

DESIGN THINKING vs design thinking

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Terms & Concepts

Design thinking: A creative problem-solving approach drawing on a designer's skill and aptitude.

Co-design: Designing with multiple stakeholders throughout the entire design process, ensuring diverse involvement and participation is inclusive and valued.

Wicked problem: A problem that is unclear, difficult to solve and has no single answer.

Service designer: Designs solutions and experiences by organizing and planning within a current set of conditions to improve the quality of the service for the user.

Strategic designer: Uses design principles and decision-making processes to create innovation and growth opportunities within organizations.

Euro-centric culture: A cultural phenomenon that views the histories and cultures of non-Western societies from a European or Western perspective

Micro credentials: Certification-style qualifications that individuals choose to study to improve a skill found in a particular industry area. They are often short and carried out online.

Digital inclusion: The ability of individuals and groups to access and use information and communication technologies.

Affinity mapping: A business and experience design tool used to organize ideas, data and themes.

Non-Government Organization (NGO): A non-profit group that runs independently from any government.

Google Ngram: Is a search engine that documents and creates charts for how many times certain words appear in books that are printed between the year 1500 and 2008.

Throughout this research both academic articles and non-academic articles will be critically reviewed and valued alike, noting that non-academic blogs, websites, and articles are written, published in 'real-time', and offer a 'current and accessible' perspective to this research.

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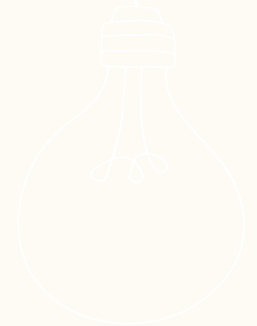
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Treaty of Waitangi Statement

“Tāwhaitia te ara o te tika, te pono me te aroha. Follow the path of integrity, respect and compassion”. This well-known whakatauki (proverb) author unknown speaks to the values that inspired this research. With design now espousing both human and planet centric approaches to its practice it has become clear throughout my process that it would be remiss not to acknowledge, appreciate and respect te ao Māori as a pivotal influence in enabling that. Although not where this research began, I have come to realise the collaborative, interconnected, holistic approach afforded design through mātauranga Māori and tikanga Māori when working with others for the betterment of ‘Spaceship Earth.’ Importantly, I have also learned that much of the work to be done to enable design to integrate what mātauranga Māori offers the future of design, must be led by Māori. An important component of my role, as a Pākehā designer, is to step aside, make space and engage meaningfully with this knowledge; always supporting its integration through my own practice.

Motivation

In 2019 I attended a Design Thinking workshop that sparked a curiosity in me. The workshop was run by an established and well-respected design consultancy in Wellington, with other participants being mostly students from outside of the design discipline. It was here that rather alarmingly I learnt that anyone, could learn to ‘think like a designer’ and ‘solve complex issues’ using design processes or knowledge. Perhaps most alarmingly, this was achievable all within a four-hour workshop. This confused me! I had spent my entire undergraduate degree deciphering complex world issues and attaining critical design skills and tools only to realise others think it only takes just a moment to enable these capabilities. The skills I believed I attained in my Bachelor of Design Innovations included design thinking. This knowledge enabled me to address, through design, some of the ‘wicked problems’ now inherent in our complex world and being addressed by the design discipline. The workshop I attended was based on a formula style, using simplistic and codified design processes. The consultancy purported the workshop as ‘all that was needed to address complex systems or strategic change’. The realisation that this was a common expectation of ‘The Design Thinking Workshop’ led me to investigate the contrasts and commonalities between how design practitioners use design thinking and what businesses consider design thinking to be within corporate or organisational contexts. My experience within The Design Thinking Workshop that I attended has initiated several questions and, to be frank, doubts, around what is being sold or portrayed to non-designers, and likely some design students, as design-thinking and what contemporary design practice understands and articulates design thinking to be.

As a young designer seeking a career path in a world that seems both expansive and blinkered in its thinking, I want to clarify for myself and other emergent designers (and clients) how ‘design thinking,’ as a process for enabling positive change within complex ‘wicked problems,’ can be used and implemented effectively and authentically.

Abstract

This research offers a comparison of the different uses of design thinking and investigates how design thinking is used within business models and compares this to the discipline of design’s practice of design thinking. It aims to clarify both the intended use of design thinking as conceived in the mid-20th century, and the current employment of design thinking which this research proposes has lost its way somewhat. This research also considers how the historic and contemporary models compare to each other and what roles and responsibilities design thinking has today. This research also recognises my own epiphany of how indigenous values can enable design and design thinking’s ability to contribute to positive impacts and innovations in the 21st century.

This study questions the now ubiquitous term ‘Design Thinking’ and asserts there is a misuse and confusion surrounding what could more accurately be described as a ‘coined moniker’ that is used interchangeably and unchallenged in both business and design practice. Initially grounded in a desire to define the differing practice or practices of Design Thinking/ design thinking, considered in one scenario as a noun, the ‘codified workshop’, the other scenario, as a verb, and as a part of a designer’s mindset and method; this research aims to elucidate conceptions and misconceptions about design thinking. It also offers a broadened understanding of design thinking, borne of Design Science by design theorists active in the 20th century.

This study begins by using traditional qualitative research methods to undertake a historic inquiry. This is recorded chronologically but importantly this content is considered in relationship to its varied contexts. Having established the content and the contexts of the investigation the next steps involve participatory research methods in which interviews are undertaken with several design practitioners, discovering themes through affinity mapping exercises (Naylor, 2019 & Appendix A). Following this, the identification of both peer-reviewed and more topical open access discussions, podcasts and postings are included to establish the status quo of design thinking discourse and practice in the 21st century. The final phase of this research is a reflective conclusion in which the research is synthesised into a personal dialogue that introduces one of the most important findings of this study: the relevance of mātauranga Māori (Maori Knowledge) to the process and implementation of design thinking moving forward.

The result of the analysis and synthesis of this information is several design teaching tools that elucidate the 'historic trajectory to date' of design thinking and a clarification of the lexicon used by the discipline, tools employed, key terms projected and the voices speaking for and to design thinking. The purpose of these tools is to better project the complexity of the practice and enable emergent designers to have a better knowledge base to critique, grow, and benefit from the efficacy of design thinking within both design praxis and alongside corporate organisations, not-for-profits, start-ups, and charities alike.

Positionality Statement

To understand my personal positionality for this research and selection for participant interviewees, key social identities were identified.

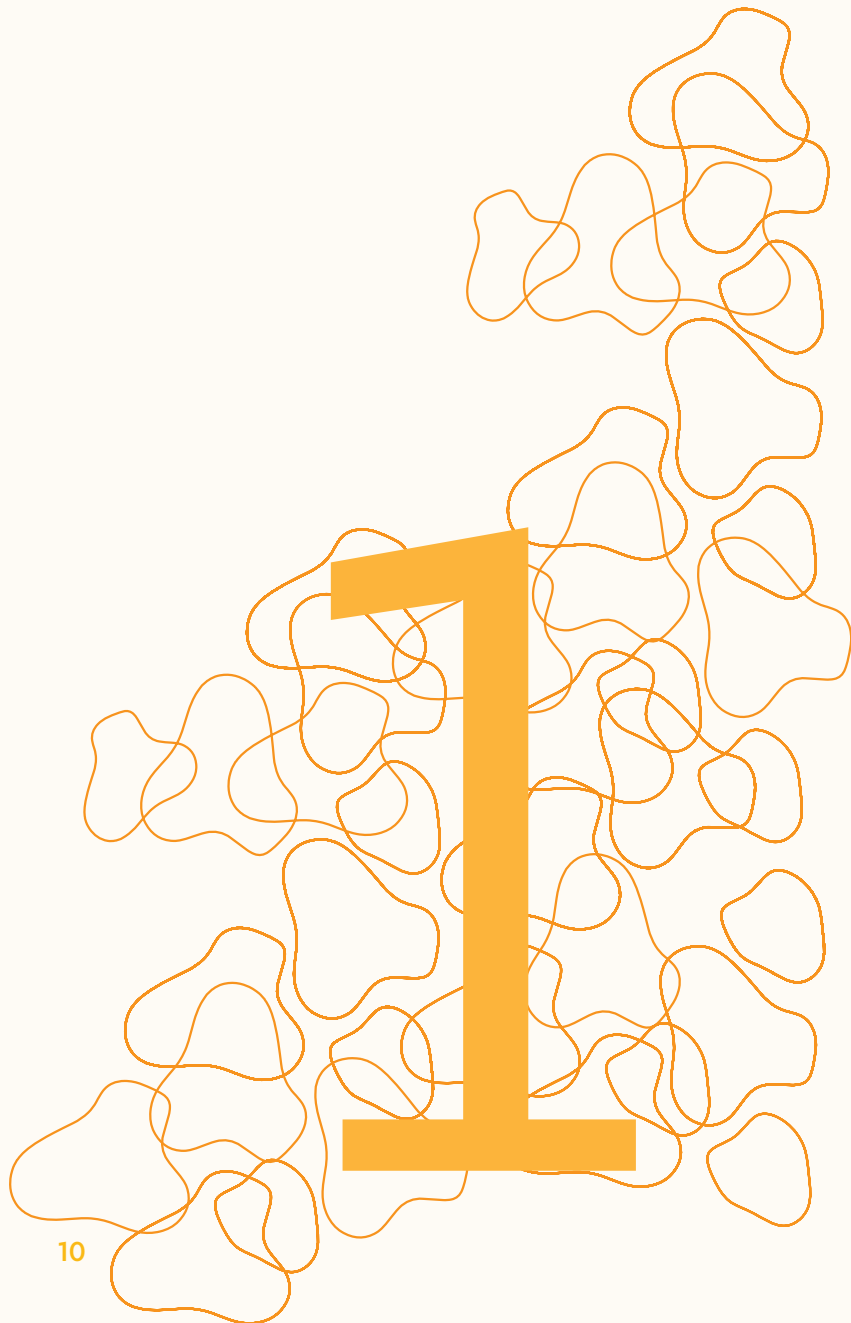
In relation to this research, it is recognized, I am a 23-year-old female, European Pakeha from Aotearoa, New Zealand. Having undertaken university education, I have gained an undergraduate degree in design for social innovation and marketing. These social identity factors are shaped and influenced from the society we live in and can change how we conduct research and how others perceive us. Research, although meant to be neutral, is not completely possible as previous experiences and perceptions create biases and assumptions that influence the way we research, including:

- **Participant selection**
- **Selecting and choosing sources and information**
- **Decisions of how the research has been gathered and presented**

Understanding positionality is important in design thinking as it is often used to solve problems for humanitarian crisis, minority groups and societies and positioning will ensure you have considered these internal and external implications.

Limitations

The study conducted had some limitations which should be taken into consideration when analysing the research. Although this research was successful in speaking to diverse range of professionals and educators it also recognises the small pool of interviewees does not represent all people, cultures or areas and users of design thinking and there would need to be more extensive and conduct larger quantities of interviews to conclude the ideas of this research further. Unfortunately word limitation and time constraints affect this. Also, limiting to this research is that every human being carries biases and assumptions, and the scope and conclusions to this research are from the researchers perspective.



Chapter One

1.1 Introduction

This research is a comparative study between how Design Thinking is used within business models as opposed to the discipline's practice of design thinking and I believe this to be a very poignant and well-timed investigation. The study specifically addresses the question of how these two modes of operation might be re-calibrated to better align or differentiate themselves as having roles to play in facing the social, cultural, and environmental challenges of the 21st century. Driving this research, is what I see as a misuse, but also confusion surrounding 'Design Thinking'. As a now ubiquitous term, it filters through the lexicons of both business and design disciplines and practices unchallenged (Hernandez-Ramirez, 2018). As an example, a course offered in Design Thinking in an institution in New Zealand describes the course as "Design Thinking is offered as a minor by the Design School; however, it is targeted at non-design students, many from the Bachelor of Business in the Faculty Economics and Law" (personal communication, May 31, 2021). The commodified and codified version, being Design Thinking (the noun), has been popularised by both agencies and academia alike. IDEO (Innovation Design Engineering Organization) and Stanford University's D-School are case in point (IDEO, 2021; D. School, 2021). Design Thinking, the noun, has been adopted by many organizations around the world and in New Zealand, for the sole purpose of inciting innovation to build business and create profit. With designers considered the arbiters of the design thinking space, the impact the commercialized version of Design Thinking may poorly reflect on the discipline of design.

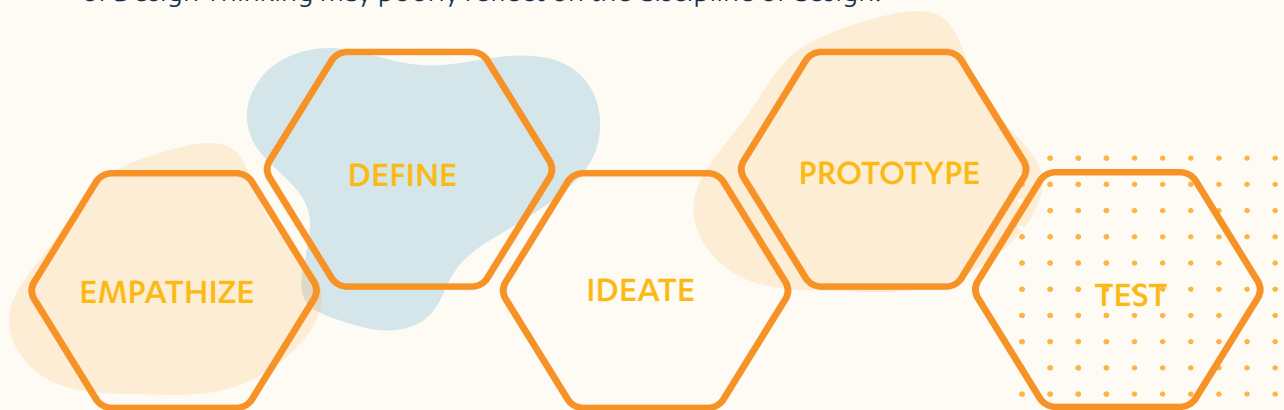


Figure 1: Design Thinking Framework inspired by IDEO and D.School models. MacKay, 2021.

It is well established by practitioners and academics alike that design thinking is a powerful tool for inspiring, facilitating and managing change. The opportunities design thinking offers to the unravelling of environmental and social challenges are overt. Prompted by the COVID-19 pandemic, the use of design thinking frameworks and workshops were more in demand than ever, and the use of online collaboration tools also skyrocketed in response to the restrictions placed on collaborative work by COVID-19. The habitual and

unquestioned reliance on these tools and the methodologies, was one of the catalysts for this investigation, and I am excited to undertake this task.

