modified by the participants deployed the patterns which had been identified in our visual analysis of the advertising signage

associated with the sad and happy spaces, such as the negative fast food logos or positive decorative abstract patterns inspired by natural elements.

At this stage of the project it was important that the conversation stay human-centred and focused on the impact of the idea. Therefore, plastic human figurines played a large role in the visualisations and stories which were told. Open and dynamic materials like the paper city exemplified the ability to 'delineate synergetic and divergent views and, most importantly, create a sense of collective and individual "ownership" of the ideas expressed' (Fuad-Luke, 182). The act of collaboratively creating this paper city required everyone's contribution and a degree of consensus about what the impact would be. It resulted in a refinement of ideas which were human-centred and flexible.

Ongoing Outcomes: What was achieved in a day

Our goal was to propose events, physical interventions, policy recommendations and technologically based initiatives which help make Melbourne a safer and more inclusive city. The proposed ideas produced in the workshop are now currently under consideration by Plan International and other stakeholders present that day. Participant involvement through this process has deepened researcher understanding of specific issues, dangers and ambiguous tensions. The participants have also taken the Ideas and insights from the workshop back into the community. Those ideas are being incorporated into existing projects and initiatives. Another noted transformation in thinking was evident by a heightened understanding of accountability which was articulated by many PTV, City of Melbourne, and Vic Police representatives. It is a small shift in attitude which has major implications for these respective agencies and organisations. A follow-up survey was also conducted, which

produced tentative evidence that that our workshop changed thinking and that those insights and fresh perspectives are creating real-world impacts.

The value of these workshops therefore lies in their capacity to change participant thinking which in turn influences a complex chain of legislative, planning and policing systems. These

'oblique co-design' methods create deep and multi-modal social learning within a limited timeframe through simultaneous visual, verbal and physical communication strategies. The workshops as facilitators of knowledge exchange are also time efficient and create unique bridges across gendered, social and cultural divides. Certainly, the potential of oblique design to transform our thinking on contested and complex social issues needs to be part of a broader conversation on the value and significance of the discipline.

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