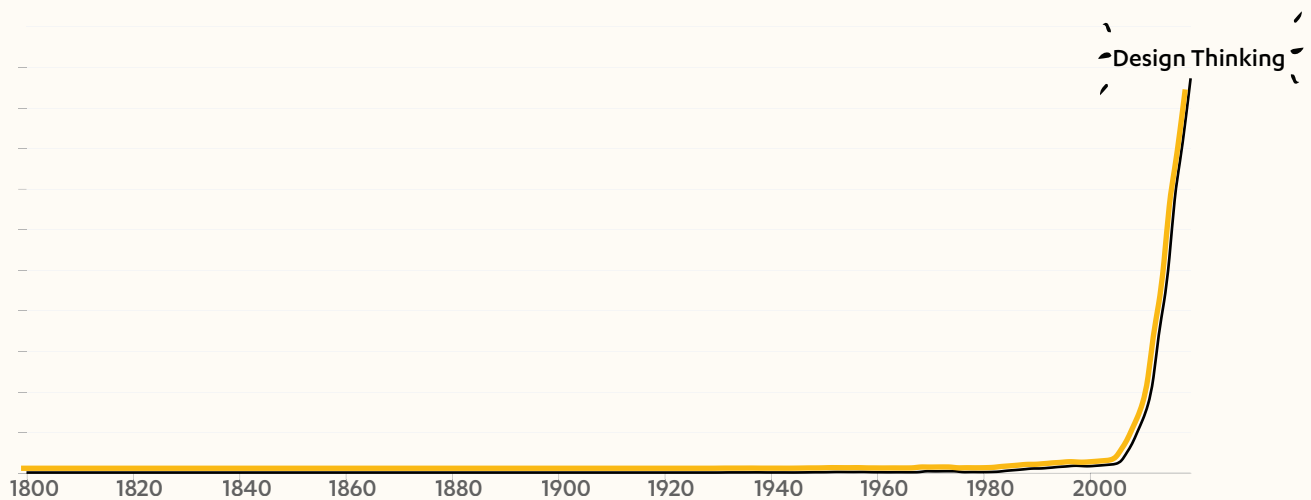


Figure 2: Google NGRAM - using the term 'Design Thinking'

Our first Google Ngram shows the staggering rise in the term 'design thinking' since 1991, and the time IDEO was founded.

This research takes a deep dive into the history of design thinking as a model; shaped and expressed by the highly respected Nigel Cross and Richard Buchanan who wrote seminal works introducing design thinking in the mid to late 20th century. Informing the contemporary contexts of this research are interviews conducted with academics whose research focuses on design thinking, business professionals who employ design thinking strategies, more generalist design practitioners, and Design Thinking facilitators. These interviews were undertaken to gauge relevant and current findings of how business and design practice use and view design thinking. These interviews also create space for new ideas and solutions to be considered. Building on my own capacity to determine an output or solution to aid the renewed appreciation or enhanced appreciation that this research seeks around what design thinking in the 21st century could or perhaps should look like in response to these findings.

This map (Figure 5) has been designed by a senior multidisciplinary creative, Daniel Rammal. His work has strong focus on communication and human-centred service design. With a background in marketing, Rammal seeks to address the development timeline of human centred design as well as design thinking to see relationships and links between them for use by professionals, particularly in business.

HUMAN CENTRED DESIGN: A BRIEF

Early known form of Participatory design (~380 B.C)

Ancient Athens, Plato's Republic

Ages ago

Participatory design can be traced back to Plato's Republic where citizens participated in community decision making. ⁽¹⁾

1960s

★ PARTICIPATORY DESIGN

Scandinavian Approach

In the 1960s and 1970s, Scandinavian countries were a major playground for participatory design. It is described as an approach to the assessment, design, and development of technological and organizational systems whereby workers has the right to participate in matters and decisions that concerns what kinds of systems are being developed and how those systems are being designed. ⁽¹⁾

User Centred Design Influencers through Human Computer Interaction ⁽¹⁴⁾

Lillian Gilbreth

1878–1972

First woman inducted into the National Academy of Engineering

Vannevar Bush

1890–1974

Grace Hopper

1906–1992

Douglas Engelbart

1925–2013

Ivan Sutherland

1938–

Donald A. Norman

□ Cognitive Science

□ Usability engineering & Design Theory

He re-formed Participatory Design into what became known as User-Centered Design. Less about usability & more about users needs. ⁽⁸⁾

★ USER CENTRED DESIGN

Wrote Design Thinking book in 1987, which focuses on the way the architectural designer approaches his task through the lens of the inquiry. ⁽³⁾

Peter Rowe

□ Urban Design & Architecture

A pioneer in applying a human-centered approach to designing objects and emerging technologies. ⁽¹¹⁾

Bill Moggridge

□ Interaction Design

Donald Schön

□ Urban Planning

□ Reflective Practice

□ Philosophy

Argued against the technical-rationality of design profession seen in the 1960's. His book, *The Reflective Practitioner* highlights the importance of self-reflection to a successful design process. ⁽¹¹⁾

cofounder of IDEO in 1990

Fuller focused on developing products that could be easily mass-produced using the most sustainable and simplest ways possible as he was inspired by the design philosophy of "more for less". He is known for popularizing the *Geodesic Dome*. ⁽²⁾



Buckminster Fuller

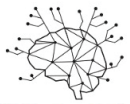
□ Architecture
□ Designer
□ Systems Theorist

★ DESIGN SCIENCE

In the 60s, efforts were made to develop a science out of the field of design, by applying scientific methodology and processes to understanding how design functions. ⁽⁹⁾

During this period, design was recognised as a science that benefited people by making physical things.

Simon's ideas are now thought of as principles of Design Thinking in the 1970s. He is known to have spoken of *rapid prototyping and testing through observation*, concepts which form the essence of many design and innovative processes right now. Simon argued that everything designed should be seen as artificial — as opposed to natural. ⁽⁴⁾



Herbert Simon

□ Artificial Intelligence
□ Computer Science
□ Economics

1970s

Victor Papanek

□ Architecture

□ Design & Anthropology

The sustainable design guru. He championed the importance of steering our product driven perspective towards using our design knowledge for resolving environmental societal and problems. ⁽¹⁰⁾

Horst Rittel

□ Architecture

□ Information Systems

□ Design Theory

Melvin M. Webber

□ Urban Design

□ Design Theory

Both regarded for inventing the term *"Wicked Problems"* (i.e. extremely complex/multi-dimensional problems). Wicked problems sit at the very center of Design Thinking, because it is precisely these complex and multi-dimensional problems that require a collaborative methodology that involves gaining a deep understanding of humans. ⁽⁵⁾

Patricia Moore

□ Industrial Design
□ Gerontology

Considered by many the mother of Universal Design and of it's main pioneers. She believes that "the power of design is to look at each individual, their home, their community, and the infinite small things that make for success or failure of interaction in those realms...." ⁽⁶⁾

★ UNIVERSAL (INCLUSIVE) DESIGN

Universal Design is human-centered design of everything with everyone in mind. ⁽⁸⁾

The Center for Universal Design at North Carolina State University interprets the following principles where each is briefly but clearly defined containing few guidelines that can be applied to design processes in any realm: physical or digital.

- Equitable use
- Flexibility in use
- Simple and intuitive
- Perceptible information
- Tolerance for error
- Low physical effort
- Size and space for approach and use ⁽⁷⁾

1980s

In the 80s, there was a great movement to understand how designers think and work.

During this period, design was separated from the physical things and the focus shifted on Interaction design.



Nigel Cross

□ Design Cognition

□ Design Studies

□ Design Research

Bryan Lawson

□ Architecture

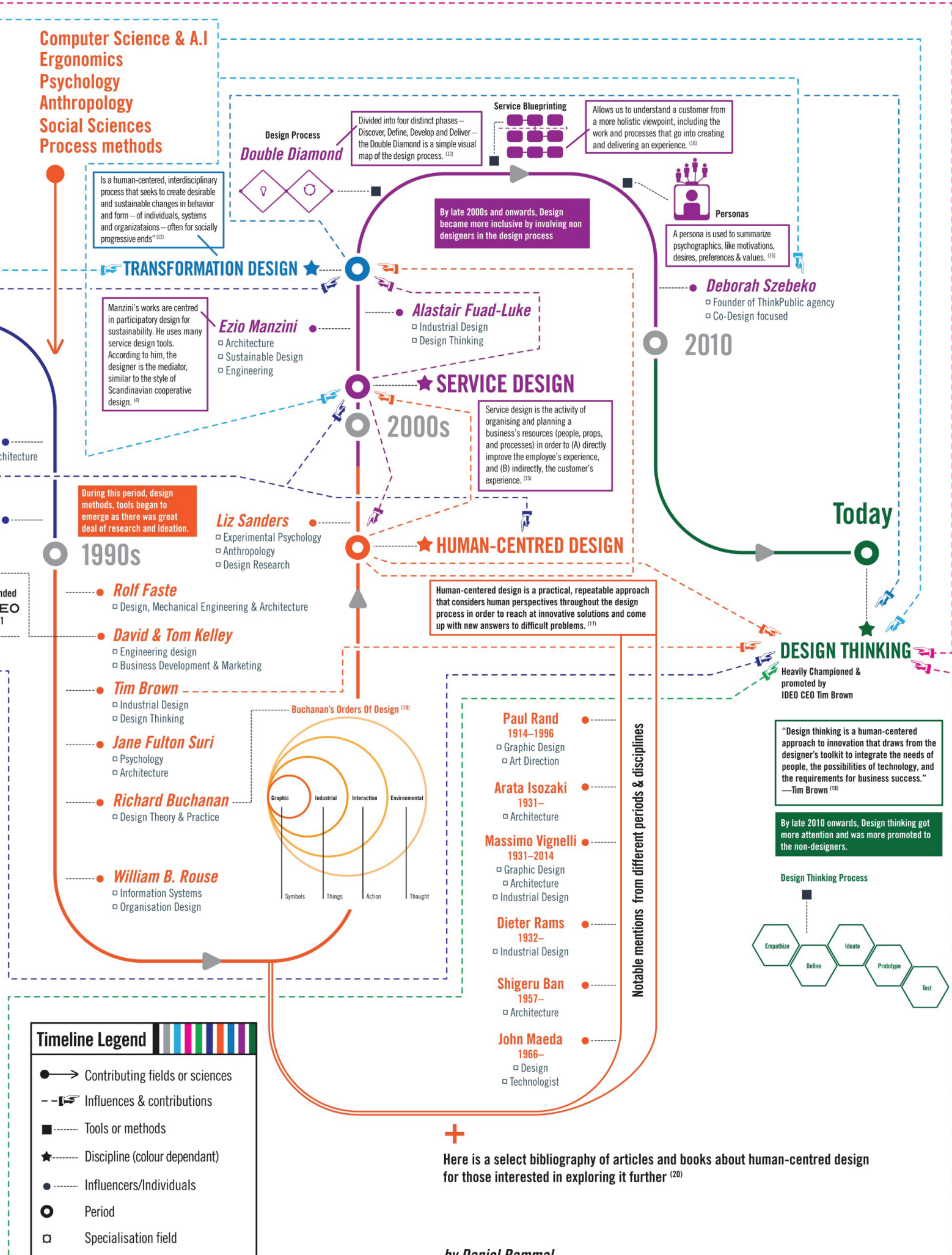
□ Design Research

Understanding "how designers think and work"

Cognitive & Behavioural Psychology Architecture Engineering

Figure 5: Human centred design: a brief history and major influencers by Daniel Rammal.

HISTORY AND MAJOR INFLUENCERS.



Rammal suggests that business professionals and design thinking are a great partnership, both focusing on human centred solutions. This research would assert that the connection between people focused or empathetic approaches are not always among the business use of design thinking – it needs to be the intention of the work for this to occur. The details and milestones highlighted by Rammal, showing the successful moments in time for design thinking and the major influences it has had over its lifetime.

1.2 Outputs

My own research showed me there was no design thinking history available or a dictionary of terms. Although in recent weeks as I approach completion – the conversation about design thinking, its beginnings, and its current uses is rife on professional platforms like LinkedIn. This study has as a creative output, designed and curated a digital timeline to illuminate the historic trajectory of design thinking, and collated a Design Thinking Alphabet to unwrap the contemporary lexicon of design thinking. This thesis concludes with a reflective discussion in Chapter Five as this discussion is not over and next steps need exploration.

As an emergent designer, seeking a pathway in a world that seems both expansive and blinkered in its thinking about the future, I want to clarify for myself and my fellow emergent designers what changes to the practice of ‘design thinking,’ will enable design practice, moving forward, to contribute to positive social change.



Figure 3: ‘Not Just For Designers’ card deck & ‘Teleology of Design Thinking’ platform Mackay, 2021



Figure 4: 'Not Just for Designers' deck in use. Mackay, 2021.

See link to creative timeline here: <https://xd.adobe.com/view/75d34067-acc6-49db-92d0-2aea63273c3f-2080/?fullscreen&hints=off>

1.3 Chapter Overviews

Chapter One

Acts as an introduction to the research topic. It outlines the two major comparisons for this study, design thinking in education and design thinking in business. This chapter outlines what this research sees as an ‘unchallenged’ issue of design thinking within these spaces.

Chapter Two

Although a literature review, this chapter is importantly also a historical overview of design thinking’s practitioners, researchers, and users bringing to surface the key voices for establishing design thinking as a discipline.

Chapter Three

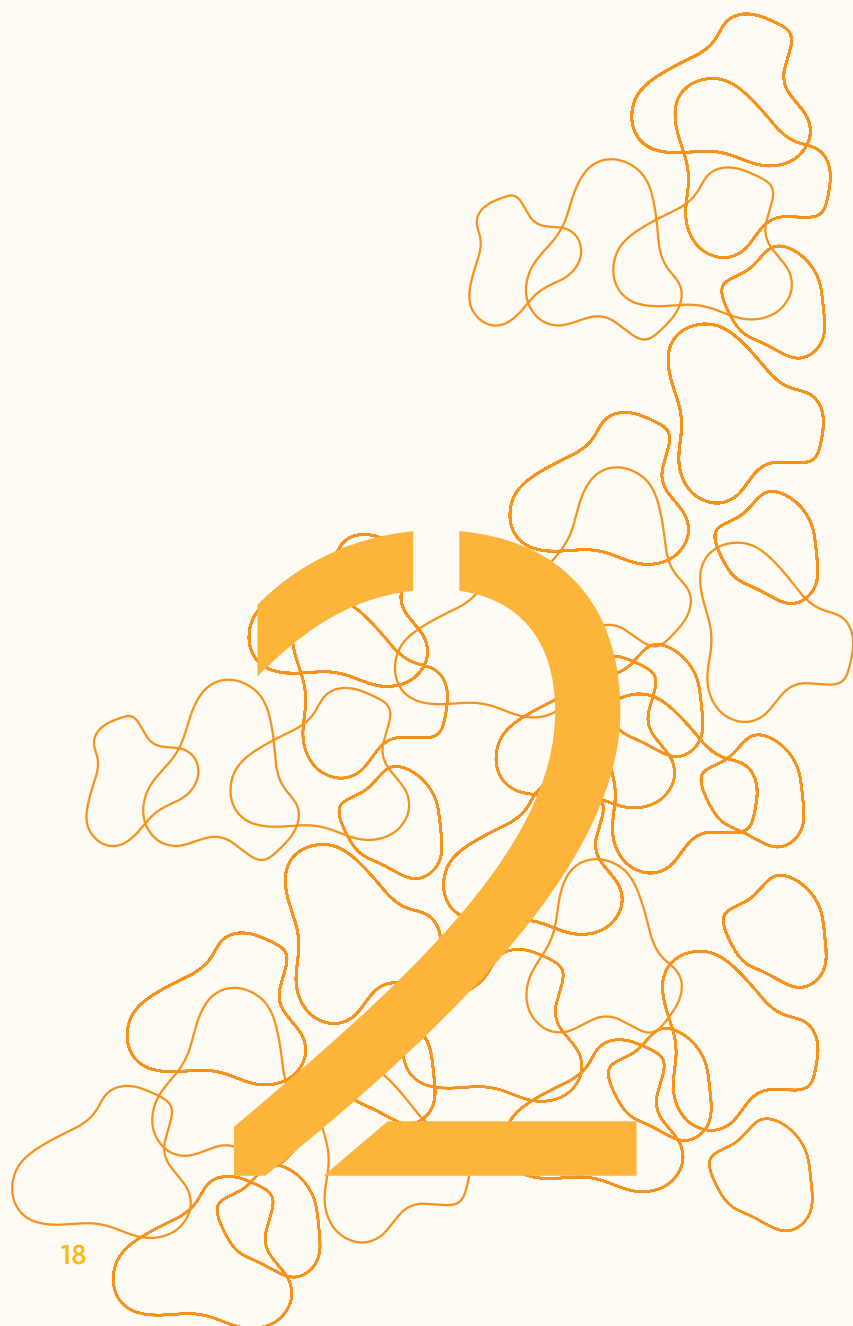
This chapter questions what, if any, compatibility exists between design thinking as inspired by Buchanan and Cross and the current commercialized models utilised by the corporate sector. This chapter will identify the distinctions between design thinking as a human and planet centric approach introduced as a part of the disciplines’ pedagogy to that of the commercial model that is often described as formulaic and commercially motivated.

Chapter Four

Building on Chapter Three, Chapter Four offers insight by undertaking industry interviews with participants who share their experiences and knowledge of design thinking within their field or study. These interviews elucidate how design thinking is currently being used and understood. The interviewees also discuss how design thinking is or could be projected and drawn upon to solve societal issues and wider complexities such as wicked problems. The interview guide can be found in Appendix B.

Chapter Five

Chapter Five begins to expose my reflective journey and discusses my own experiences of design thinking from two perspectives. One is as a part of an online design thinking class held at Parsons, The New School, and the other as a part of an interdisciplinary global team within the World Design Organisation. This chapter also reflects on how power, positionality and privilege can impact design thinking. This reflection draws upon future possibilities and next steps for this research, my response to, and hopes beyond this research.



Chapter Two

Literature Review and Historical Overview

2.1 Introduction

This chapter reveals the seminal voices in the establishment of design thinking and directs its narrative towards the contemporary understandings (or lack of) design thinking in the 21st century. Throughout the larger context of this thesis other voices are represented through ongoing references to journal articles, podcasts, and opinions from more public forum platforms, like Medium and LinkedIn, and the authors and protagonists who disseminate their opinions via these.

To begin, within design's history 'new ways of seeing' was a concept developed by educational reformist and social critic John Ruskin (1819 – 1900). Along with his colleagues Gottfried Semper (1803 - 1879) and Henry Cole (1808 – 1882) Ruskin campaigned for social issues as part of the British educational reforms in the mid to late nineteenth century. Their work formed educational strategies using ideas of 'good design' to develop equitable and accessible pathways to knowledge. Their work, paralleled by other reformists in Europe, fed into Bauhaus (1919 – 1935) ideology which, as we know, had a phenomenal impact on design by way of rethinking; processes, practices, social and sustainable design and uses of technology. Ruskin's vision was for everyone to understand design and equally enjoy it. This historic recollection, told through the lens of a traditional Eurocentric narrative is well documented, as is the before and after of the Bauhaus. This chapter offers an abridged view of historic design debates leading to the less illuminated historic narrative of the mid-20th century; the discourse of Richard Buckminster-Fuller, Victor Papanek, Richard Buchanan and Nigel Cross. This literature review then draws a line under these and unpacks the next group of designers to challenge design from within its ranks (much like the Bauhäusler) to question design's contribution to the planet. Papanek, an industrial designer himself, specifically criticized industrial design when he stated, "There are professions more harmful than industrial design, but only a very few of them" (Papanek 1972, p. 14). In response, it seems opportune to take another look at what design and its thinking is contributing or failing to contribute in the 21st century. The research timeline and activities can be found in Appendix C.

2.2 The Historic Debates – A Sneak Peak

Historical writings enable insights and learnings of what has worked, or not, before. As with most wars, World War II triggered new and more efficient ways of achieving the mass manufacture of weapons. These historical moments evidence the first times scientists

worked alongside engineers and designers and illustrates (sadly via a very destructive context) the vast progress for product design, technological advancement, and systems thinking. Although the effects of war are devastating, lessons were learnt around the benefits of combining research, technology, product, and user testing – albeit carried out without a title or disciplinary recognition of the process.

The desire to introduce a scientific or technological lens is attributed to the Bauhaus. This research is not going to test or challenge that. Accepting that narrative, German architect and the founder of the Bauhaus School, Walter Gropius's 1923 manifesto signaled a shift from collaborations of art and design to one of a marriage between design and technology. Bauhaus Master László Moholy-Nagy (1885-1946) is seen as one of the more prolific supporters of this, but as we will discover, his battle like Fuller and Papanek's would not be won or even understood in his lifetime. There were a number of polarizing debates throughout the 1950's and 1960's that contributed to the inclusion of scientific methodologies into design and becoming popularized by the 'Design Methods Movement' (1944-1967). This movement had other agendas, one of which was to ratify design as a part of academia. Christopher Alexander, a widely influential British-American architect and design theorist, was highly critical of the merger of design and science stating in his 'Architectural Theory of Organic Design', "Scientists try to identify the components of existing structures, designers try to shape the components of new structures" (Cross, 1993, p.18; Fuller 1969). As an 'organic designer', Alexander was rejecting the rigidity of science and the strict processes associated. He sought freedom of choice. It is important to note that Alexander was not the only barrier. Impeding the design science argument was the fact that there was little evidence of the implementation of science methods on the design disciplines or practices (Cross, 2000). Design Science as a term was brought into the spotlight by Buckminster Fuller, as a rational and methodological approach to design. Today it is argued that not all designers were satisfied with this approach, including Donald Schon (1930 – 1997) a philosopher and professor in Urban Planning at the MIT (Massachusetts Institute of Technology). Schon developed the concept of reflective practice and contributed to the theory of Organizational Learning that goes against science and design. Schon shared a more familiar view that; design has "messy and problematic situations" (Schon, 1983 & Cross, 2001). This research suggests but does not establish that there may be an interesting link here between messy solutions and wicked problems. Research for another day perhaps.

2:3 Defining design thinking

This research reluctantly acknowledges that there is currently no singular definition of design thinking. This investigation does, however, produce a definitive historic

trajectory and unwraps it to assist in the determination of a possible future pathway for the methodology. Unconverging broad understandings of design thinking, not the inclusion of a collection of mindsets, methods and design activities to frame and facilitate problem solving, using human-centered design approaches. These date back to before the term 'design thinking' was unilaterally adopted or appropriated to this process. Peter Rowe uses the term 'Design Thinking' prolifically in his 1987 book 'Design Thinking' and was one of the earliest users of the term. Following this, we see the term referenced within all facets of design, business, and education (Rowe, 1987). This literature review acts as both a catalogue of seminal texts and contemporary discourse while also framing and illustrating the historic trajectory of design thinking and those who have contributed to its introduction, maturation, and importantly its mutation. This research argues that the clarification of this knowledge brings design to a critical 'breaking point' that requires analysis and synthesis to enable the proposal of next moves or changes.

Design thinking is not a recent manifestation or simply another design tool. This chapter recognizes design theorists Richard Buchanan and Nigel Cross (1942) as the instigators of the term and practice. Design thinking was introduced as an important new component of design; aiding both its capacity and commitment to contribute to the evolution of humankind and the planet we inhabit. In his pioneering work, 'Design Research and the New Learning', Buchanan offered insight into design thinking by saying, "One of its great strengths is that we have not settled on a single definition. Fields in which a definition is now settled on, tend to be lethargic, dying, or dead fields, where inquiry no longer provides challenges to what is accepted as truth" (Buchanan, 2001, p.8).

A collection of various definitions over time show design thinking's inconsistencies..

“ ..new liberal art of design thinking is turning to the modality of impossibility. It points, for example, toward the impossibility of rigid boundaries between industrial design, engineering, and marketing. It points toward the impossibility of relying on any one of the sciences (natural, social, or humanistic) for adequate solutions to what are the inherently wicked problems of design thinking. Finally, it points toward something that is often forgotten, that what many people call 'impossible' may actually only be a limitation of imagination that can be overcome by better design thinking ”
(Richard Buchanan, 1992).

“It means stepping back from the immediate issue and taking a broader look. It requires systems thinking: realizing that any problem is part of larger whole, and that the solution is likely to require understanding the entire system”
(Norman, 2010).

“Design thinking is to have a bias toward action and empathy toward who you are designing for... to not have a fear of failure”
(Roth, 2020).

“Design thinking is synthetic. Out of the often-disparate demands presented by sub-units' requirements, a coherent overall design must emerge. Design thinking is abductive in nature. It is primarily concerned with the process of visualizing what might be, some desired future state and creating a blueprint for realizing that intention. Design thinking is opportunistic: the designer seeks new and emergent possibilities. Design thinking is dialectical. The designer lives at the intersection of often-conflicting demands – recognizing the constraints of today's materials and the uncertainties that cannot be defined away, while envisioning tomorrow's possibilities”
(Leidtka, 2000).

“Design thinking is a human-centered approach to innovation that draws from the designer's toolkit to integrate the needs of people, the possibilities of technology, and the requirement for business success”
(Brown, 2019).

Design thinking as a methodology dates back to the late twentieth century, where Richard Buchanan in 'Wicked Problems in Design thinking' outlined design's capabilities and capacities to impact change (Buchanan, 1992). He proffered design thinking as "a new liberal art of technological culture" and challenged design to be applied to a variety of problems (Buchanan, 1992, p.5).

"Design Thinking is not thinking directed toward a technological 'quick fix' in hardware but toward new integrations of signs, things, actions, and environments that address the concrete needs and values of human beings in diverse circumstances" (Buchanan, 1992, p.21).

Similarly, Nigel Cross in his seminal text, 'Designerly Ways of Knowing: Design discipline vs design science,' highlighted the coalescence of design and science, discussing and demonstrating the benefits of a science-informed approach to design that could contribute to the mitigation of complex issues (Cross, 2001). Their separate but comparable recognition of a methodological process that highlighted design's ability to address more than mass production or communication, but to unravel complexity was widely celebrated across the globe and multiple disciplines. Both these works continue to offer insight to both complexity and systems thinking theories that contribute significantly to contemporary attempts to mitigate large scale and often global issues.

Juxtaposed to design thinking as purported by Buchanan and Cross is the business or corporate adaptation of design thinking as a design tool or workshop using design tools. This model is demonstrated in workshops and micro-credentials developed in the 21st century to promote and disseminate 'Design Thinking' for its capacity to promote organisational, strategic and systems innovation. Large corporations such as Apple and Microsoft have used models of design thinking that prioritise production efficiency and fiscal proficiency describing it as Design Thinking. Clarifying this model Martin, a large-scale organisational strategy advisor and author, described Design Thinking as the next competitive advantage, in his article 'The Design of Business'. Martin stated its benefits as "value coming from a competitive advantage with the aim to drive monetary gain and business growth" (Martin, 2009). But the blatant commodification of the capacity and capability of the design profession's skills into a codified set of rules, has led to calls for a renewed critique and a realignment and reclarification of the discipline's understandings of design thinking by design researchers, academics, and practitioners. One of this study's interviewees is an Associate Professor from a highly ranked (QS World Rankings) design school in the United States. They noted that it had only been the past few years that many design institutes had started to challenge the commodified practices and the codified frameworks saying that these "provide easy answers to complex questions, that's why they

are so tempting to organizations” (personal communication, February 24, 2021).

In their seminal texts, and as a part of or in association to, the design scientists vanguard of the mid-20th century, Nigel Cross (1942), Richard Buckminster Fuller (1895–1983) and Victor Papanek (1927–1998) sought to unveil the challenges facing design practitioners and the discipline at large. Much of what they said went unheard at the time, but as these challenges still exist or have become urgent in the 21st century, their voices are reclaimed by the vanguard of designers and academics seeking to have a positive impact on the discipline and the planet in the 21st century. These include Enzo Manzini, with the DESIS Network (Design for Social Innovation Towards Sustainability), Arturo Escobar, and Professors Terry Irwin, Gideon Kossoff, and Cameron Tonkinwise within Transition Design; all offering provocations and pathways to large scale positive change (DESI Network, 2020 & Irwin, 2015). These designers and researchers have developed and transitioned design from John Ruskin’s nineteenth century reformist ideal of ‘new ways of seeing’ through the design scientists ‘new ways of doing’ onto the twenty first century models of ‘new ways of being’ as discussed by Irwin and O’Sullivan (Irwin, 2015 & O’Sullivan, 2017). In Fuller’s 1969 work, ‘Operating Manual for Spaceship Earth Towards Utopia or Oblivion’, he highlighted the need for sustainable practices (Fuller, 1969). His science fiction styled ideas have resurfaced in recent years along with Papanek’s 1971 ‘Design for the Real World’ and both continue to influence modern-day thinking. Fuller used the metaphor of a ‘Spaceship’ to describe Earth and to emphasize the notion that the whole of the planet’s population needed to work together to gain collaborative understandings of limited resources (Fuller, 1969). Fuller’s idea is that it should be everyone or no one to join everyone together in the task of change, not just leave it to governments or organisations to fix (Fuller, 1969).

2.4 Design and Science

Intersecting again in the 21st Century

“Scientists try to identify the components of existing structures, designers try to shape the components of new structures” (Alexander, 1964, p. 97).

This research makes a rather significant leap in time at this point. This is done to solidify the relevance of protagonists like Buckminster Fuller and Herbert Simon (1916 – 2001). Simon was an American economist, political scientist and cognitive psychologist, who developed the Bounded Rationality model which advocates the idea that humans are only partially rational. Both Fuller and Simon highlighted the differences between design and science, recognizing the strengths and weaknesses of both. Both men attempted to strengthen both disciplines through the integration of them into each other’s realms. Cross recognized the link between design and science in 1982 suggesting, “The 40-year cycle

in these concerns appears to be coming around again, we might expect to see the re-emergence of science-design concerns in the 2000's" (Cross, 1982, p. 95).

Herbert Simon had highlighted the distinctions between science and design and labelled the processes of bringing these together in his book 'Sciences of the Artificial' (1968). Simon's work around human problem solving created a readable version of what we understand as the design process (Simon, 1968). Christopher Jones is quoted in Cross's 'Designerly Ways of Knowing' as saying "I reacted against design methods. I dislike the machine language, the behaviourism, the continual attempt to fix the whole of life into a logical framework" (Cross, 2001, p.50).

Fuller had named the 1960's the 'Design Science Decade' due to his belief that the human and environmental issues being faced at the time were not able to be mitigated by politics and economics alone (Cross, 2001). During the recent and ongoing global event of the COVID-19 pandemic, we are seeing creative solutions and design's strategic thinking methods gaining higher use and recognition. In New Zealand, the use of intentionally designed and strategic communications to the public has been a critical component throughout COVID-19 and contained highly complex, often confronting information. At its heart, it calls for calm, collaborative, and compassionate human behaviour. The Instagram feed 'Design Emergency' celebrated the New Zealand Unite Against COVID-19 communication campaign that was commissioned by the New Zealand Government and designed by the Wellington creative agency, Clemenger BBDO (Batten, Barton, Durstine, and Osborn). 'Design Emergency' is hosted by Paola Antonelli, author, curator and Director of Research & Development at The Museum of Modern Art, New York City and Alice Rawsthorn, design critic and author of Hello World: Where Design Meets Life (2013) and Design is an Attitude (Rawsthorn, 2018). Both Antonelli and Rawsthorn complimented the cohesiveness, comprehensiveness, and creativity of both the content and strategic roll out of the Unite Against COVID-19 campaign (Rawsthorn & Antonelli, 2020).

The Squiggle

A discussion about design thinking would not be complete without an acknowledgment of Damien Newman's 2006 illustration 'The Squiggle' which Newman suggests represents how the design process looks. It begins, he believes, as complex, unclear, and messy. But then as you begin to define the issue it straightens out and points towards a single outcome or solution.

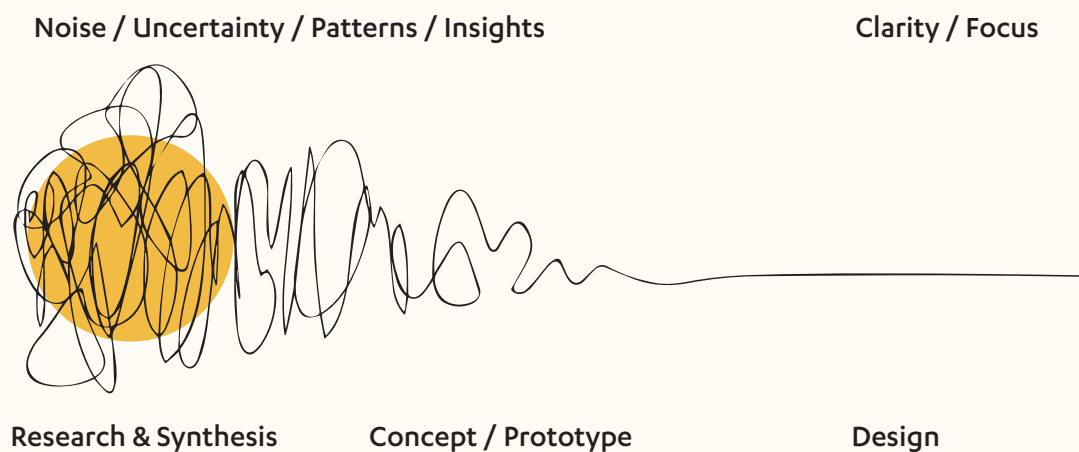


Figure 6: The Process of Design Squiggle by Damien Newman.

Newman drew it after being tasked with explaining (within a short time frame) the complexity of design to a client (a non-designer). The image seems to have stuck!

2.5 Design Thinking - A ubiquitous term

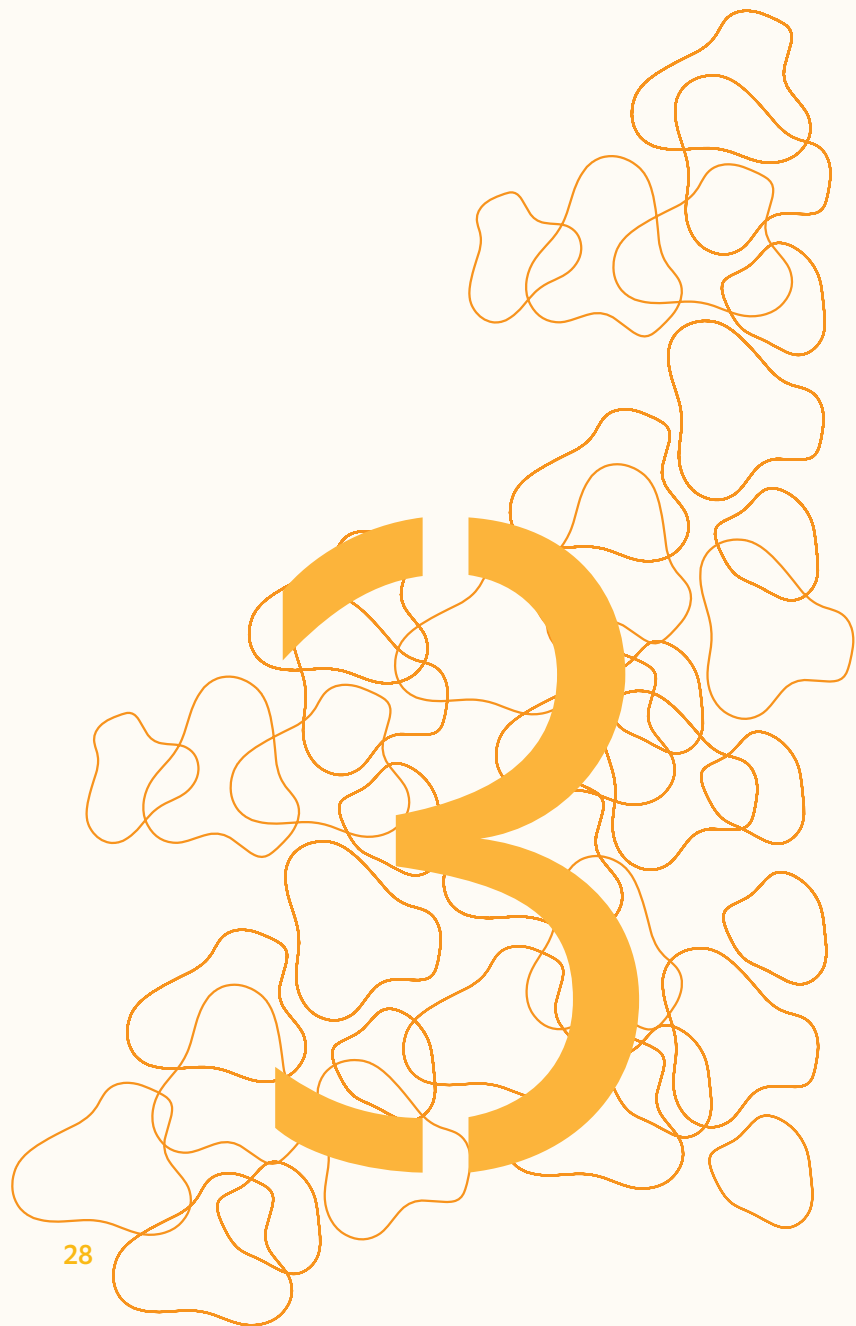
'Design thinking' is not a new idea or term. It has also become widely used, although likely not understood, outside of the discipline of design by non-designers. This chapter has clarified that the concept of viewing problems through design emerged in the late 1970s in association with new approaches in design education, with the Bauhaus being considered as the most radical if not impactful. Chapter Two also noted that Nigel Cross's 'Designerly Ways of Knowing' (1982), and Richard Buchanan's 'Wicked Problems in Design Thinking' (1992) cast a bright light on design thinking as a 'new way of doing' design and how this could impact positive change. The discussion also established that design thinking has in recent decades been co-opted for use in business practices (Cross 1982; Buchanan, 1992). Buchanan was aware of the different ways that design could have a wide and positive influence on many disciplines and practices, suggesting there is "no single definition of design, or branches of professionalized practice such as industrial or graphic design, adequately covers the

diversity of ideas and methods gathered together under the label” (Buchanan, 1992, p.1). Buchanan understood design as varied and complex just as we now understand it in research and practice today. Buchanan also appreciated that design was a powerful way to form connections and meanings to uncover understandings between disciplines and practices (Buchanan, 1992).

Victor Papanek’s seminal text, ‘Design for the Real World’ addresses what he describes as real-world problems and the importance of the consideration of humanity and the planet’s health (Papanek, 1925). His discoveries brought ‘new ways of thinking’ to the design process by evaluating the relationship between the designer and the user. Papanek’s belief “all men are designers” (excuse the lack of gender diversity) proports that anyone is capable of being creative (Papanek, 1925, p 3; Goodreads, 2020). The book’s relevance to the coined moniker ‘design thinking’ stems from the idea that we need to question our actions and understand who we are designing for (with, if talking about this in the present) and how the end user and wider global contexts are affected by designerly actions. Importantly, Papanek asserted that design needs to be motivated by good intentions and values and carry meaning, and NOT just be aesthetically beautiful or simply on trend.

The ideals of Fuller, Buchanan, Cross and Papanek’s thinking have been adopted and developed by the DESIS Network and Transition Design; both 21st century provocations for sustainable and sustaining positive change. Arturo Escobar’s ‘Designs for the Pluriverse’ also extends Papanek’s ideology of ‘new ways of being’ to the planet centric approach that the growing numbers of 21st century design theorists, researchers, educators, and practitioners are attempting to introduce and employ in the field of design. As their ideals continue to gather momentum, their importance and relevance to this study, especially as it drills down to the use of design thinking within design practice in Aotearoa New Zealand, becomes even more evident. New Zealand is in a unique position to lead design’s next shifts because it is a part of a bi-cultural nation and a multi-cultural society and as Escobar stresses autonomous design should be developed alongside place-based and collaborative approaches (Arturo, 2018).

“Such design attends to questions of environment, experience, and politics while focusing on the production of human experience based on the radical interdependence of all beings” (Escobar, p. 142, 2018).



Chapter Three

3.1 Comparisons

Following on from the literature review and responding to the shifts within the use of both the term design thinking and the practice of design thinking over the last decade, this research now reviews the discourse around current uses of design thinking by designers and non-designers. This chapter questions what, if any, synergy there is between design thinking as envisioned by Buchanan and Cross when they described it as a critical component of design education and as a result praxis, and the current commercialized models so extensively utilised by the corporate sector. Building on this, comparisons between the pedagogical models of design thinking within tertiary design education and that of the commercial and formulaic workshop will be undertaken. This chapter will identify the distinctions between design thinking as a human and planet centric approach introduced as a part of the disciplines' pedagogy to that of the commercial model that I suggest is often overly formulaic and overtly commercially motivated. By creating better clarity, new ways for design education to distinguish itself from or attach itself to the commercial model can be identified. The aim of this approach is to better understand where, when, how and by using what tools can design thinking be redressed to enhance the discipline's ability to impact positive change and as a result impact its use within the corporate sectors as well as Not for Profit Organisations (NPOs) and Non-Governmental Organisations (NGOs).

In 1984 Papanek promoted the need for design education to teach new methods and processes. He suggested design education should be based on learning skills, nourishing talents, and understanding concepts and theories that inform the discipline of ways and means to ensure it acquires a solid foundation to build a philosophy from (Papanek, 1984). Papanek's beliefs, now seen as being ahead of their time, still resonate within the discipline. Papanek stated "the skills we teach are often related to a process and the working methods of an age that has ended" (Papanek, 1984, p. 285). With the severity and urgency of the issues and challenges facing the world today it is imperative that design ensures its methods and methodologies remain relevant to the problems that need solving.

Central to this research has been the elucidation of current perceptions and understandings of design thinking in the varying contexts it is taught and/or used in. The issue this research addresses is the flood of codified and formulaic models of design thinking frameworks pervading business and management, without consideration of the diverse environments and agendas of business models, scale, or issues to be mitigated or addressed (Dune, 2018). This research establishes that design thinking has been widely, perhaps universally adopted beyond the design discipline and into both public and private sectors within New

Zealand and the international arena. Needing little introduction for their contributions to design thinking (actually Design Thinking) and its use beyond the discipline are IDEO, and Stanford University's D. School. Despite the success and wide dissemination of both IDEO and D.School teachings, more recently the design community is speaking out and critically analyzing their models to differentiate the business models of design thinking from the designer's use of it. IDEO has also most recently been very publicly dressed down on social media for its duplicity in claiming one thing and delivering another (Aye, 2020). This rather damning assertion will be unwrapped further in Chapter Five, as a part of the reflection.

One of the most alarming findings unwrapped throughout this study was that the credibility or relevance of the design profession has also suffered in response to the commodified versions of Design Thinking used in the corporate or public sectors. Chapter Two laid out the initiation and historic trajectory of design thinking. This chapter unpacks occasionally the emergent critique of what in general terms non-designers think design thinking to be and the employment of design thinking to address environmental and social issues, in line with Fuller, Papanek, Cross, and Buchanan's aims for it. Standing in the way of this original intent, this research claims is the codification and commodification of design thinking has made it less about social and environmental impact and more about fiscal innovation and surety. Chapter Four addresses the nuances of the financial aspects – with interviewees saying, "it is only a detail in this story, even NGOs need money to provide the services they do" (personal communication, December 17, 2020).

The current disagreement lies in that the version of design thinking, offered within and by the discipline of design, and built on Cross', and Buchanan's ideals that promote a holistic, human-centered, planet-centric, and collaborative approach. Differing drastically from the highly energized, fast-paced corporative workshop model that promotes Design Thinking as the way and the means to gain innovation and efficiency with profit being the ultimate goal. The argument around could or should they be the same, is for another day. But by distinguishing design's model of design thinking as a disciplinary tool for change, this research aims to clearly define the differences between the divergent models of Design Thinking and design thinking. This study claims these are distinct models and both design and business should appreciate the differences to gain the best results from the processes they employ. The result of the analysis and synthesis of this information is a design teaching tool that elucidates the historic trajectory (to date) of design thinking and a clarification of the lexicon used by the discipline. The purpose of these tools is to better project the complexity of the practice and enable emergent designers to have a better knowledge base to critique, grow, and benefit from the efficacy of design thinking within both design praxis and alongside corporate organisations, not-for-profits, start-ups, and charities alike. Also, to understand the specific lexicon used, its limitations and mutations along the way and

thoughts for its future.

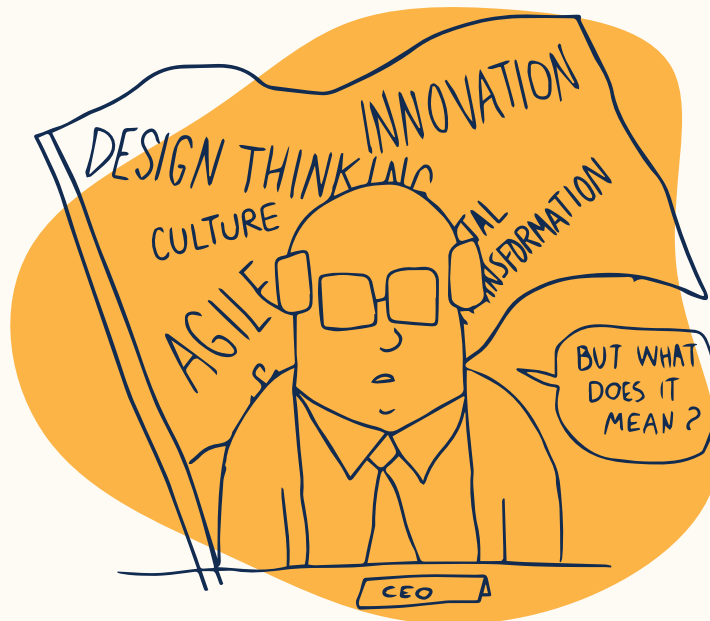


Figure 7: The confused CEO's guide to 21st century Organizations by Virpi Oinonen, 2019, The Business Illustrator.

This visualization taken from the 'Business Illustrator' goes a long way to support storytelling as a powerful way of communicating how business and corporations take on innovation methodologies and design thinking cultures without understanding what they are, what they can do and why they are relevant to their development. The 'Business Illustrator' helps to promote new ways of thinking and doing in organizations and uses illustration to explain them. Oinonen's full comics are a great example of this being done well (Oinonen, 2019).

3.2 The Divergence of the Design Thinking Models and Aims: In Business, Education and Design Practice

"Design thinking was developed, adapted and implemented as a fixed model. The unfortunate consequence is that working with this approach has itself become the goal of innovation, rather than any social outcome" (Prehn, 2018).

The first example offered is a local one, and it highlights the short sightedness in a corporate/public sector context of how design thinking should be used. MindLab, was, until its closure in 2018, a contemporary postgraduate institute offering a suite of NZQA accredited qualifications and the oldest government innovation lab. It supported design thinking in the public sector and is, this research argues, one example of how misunderstandings around the aims and objectives of design thinking throughout its own

corporate/public sector evolution have diminished its capacity to impact change. MindLab's mandate was to encourage and inspire organizations to create methods of innovation and solve problems. Thomas Prehn made the decision to not promote the commodified Design Thinking methods as he considered them to be, "utilitarian and easily applicable, and they don't help usher in a sustainable change to how organisations work" (Prehn, 2018). Instead, Prehn suggested design thinking models should "strive to leave a cultural dent in everything you do, by challenging inherited assumptions and behaviours, and using the power of example to prove impossible wrong" (Prehn, 2018). In his 2018 article, 'Design Thinking or Design Sinking', Prehn claims the connection of design thinking to social change is minimal – do a google search there are numerous images of frameworks but few connecting these to social change. Go on, google 'design thinking images' and see what you get.

The alignment between Prehn's assertions and the concern of this research becomes clear in his statement, "with lightning speed design thinking became the funky pocket square of C-suites (executive level managers) in corporate hierarchies worldwide" (Prehn, 2018). Another sad example is that New Zealand's own Service Innovation Lab (SIL) was closed down in 2020. The irony? SIL packaged their work into a toolkit for non-designers to use in the design of innovative change (The Service Innovation Lab, 2020) and made themselves (the designers or arbiters of design thinking) redundant. Again, Prehn spoke out saying, "innovation should never revolve around process and methodology. Innovation is a mental capacity, a mindset of relevance, meaning, and value creation... embracing that learning comes from experiments, from curiosity and courage... These are all individual, human traits that must be made to flow in the organisation's bloodstream as unconsidered behaviour: as habits" (Prehn, 2018).

"This misunderstanding of design as a technique rather than a discipline also generates team conflicts. As a result, attempts to apply the newly acquired (and relatively shallow) design thinking skills often fail in application unless an experienced design practitioner serves as guide" (Meyer & Norman, 2020, p.20).

Design thinking includes numerous tools; ethnographic research, empathetic approaches, collaboration, diversity of participants and the defining of complex problems, and is now being used in both corporate and social sectors around the world (Liedka, 2018). The rapid growth and reliance on design thinking, with its own recipe for appropriation within the corporate sector makes it crucial that a contemporary definition, or multiple definitions are established. This establishment would help to acknowledge the variance of uses within a similarly variant number of contexts and enable recalibrations where needed or, as this research argues, draw design thinking back in line with the needs of the 21st century.

Dr. Lesley-Ann Noel, Associate Director for Design Thinking for Social Impact is an Afro-Caribbean designer, focusing on critical emancipatory design thinking. Noel suggests that we should be framing opportunities around positive feelings and experiences, rather than just problematizing everything (Noel, 2020). Noel also promotes design thinking as a creative problem-solving approach and an important tool to use in education. Noel's scholarship looks at design thinking through a critical lens in Trinidad and Tobago. Noel's studies have included students as young as nine years old to engage and develop skills involved around critical thinking, empathy building and practical engagement skills, all through using design thinking to help marginalised people have a voice in major social issues that impact them and they can have an impact on (Noel, 2018). The results from the three-week observed workshop undertaken in a primary school in Trinidad and Tobago, found that these skills, including creating through design, were crucial in the children's cognitive and social development and ensured long term benefits even at an under resourced school (Noel, 2018). Noel also designed a set of cards called the Critical Alphabet (Noel, 2021) that clarify the lexicon of her work and those in the social impact space. Rob Peart, an experienced designer and writer, also describes designers as more than just problem solvers, suggesting "It's certainly not as simple as problem solving. Yes, that's one thing designers do, but so do butchers and bakers and candlestick makers" (Peart, 2017).

Within design education, the perimeters for teaching design thinking are wholly different to that of a business context. Don Norman, author of 'The Design of Everyday Things' suggests the way design thinking is taught within education caters for infinite time frames and no financial stress or time constraints. Often this means there is more time to learn the crucial design thinking steps and carry them out fully. But in the real world, he suggests design projects that can accommodate this approach are a luxury (Norman, 2013). Norman's concerns highlight the challenges facing the next generations of designers as they manage the ongoing balancing act of ideologies with practicalities and the limitations of real-world projects with time constraints and budgetary limitations (Norman, 2013).

Lee Vinsel is a critic of the commercialized models of Design Thinking and author of 'Innovation Delusion: How our obsession with the new has disrupted the work that matters most', one of the newer voices in this discourse. He has a polemic approach to the discussions, he asserts, as does this research, that design thinking as a tool is now less about social change and more about innovation within business for monetary gains (Vinsel, 2017). Critics of the design thinking model used within the business workshop model often state, "current models of design thinking are little more than another jargon-filled management fad driven by commercialization" (Rodrigo, 2018, p.1; Vinsel, 2017). This research argues that the shift identified by Rodrigo et al, is working in opposition to what design institutions and academics are introducing as a tool for addressing social and complex issues.

The Bryan Lawson and Kees Dorst's 2009 book, 'Design Expertise' challenges the idea that 'everyone is a designer'. Lawson and Dorst undertake to discover and uncover what they see as the required skills and abilities to be a designer and the education needed to engage natural human cognitive abilities in their design process. They suggest that learning these or from this, skills can be identified to better equip the next generation of designers (Lawson & Dorst, p.10, 2009). Lawson and Dorst believe design is complex and addictive but that designing remains one of the least understood of all our cognitive powers and most difficult to teach" (Lawson & Dorst, p.10, 2009).

The Commodification of Design Thinking

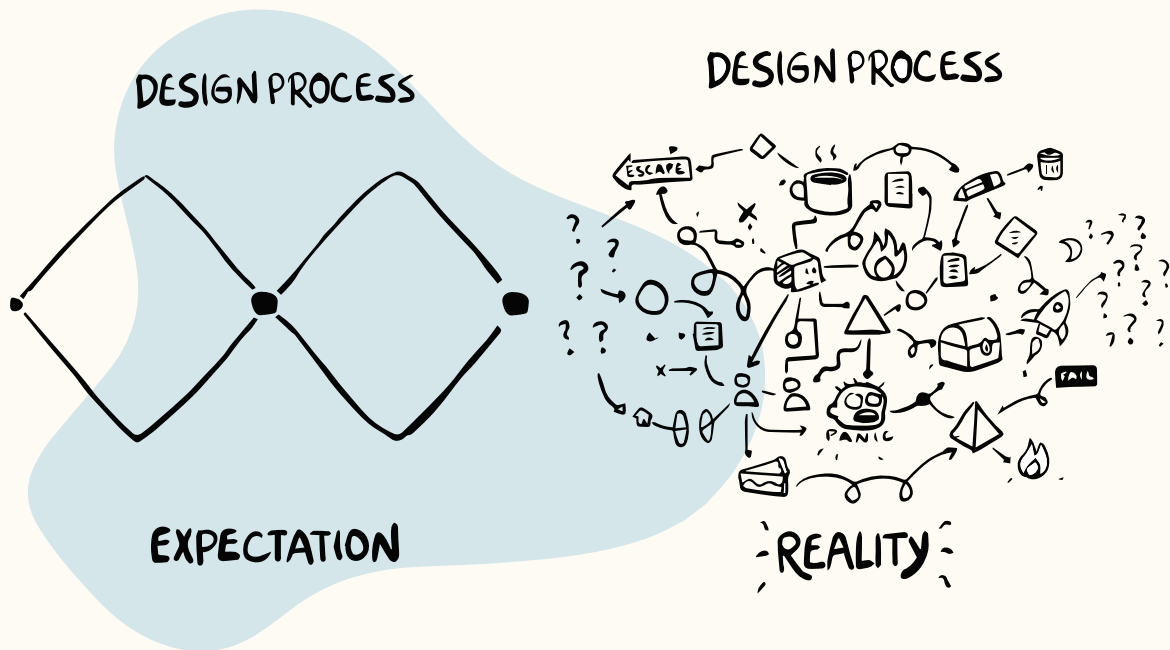


Figure 8: Design Thinking process 'Expectation vs Reality' by Pablo Stanley

Pablo Stanley, a comic illustrator/designer, and the co-founder of 'Blush' uses his skill and humour to create relatable works for creatives. Stanley often points out what he sees as the truth about human centered design. The illustration above, designed as a moving gif, is one that fits this research.

Vinsel and Rodrigo Hernandez-Ramirez, author of 'On Design Thinking, Bullshit, and Innovation' both claim current commercialized models of design thinking distort and mystify the role of design in problem solving processes (Ramirez, 2018; Vinsel, 2020). They argue that the commodified model of design thinking used by corporations focuses on simple and linear frameworks with the use of buzzwords and corporate jargon for the benefit of non-designer's understanding. Vinsel believes design thinking is only successful when used as a model of education, claiming the problem lies with "the business consultants who give TED Talks - out there selling it. It's all anti-intellectual. That's the

problem. Architecture and design are profoundly intellectual. But for these people, it's not a form of critical thought; it's a form of salesmanship" (Vinsel, 2018).

Pentagram designer, Natasha Jen is an ardent critic of the commercialised and codified model of design thinking, claiming it is used predominantly by non-designers for non-designers. Jen is highly critical of the commodified versions and discusses these model as:

"non-designers codifying a design processes into a prescriptive, step-by-step approach to creative problem solving, that they falsely claim that it can be delivered by anyone to any problem" (Jen, 2017, min 4:14).

Ramirez, Vinsel and Jen all highlight the tensions in the different uses of design thinking, especially when Design Thinking is asked to prove, through tangible results like, artefacts or data, how and why the methodology is successful (Ramírez, 2018, p.3; Nussbaum, 2011). Parson's School of Design academic and editor of Business Week, Bruce Nussbaum, discusses design thinking (the codified workshop model) as being flawed. However, he believes design thinking, as a development of Buchanan and Cross' work, has had major impacts on the work of design by enabling the discipline to move away from aesthetics and outputs by opening it up to the wide variety of challenges facing humanity that have social implications (Nussbaum, 2011). In contrast to Nussbaum's views, his Parson colleague, Associate Professor Fry, takes another view. The contrasts of ideology are discussed in Chapter Four. Nigel Cross noted in his 1982 book 'Designerly Ways of Knowing', that "knowledge about design is certainly not exclusive to design professionals" (Cross, 1982, p.20). It is apparent from the critiques offered that the use of design thinking has undergone significant changes from the model initiated by Papanek, Fuller, Buchanan, and Cross, over sixty years ago and further developed by Schon and Jones in recent years. Also apparent is the growing mistrust from within the discipline of design of this codified version.

Schon, like the 19th and early 20th century education and design reformists before him (namely Ruskin, Johannes Itten and John Dewey) espoused that doing and thinking in conjunction with each other are critical to the design process because they each set boundaries for each other (Schon, 2010). Schon described that the design framing process typically happens in four steps which are very similar to the five design thinking steps; empathise, define, ideate, prototype and test. The framing steps Schon references are shown in Figure 9:

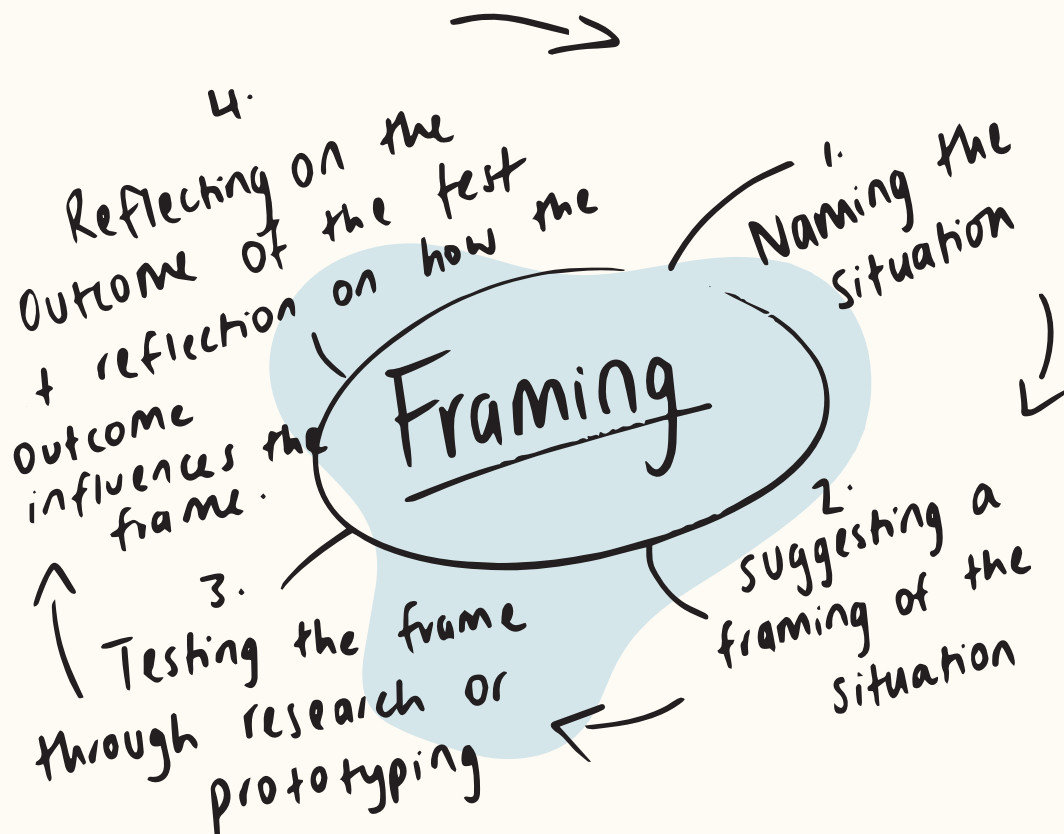


Figure 9: Framing Bubble Diagram by Megan MacKay, 2021.

Design has expanded, changed, and adapted over time. From its roots in artifacts to now, in which design plays a significant role in many disciplines including technological advancement and business. The way design and designers work has also changed. Hands on studios were the norm, but in 2020 that was changed forever. Remote working and global collaborations are the new norms. Designers continue to undertake the role of problem solver, but they are now tackling social and global issues using multiple online skills and tools as well as working in multiple time zones.

To enable design graduates to undertake design roles in large organisations (full of non-designers), this research asserts that there should be a more cohesive and public facing understanding of what ‘design thinking’ is and what designers can contribute to achieving this in the 21st century. The shift that has broadened design’s focuses on societal issues and wicked problems should be recognised. According to Norman and Meyer (2018) all design disciplines can confidently claim the ability to solve problems but are often reluctant to name it ‘design thinking’. One obstacle to this is the “lack of designers in high-level positions within organizations and government” (Meyer & Norman, 2018, p.14).

Well-known leader in the use of design thinking and chair of IDEO Tim Brown, recently noted the linear style of the process he and the IDEO team themselves have commodified and developed into a step-by-step process, “The approach, once used primarily in product design, is now infusing corporate culture, creating a commodification that critics and

design professionals are trying to minimize” (Kolko, 2015, p.1). There is no lack of researchers and critics happy to weigh in on the discussion. Professor of Social Innovation, Kees Dorst asserted, “confusion has now reached a crisis point, with eminent design researchers rallying against using the term ‘Design Thinking’ at all, vocally pronouncing its death” (Dorst, 2011, p.531,).

Creative Director, Lillian Esory, both teaches and practices design thinking and although a supporter of the practice she has in recent years spoken about design thinking as being abused by the creation of what she refers to as to many ‘under-baked’ courses and workshops. Esory described the use of design thinking as an on-trend approach that is being mass produced and copied by many people with little knowledge of what it really is and what potential it has. Aligning herself to Kolko’s view, Esory asserts that “Design Thinking is a methodology that sells innovation and mind-blowing discoveries, but the truth is that we are training designers and non-designers to be happy with half-ass work that uses a lot of time and money” (Esory, 2018). Esory believes our knowledge is limited to what we know at the point of a workshop or brainstorming session, and this can be restricting to the outcomes of a design problem (Esory, 2018). In Chapter Four, Principal Interview Three also discusses the impact of this believing that “the creative co-design client workshops are deliberately not branded as design thinking to ensure there is no backlash” (personal communication, February 19, 2021).

“Design Thinking has encouraged the democratization of design where a solo creative is often mixed in with employees and clients that have very little experience with design in a fast-paced and multi-tasking environment... we are creating environments that deteriorate a creative’s skills when we should be enhancing the practice of critical problem solving, combined with imagination and elegant execution through design, implementation and testing” (Esory, 2018).

Instead of a fast-paced workshop environment Esory believes a successful solution takes “time, deep flow and a dedicated team of creatives constantly pushing each other” (Esory, 2018). Interviewee Two, noted in Chapter Four also agrees that a slowing down of the process is needed. Interviewee Two currently teaches at the tertiary level in ‘Design Thinking within Sustainability’ and believes design thinking and critical thinking skills require a solid foundation learnt as a part of a design education that enable further growth throughout a designer’s years of practice, real life experience and on-going education. Esory also states this saying ‘testing, iteration and exploration are vital components to create a sense of meaning’ (Esory, 2018).

3.3 Everyone is a Designer - Really?

Design thinking is now being included within many different contexts. In academia it is being slowly unpacked in research. Supplementing this discussion are blogs and online forums written about design thinking by users, consultancies, creative agencies, and business alike. A lot of the time, these opinions are seeded in the commercial uses of design thinking. Social media discussions, advertisements and micro-credentials have contributed to a rise in the exposure of design thinking, and the use of it with many practitioners gaining online qualifications or doing short Design Thinking courses online believing that they now share designers' capabilities, skills and knowledge. Herbert Simon, author of "Sciences of the Artificial", says that everyone designs who "devises courses of action aimed at changing existing situations into preferred ones" (Simon, 1969). However, he notes that we need to educate people, so they appreciate the different ways design thinking is used, especially when addressing social challenges. Adding some more complexity to the debate, writer and designer Rachel Hawley also asserts that 'everyone is a designer'. Hawley recently wrote in the 'Real Life' magazine, "Design is not an art form, or a mindset, or a politics, or a trap door: it is a tool, and in order to use it effectively, you have to believe in something beyond it" (Hawley, 2021). This comment aligns with Herbert Simon who argues for design's power even among disciplines like business, law, education, medicine, that historically are not well-known for acknowledging the relevance of designers to their core operations (Simon, 1988). William Moggridge, co-founder of IDEO, also agrees that everyone designs, and could use design thinking. Moggridge suspects both designers and non-designers can benefit from using design thinking for innovation and hopes "that its use continues to expand and be more universally understood, so that eventually every leader knows how to use design and design thinking for innovation and better results" (Moggridge, 2010).

The word 'design' is currently encompassing other terms and titles such as user experience design, service design, media design, strategic design, design analysts and many, many more. The Oxford dictionary clarifies a designer as "a person who plans the look or workings of something prior to being made, preparing drawings or plans" (Oxford Dictionary, 2020). This definition can be closely related to the creation of artefacts, however, this is now changing. Due to the many changes and developments in technology, social and economic environments and recognition of wicked problems, the discipline of design is moving away from traditional modes of thinking and designing. Allan Chochinov, Chair of the School of Visual Arts and co-founder of Core 77 stated "design is no longer in the artefacts business. It's in the consequences business" (Chochinov, 2004, p.1). Interdisciplinarity is now considered a vital component of design practice especially when focusing on human needs but when we are constantly changing and applying it to other disciplines and organisations we are essentially re-shaping what a designer has been understood as in the

past and addressing a new kind of role. Researchers are stating “Design Thinking may seem like a god send for creatively solving issues in a new way, but as we apply this to many other professions and practices we are inevitably changing and re-shaping the role of a designer as we know it” (Szasz, 2015).

What do (Real) Designers Really Do or Really Need to Know?

“Strip the word ‘design’ away and then try to explain design otherwise. Everything becomes clearer. The alternative words do wonders. Many ‘graphic designers’ are either artists or corporate branding agents. Most ‘design thinkers’ are neoliberal business consultants” (@michham, 2021).

It is well established that a core concept of design is creating ‘experiences’ for human consumption. Some designers and researchers argue “the sector is now unrecognisable as a result of role re-definition, process reinvention, and ongoing evolution” (Furniss, 2016, p.14). Perhaps, the new role of a designer is the coalescence of diverse disciplines and knowledge and facilitating collaboration to enable human-centric approaches, thinking and solutions. Are designers now just the ‘glue’ in these scenarios? Cross states that, “Designers produce novel unexpected solutions, tolerate uncertainty, work with incomplete information, apply imagination and constructive forethought to practical problems, and use drawings and other modelling media as a means of problem solving (Cross, 1990, p.75). It is clear that Cross supports the argument that the role of a designer which was and remains a complex one. Kolko also highlights the downside to designers running and teaching Design Thinking workshops or seminars saying that in addition to unwrapping design thinking they are also charged with teaching it when they may have little experience teaching. They may be experts in the field of design thinking, but not in education (Kolko, 2017).

Lesley-Anne Noel points to nine factors in her work and as a part of these highlights how bias, positionality and race are now being discussed as a part of the design process. Noel suggests the need to factor in what we bring by way of lived experience to the table as designers, whether it be race, age, gender, beliefs, or power. Noel, in her manifesto, wishes to, “Create design education, research and practice that is anti-racist, and also plural, pluriversal and anti-hegemonic” (Noel, 2020). To equip students to effectively apply themselves to 21st century design issues, along with Noel this research asserts that open, awkward, and challenging discussions are required. As noted by the then Head of Design at Auckland University, Professor Deb Polson, in ‘Design Assembly Field Guide 2020: A multidisciplinary exploration of New Zealand’s post-COVID design practice’, “the world needs people who can effectively apply themselves to many industries and problems, and designers have the expertise to effectively lead these interdisciplinary teams...” (Polson &

Baron, 2020, p.146). Even 'plain old designers' are starting to feel the pressure educate other disciplines. The role of a designer is not only to design; increasingly it has become that of a facilitator, tour guide to the discipline, and promotional expert to expose clients to the benefits and value of various forms of design methodology. As Kolko suggests in his book 'How I Teach', "It's not enough to do great design work and unveil it to an audience. Instead, our role is to teach other stakeholders about what it is we do and why we do it" (Kolko, 2017).

Bryan Lawson and Dorst, assert in their book 'Design Expertise', "expertise consists of the characteristics, skills and knowledge that distinguishes experts from novices in any field. This expertise can consist of a range of learned skills and often demonstrates a range of personal attributes too" (Dorst & Lawson, p.82, 2009). It is evident that design thinking (whatever you believe it to be) is in hot demand in the 21st century. The general perception of it as having the capacity to contribute to the models of care or problem-solving that are required to address globally scaled concerns has also led to design thinking taking on a life of its own. This life is administered by designers but undertaken outside the discipline of design, "some of these (design) activities have been professionalised in the design disciplines in ways that could be valuable for other fields" (Dorst, 2011, p.525).

"The problem itself is situated in a world where rules and regulations, government policy, and economics can all influence the output, and we work with lots of people who help us negotiate these murky areas. We like to think of designers as being invisible, but in reality, we're often the most visible node in a complex network of decision makers working to create an end product. Seems a bit greedy to claim all of that for ourselves" (Peart, 2017).

Design theorist Ken Friedman is renowned for promoting the need for a shift in paradigm within design. In 'Design Education Today' (Friedman, 2019) Friedman discusses that as a result of the increase in both number and complexity of social, cultural and ecological issues and over the 21st century, reforms are required within design education. These shifts would need to enable future generation of designers with broader, more holistic skills that can better equip design and designers to contribute meaningfully to the positive solutions sought. Written in the 2021 book 'Design Struggles' by Nan O'Sullivan promotes, "The goal of our endeavours is to enable a new generation of designers with a nuanced appreciation and respect for the connectivity and that have the skills and courage to engage empathy, care, respect, reciprocity, and autonomy as strategies to design with" (O'Sullivan, 2021, p.252).

Norman argued that traditional design education now needs to re-look at and rebuild the disciplines' objectives, aims and skills to ensure its relevance but also ratify its inherent skills in tackling the complexities held in both the problems and solutions faced. Norman is widely critical of the universality of western design pedagogy. Norman argues that it has ignored or avoided many new technological, cognitive and analytic skills in favour of a more profitable model (Meyer & Norman, 2020). Professor Lucy Kimbell, and author of 'Re-Thinking Design Thinking', addresses what she considered some of the challenges design thinking faces and its shortfalls. Kimbell states one of the more significant issues being that the teaching of design thinking is not necessarily unified across all universities, organizations and institutions. Kimbell argues that the 'user-centred' approach to design, considered an important aspect within design thinking, is being overlooked by many curriculums (Kimbell, 2011).

“We teach students how to engage in user research, prototyping, conceptualization, business and technology analysis, but often the ability to attain information from these different processes and fuse it together to create a concept is left for the student to figure out.” (Moller, 2017, p. 1).

It becomes apparent quickly in this chapter that there is unrest between and inside factions of clients, users, facilitators, and designers around what design thinking is, should be, and shouldn't be. 'Design Thinking' deliverables that sit at the heart of this disagreement, are the Short Course, Workshop and Seminar classes. This brings the research full circle – as it was in a Short Course, facilitated by non-designers working in a large-scale profit driven organisation, that I first encountered professional understandings and uses of and for design thinking. This research identifies these as being a major contributor to the misinformation and misuse of what design thinking (as initiated by Cross and Buchanan and still affirmed in the practices of Norman, Friedman, Dorst, Kolko and Noel to name only a few of the vanguard) is considered to be, or what it needs to be, within the discipline.

3.4 Short courses, Workshops and Classes

Many designers and design theorists critique the Design Thinking micro-credential courses and workshops offered by non-design organisations and consider these offerings as a negative trend. The criticism focuses on these micro-credentials as been developed as 'good earners', not good learning opportunities and this sits uncomfortably within the discipline of design. The opinion is that courses do not align with the aims of design practice which strives to prioritise human and planet centric approaches and solutions to the complex social, cultural and ecological problems the discipline engages with. Author and practicing designer Joanna Hawley critiques how design thinking has morphed via the

popularized IDEO model into a magic bullet model and argues that if organisations invested the same amount of time and money it does to solving product innovation into serious issues, such as poverty, we would be in a much better space (Kimbell, 2011). Hawley stated, “by the time critics began pointing out that this approach simultaneously rarefied common sense and oversimplified actual design expertise, teaching people to think like designers it had already become a massive industry, flush with the cash of business schools and corporations” (Hawley, 2021). Hawley assures us that it is not too late to see changes in this space. This research aims to promote this change by adding to the discussion surrounding the uses of design thinking and enabling more cohesive and more visible appreciations for human-centred practices moving forward. As the interviews point to, in Chapter Four, the discussion is not one of what is right and wrong. A number of those interviewed noted that financial gains are a strategic goal to the facilitation of social and environmental work. A shared belief was that it is difficult to engage design thinking without considering what gains it holds for an organisation, and this included financial security.

Non-traditional design programs such as workshops and short courses are now very common. The damage comes in the oversimplification and codification of what many designers and theorists agree is complex work. Jack Roberts, Chief Executive of StoryLab and Narrative Design and Parsons faculty member notes that removing the complexity of understanding and homogenising design thinking removes the opportunity for more people to engage meaningfully with design. Roberts stated in Meg Miller, design writer and editors article, “The more design both broadens and specializes, it relies on diversity in terms of backgrounds, modes of thought, and skill, and this is for the better” (Miller, 2019).



Figure 10: Beetroot IT Company Design Thinking Illustrations.

Criticising the homogenous design thinking model are Beetroot IT Company. These illustrations portray design thinking as a more complex discipline than many short courses could suggest (Beetroot, 2018).

3.5 Design is an 'Attitude'

I first came across the term 'Design as an Attitude' when I read respected design critic and author Alice Rawsthorn's 2020 book 'Design as an Attitude'. Rawsthorn highlights her inspiration as drawn from Laszlo Moholy-Nagy, a Master at the Bauhaus School. Rawsthorn's book inspired by Moholy-Nagy's 'Vision and Notion' book, in which he stated, "design is not a profession, but an attitude" (Moholy-Nagy, 1974). Rawsthorn distinguishes the designer as 'expert' describing a designer as, someone who has resilience and an attitude for resourcefulness and understanding of relationships between society and their design. Design as an attitude has also been discussed by management scholars Richard Bolland and Fred Collopy. They also assert that the linear frameworks embraced as a universal model of design thinking, like the double diamond that is taught in commerce, are not enough to illustrate the complexity of designing or design in the 21st century (Shaping Chaos, 2021). Bolland and Collopy argue that a design attitude differs greatly from a decision attitude by not having "a default representation of the problem being faced". They assert that a design attitude instead "questions the way the problem is represented" (Bolland & Collopy, 2004, p.9).

Mariana Amatullo, Vice Provost for Global Executive Education and Online Strategic Initiatives at Parsons The New School, refers to this mindset as a 'liquid state', explaining that designers are more tolerant to ambiguity and able to feel comfortable in a malleable 'liquid state'. A liquid state means there is no answer straight away, instead the focus is on possible alternatives, just as Bolland and Collopy discuss. Amatullo also suggests that the complexity of design, still an ongoing discussion, now takes form in the speculative and futuristic design space as "there are ways to push being in the imagination space and creating the ability to imagine what does not yet exist" (Amatullo, 2018).

The interviews carried out and analysed in Chapter Four highlight that many of the graduating students hired as design consultants are selected on account of their ability to think critically and creatively. These are for the most part students who study design. Having a design attitude often enables a more open-minded approach to problem solving and according to Amatullo, this requires a specific set of cognitive skills that include:

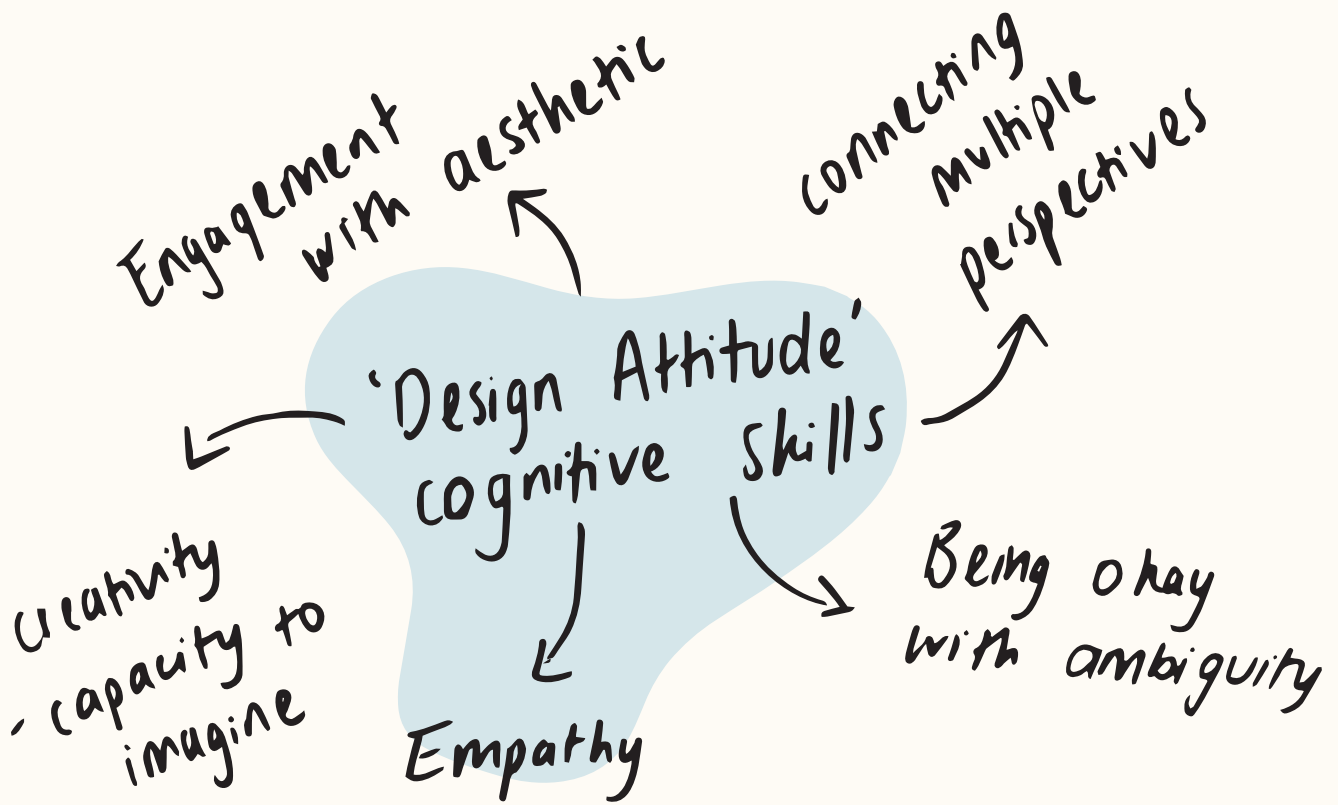


Figure 11: 'Design Attitude' Cognitive Skills Diagram by Megan MacKay

Many of these skills are considered components of design thinking, however, we still need to harness a curious attitude when using design thinking in practice. According to Professors Allison Butler and Michael Roberto, design thinking methods do not come naturally suggesting, "Design thinking is an unnatural act that challenges the human brain to work in ways that run counter to routine patterns of thinking" (Butler & Roberto, 2018, p.45). This aligns with Amatullo's argument that it is "hard to innovate when we have a mental model that frames our thinking and doesn't allow us to explore" (Amatullo, 2021). Butler and Roberto, whose expertise in cognition and management argue that design thinking requires you to consciously put assumptions, biases, and beliefs aside, which is a significant challenge for most people (Butler & Roberto, 2018). Their experience has led them to understand what they consider to be traps that highlight why some cannot engage with or appreciate design thinking. For example, "the framing of a problem can cause narrow solutions and prototyping can cause resistance to feedback" (Butler & Roberto, 2018). From observations conducted within this research, that included design tutorial and design thinking workshop observations, it was concluded that a lot of the reticence to engage in design comes from a level discomfort for thinking outside the box and sharing ideas (personal communication March 22nd, 2021).

At this stage of this investigation and highly influenced by the voices of Amatullo and Rawsthorn, a conclusion could be considered. This might be that the process of design thinking requires a design attitude and a willingness for cognitive growth. It is this that defines who the users and benefactors of design thinking can be, not so much the labels of

designers and non-designers. That discussion will be unwrapped in Chapter Five.

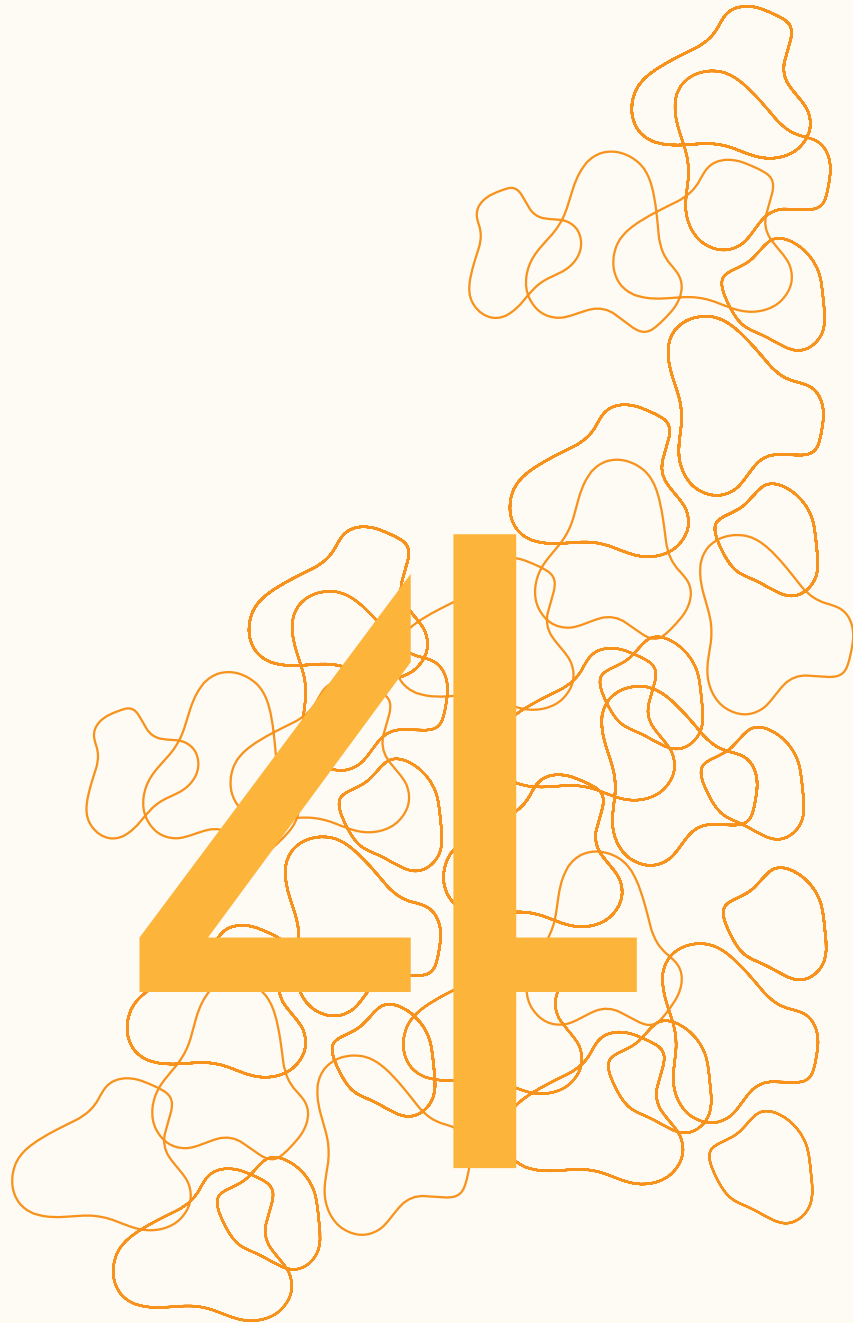
‘Managing as Designing’, written by Boland & Callopy discusses managers should act more as designers as well as being decision makers, “A design attitude fosters an acceptance of, and a comfort with a problem-solving process that remain liquid and open, celebrating new alternatives as it strives to develop a best design solution” (Boland & Callopy, 2004, p.10).

Rawsthorn believes design is an ‘Agent of Change’ that can help us uncover, shape and make sense of the world around us and as a result turn it into opportunity and advantage. (Rawsthorn, 2018). Rawsthorn shares the example of design as an attitude in comparison with the recent ocean clean-up project by an 18 year old student in the Netherlands, Boyan Slat. The system, which many scientists and designers were weary of any viable outcome, was designed to clean up ocean rubbish then distribute it on land and for responsible recycling. This brought the problem closer to home, allowing earth’s inhabitants to see how much damage has been caused. This project responded to the on-going environmental issue and is a good example of how design as an attitude could be seen as a way forward as we “urgently need designs power as an agent of change” (Rawsthorn, 2018). Designers are increasingly needing to prove themselves and the practice within these new terrains (Rawsthorn, 2018).

According to Rawsthorn, the pressing issues that designers, ‘could and should be tackling’ are famines in Africa, imbalances in wealth, prejudice, environmental issues, cyber-attacks, social injustice, and advancements in technology (Rawsthorn, 2018). If an issue, which it almost inherently always does, involves people, then Rawsthorn also promotes that empathetic and socially conscious design methods must be addressed and understood with care and distinction.



Figure 12: ‘Not Just For Designers’ card deck by Megan MacKay



Chapter Four

4.1 Design Thinking: Industry Interviews

Who are the Participants?

The industry interviewees were identified at the initial stages of this study and interviews conducted throughout the development of this thesis. Undertaking these interviews offered valuable insights into current discussions, uses and understandings of design thinking within a range of business tertiary design institutes and organizations. Quite striking was the lack of historic grounding for many of the interviewees currently using design thinking in their practice or actually facilitating design thinking for others. Their knowledge of the practice was gained from workshops, seminars, and micro-credentials offered by a variety of organisation whose reputations also vary. The only interviewee to have a comprehensive appreciation of the history of design thinking was Principal Interview Four, which was as a result of their PhD research in Design and Fine Arts.

Purposeful sampling was used to select participants for empathetic interviews (Patton, 2002). The key themes were recognized by using affinity mapping (a way to organize and gather qualitative data). After identifying the interviewees experiences, uses and interactions with design thinking they were placed in two interview groups; Principal Interview group, that had theoretical and academic insights in parallel with design experience and the Secondary Interview group that had undertaken tertiary design education and experience of the design industry. This required selecting individuals that were experienced or considered knowledgeable regarding design and design thinking. For this research, interviewees were also grouped according to a variety of professions. Using industry standards these included academia, service design, strategic design, design consultancy, change management, experience design and workshop facilitators (Cresswell; Plano Clark, 2011). Ethical approval was gained from The Human Ethics Committee (HEC) to carry out this research (Appendix D).



STRATEGIC DESIGNER

Industry Interviews

Principle Interview 1

Strategic Designer and Consultant.

Education: Bachelor of Architecture

“It was like I was being struck with lightning. Human-centred approaches are the way it should always be done with all things”
(personal communication, December 17, 2020).

Having had experience in both consultancy firms and not-for profit sectors, Principal Interview 1 reiterated the importance of ethnographic research during the foundational stages of the design thinking process. As a student, she had undertaken an architectural degree but was always aware of her passion for people and the potential impact of design on lives. Principal Interview 1 discovered human-centered design in later years having undertaken a mini-master class in design thinking but believes she learnt the bulk of her knowledge of design thinking by just doing it. Her practice was and is guided by many of the principles delivered as a part of D.School styled workshop, and this approach continues to impact her practice. After nearly 10 years of experience and facilitating workshops Principal Interview 1 discovered getting non-designers and designers to dive right in, getting out of their comfort zones as a part of the activities and experiences offered was the key to opening minds and growing mindsets.



SERVICE DESIGNER

Principal Interview 2

Service Designer.

Education: Bachelor of Visual
Communication Design

“I’m fascinated with exploring how design processes can be used in high level and government organizations to aid in solving complex social issues and engage our communities – especially our young people – in developing and actioning solutions towards real, meaningful change”
(Personal communication, 20 January 2021).

As a service designer in the New Zealand Justice department, Principal Interview 2 also identifying as she/her, shares her experiences of undertaking a tertiary design education and then moving into the government sector. The career experiences gained at the outset of her career gave her consulting experience, but also exposed her passion for engaging design for social good, and particularly for people and families in New Zealand. Principal Interview 2 currently uses design thinking to tackle a wide range of problems in the justice system here in Aotearoa. The wide range of skills needed in this area range from graphic design, spatial, environmental, service, User Experience (UX) and User Interface (UI) as well as using co-design approaches and an ability to coalesce outsourced business and people into a collaborative team. Principal Interview 2 brings a fresh and current perspective to the use of design thinking in the industry.



EXPERIENCE DESIGNER / RESEARCHER

Principal interview 3

Experience Designer and Design Researcher.
Education: Bachelor of Design Innovation,
majoring in Design for Social Innovation.

“I went from feeling like I was at the bottom of the heap, least regarded, not listened to, compared with now where designers are valued. I draw inspiration and pull things I need from design thinking but I’d never brand myself as a design thinker”
(personal communication, February 19, 2021).

A passionate experience designer with five years of industry knowledge shared her experiences after attending the Culture and Context program at Victoria University of Wellington, now known as Social Innovation Design. The critical thinking skills she learnt within the program allowed her to transition into her career. She began her career as a capsule designer in the tech industry with her design skills and human-centered approaches. Now, in a creative agency, she is surrounded by like-minded designers and believes a human focus has an important role within any design process as it focuses on how the users understand and use the product, service, or system.



SENIOR DESIGNER AND ACADEMIC

Principal Interview 4

Senior design and strategic thinking academic, strategy and curriculum consultant and PhD candidate.

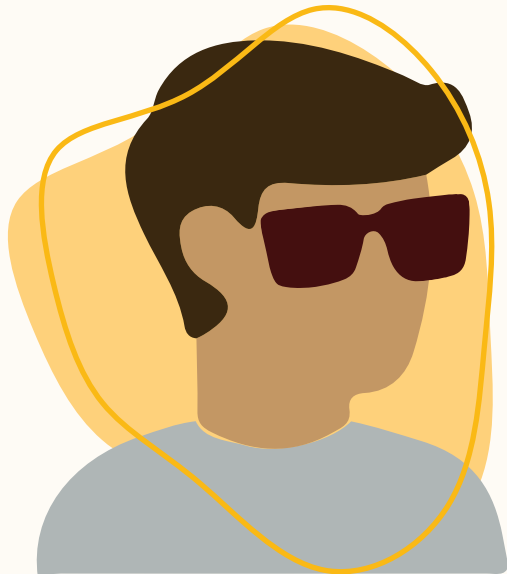
Education: Bachelor of Fine Arts, Masters of Fine Arts, PhD in progress.

“We’re not all design academics, which is not the be all and end all. But, we are easy to identify because we are enabled to discuss and research the work as opposed to industry where ‘just getting the work done and trying not to use the wrong terms is a priority”

(Personal communication, February 24, 2021).

An interview with a design academic, practitioner, educator, and consultant with over 25 years’ experience in the fields of design shared his experiences with design thinking. His wealth of knowledge, the principles and methodologies he uses and prioritises in his practice are testament to his commitment to teaching and researching in multiple disciplines; not just design. Principal Interview 4, (he/him), started off his career with a Bachelors and a Masters of Fine Arts gained from different Universities around the world. His first experiences were in a conventional tertiary teaching practice where he focused principally on graphic design, motion graphics, digital design, design history and design theory. Now, halfway through a PhD which redresses Design Thinking, he is narrowing down on particular facets of the practice and the generative stages of the design thinking process.

Principle Interview 5



**MAORI DESIGN LECTURER
AND FASHION DESIGNER**

Maori Design Lecturer, Academic and Fashion Designer.

Education: Bachelor of Fashion Design, postgrad research, Masters of Creative Technologies and recently PhD in Fashion.

(personal communication, June 22, 2021).

“I believe centering a Te Ao Maori worldview in any design thinking would be a preferred situation, applying the agency will require a For Māori-By-Māori approach where appropriate protocols are taken to understand the worldview in practice. I think, de-conditioning the idea where design thinking isn’t leading initiatives, it is Te Ao Māori that leads this, and design thinking plays a role alongside a Māori worldview. This would suit better, and it almost resonates a treaty partnership of Māori Ideas and Non-Māori Ideas”

Principle interview 5 has extensive knowledge in the field of fashion, design and Māoritanga. His experiences as an educator ensures students are given the correct tools to understand the role they play in society ensuring they can place themselves within complex world issues. This conversation unwrapped the importance of how and when Kaupapa Māori principles should and could be used within design thinking.

Secondary Interviews

The interviewees in this group speak more holistically about the practice and their experiences. These qualitative commentaries are highly valued in this research, and in human centered approaches.

Secondary Interviewee 1

Facilitator, Consultant.

Education: Bachelor of Law

(Personal communication, February 17, 2021)



CHANGE CONSULTANT/ FACILITATOR

“The real challenge comes after the executive gives the green light for their organisation to start using Design Thinking. Currently the use of design thinking requires permission, and if not given, or due to budget or staffing shortfalls or restraints, it does not proceed. You need an innovation pipeline, where problems within an organisation are validated and prioritised, solutions are designed, tested, and created and the impacts measured. This requires teams and money”

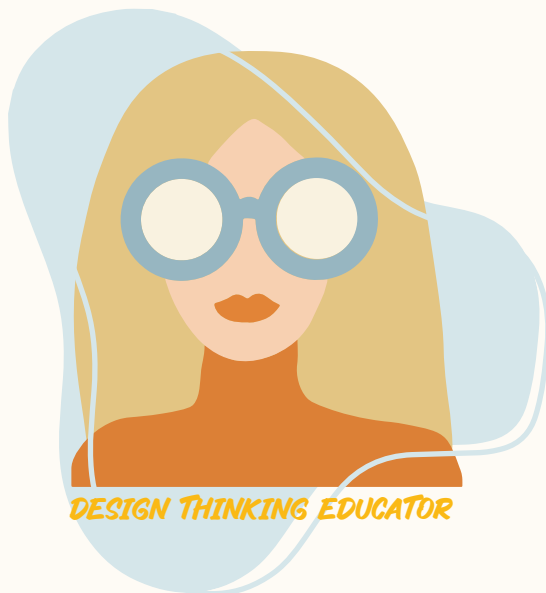
This participant (she/her) first learnt of design thinking from a Design Thinking Workshop that ran over a period of three days. Her view is from a non-design background and her industry experience is in consulting as a part of a creative agency. Of interest to this research, Secondary Interviewee 1 is now facilitating Design Thinking Workshops herself. Her viewpoint is that you don’t need a design background to become an expert in design thinking. She has gained valuable experiences through consulting and helping clients manage change.

Secondary Interviewee 2

Educator.

Education: Bachelor of Design Innovation, majoring in Design for Social Innovation

(Personal communication, March 3, 2021).



DESIGN THINKING EDUCATOR

“I believe critical thinking is learned by connecting education and lived experience, mine and others, and trying to understand or rationalize these in the different design projects we undertake as students”

Having completed a Bachelor of Design innovation in Design for Social Innovation Secondary Interviewee 2 is currently a teaching assistant in an undergraduate pan – university course offered by the design faculty in Design Thinking for Sustainability. Secondary Interviewee 2 as a graduate provides an important perspective having graduated from a design institute and worked with a Not-for-Profit consultancy as well as some industry experience.



Secondary Interviewees 3

Not for Profit CEO that also mentors students as a part of the organisation's commitments to its community.

Education: Bachelor of Law
(personal communication March 22nd, 2021).

“Design thinking enables our Not for Profit organization to meet the diverse needs of our clients, while allowing our student consultants to utilize and unlock their innovation and creativity”

Interviewee 3 (she/her) is one half of a Co-CEO role for a Not for Profit student led consultancy in Wellington. Her experiences discuss how design thinking can prepare and inform students to participate in social impact projects in their communities. With the support of outsourced consultancies, the organisation runs an introductory intensive Design Thinking Workshop, in which the students gain a limited and very basic appreciation of design thinking skills, collaboration techniques and of course no design thinking course is complete without the double diamond. It is such organisations, attempting to do such good work in the community that this research seeks to encourage towards a re-think of design thinking and the methods taught.

Secondary Interviewee 4



Illustrator/Design Researcher/ Educator

Education: Bachelor of Design: Graphic Design Auckland University of Technology.

(Personal communication, April 22, 2021)

“My experience at design school was eye-opening. I came to understand how important the lived experience is for design thinking and research. Understanding human beings and how we behave/think/operate as individuals and collective groups is fascinating. It’s at the heart of good design”

Secondary Interviewee 4, (She/Her) shared realistic advice about what attributes are needed to produce effective design thinkers in today’s design industry and the importance of critical thinking and curiosity. Her experience as an educator, graphic designer and as a digital illustrator cast a light on how COVID-19 affected the way we work and design, creating opportunities for a different way of thinking and working with and about design.

Synthesis of Interview Insights

Summarizing some of the points gleaned from the interviews conducted as a part of this research, the current uses of design thinking within corporate and organizational environments shift from workshop models that highlight design thinking as a ‘mindset’ to team sessions that introduce and demonstrate design thinking as a tool and a methodology. To clarify what similarities and differences exist between the approaches used to discuss and implement design thinking, a variety of designers and social impact practitioners were interviewed. Several benefits that design thinking brings larger organizations were identified by the interviewees as being:

- To understand your user on a deep level, and to connect and empathise with them. (Note the word ‘empathise’ was the interviewees terminology).
- The use of design thinking to enable innovative ideas and planning strategies.
- Design thinking as a tool for collaboration between workplace teams and clients.
- To understand and break down complex issues and problems.
- To help clients understand the design process.

- To encourage creativity and ideas.
- To help teams communicate and share ideas.
- To teach the basic processes of design to non-designers.

Undertaking an online search of design thinking workshop offerings, the main benefits offered to you if you acquired this knowledge were similar to the aims and experiences of the interviewees. There was also a main focus on efficiency, organizational growth and profit which means that design thinking is not always aligned with what is understood as a part of a design mindset and method. The benefits noted in the workshop offerings were listed as:

- Design thinking to help drive profit and sales.
- Design thinking to drive business growth.
- Selling innovation and toolkits for innovation.
- Requirements for business success.
- Professionals reaching new audiences.
- Targeting CEOs and business leaders.

The benefits of design thinking noted by interviewees with experience in the educational space were:

- A helpful tool for collaboration.
- One of many methodologies used in design, but should be used with others.
- Critical thinking skills.
- A framework to loosely guide you.
- An explanation of why certain parts of a project might be confusing or challenging – and how to unpack them.
- A tool for communication among diverse and multidisciplinary teams.

The use of design thinking in the corporate sector has grown exponentially in recent years with many businesses placing importance on strategic and critical thinking processes to solve a variety of complex issues and problems. According to Principal Interview 1, “Great things are happening within the corporate sector with design thinking” (Personal communication, December 17, 2020).

Designers note feeling protective over who can claim the title ‘Designer’, as many without the skillsets or knowledge understood to define a designer, that are usually gained through design education and experiences, use the term. Principal Interview 1, a strategic designer is less protective and suggests “if we really want the world to change we can’t claim that knowledge for ourselves in design and protect it” (Personal communication,

December 17, 2020). She suggests that design should be more democratic and engage more collaboratively and inclusively around innovation and creative abilities.

The interviews also highlighted that in New Zealand there is an urgent need for organisations and design practitioners to better address their responsibilities to the Treaty of Waitangi. Acting as partners to the Treaty is critical to undertaking culturally responsible work in, and by, the design industry. According to Principal Interview 3 an appreciation of te ao Māori (the worldview of Māori), tikanga Māori (Māori values) and mātauranga Māori (Māori knowledge) is emerging as a critical consideration within (but not limited to) strategic design, systems design, service design, UX design and social design. As an experienced designer Principle Interview 3, does not specifically address design thinking in her work or client workshops. She believes that design thinking having been formed from a Euro-centric model is not an appropriate model to be used in New Zealand, as it is first and foremost a bi-cultural nation and secondly a multicultural society. The Euro-centricity of design thinking and its universal model makes it, in her opinion not an appropriate framework to draw from in a country that needs a process that is tailored to including indigenous knowledge. “We must respect and embed our indigenous roots and our Māori tanga” (Personal communication, December 17, 2020) . An example of an organization drawing on, supporting, and encouraging a New Zealand tailored approach is IDIA (Indigenous Design and Innovation Aotearoa). IDIA say, “we use an indigenous worldview to create solutions for a variety of clients facing commercial, social, or environmental issues and challenges” (IDIA, 2021).

Principal Interview 4, was clear throughout the interview that, “one of the biggest tasks that faces the design thinking process is to be asking the right questions and to be framing the questions properly” (personal communication, 24 February 2021). Framing can be defined as an “activity that involves selectively viewing the design situation in a particular way (‘seeing as...’) for a period or phase of activity” (Lawson & Dorst, 2009, p.50). This is supported by Moller who argues that framing helps designers recognize new perspectives, changes to contexts and clear shifts in direction. Moller stated, “framing is a natural part of the designer’s ‘reflection-in-action’ and ‘reflection on-action’ and a key characteristic of the design process” (Moller, 2017). Principal Interview 4 stated that “Often, institutes, academies or universities don’t spend as much time on framing in projects or teaching framing in courses because as a discipline design is traditionally too focused and/or eager to solve the problem and produce the output” (Personal communication, 24 February 2021).

Principal Interview 4 was unimpressed with some organisations mis-use of design thinking and designers, which was reflected on an incident in his design course. He stated “We did a design project with a large organisation in our studio course. We didn’t charge them as it

was a learning experience for all. At the end of the day-long session, the executives excused themselves, saying they could do it themselves. They said they could follow our process, buy some books and teach it to themselves – maybe that’s New Yorkers for you – maybe it’s more common than that” (personal communication, 24 February 2021). This example raises a number of concerns. The first is the sharing of high quality discipline knowledge with participants about design thinking only to have it poorly replicated. Principal Interview 3 described the micro-credential courses offered widely to businesses as having “various degrees of bullshit in them” (personal communication, February 19, 2021).

Beyond the comments offered by the interviewees are the broader global conversations that are also highly critical of the lack of regulation or criteria around the use of design thinking by non-designers or those with skewed priorities that differentiate it from the aims and objectives designers believe the discipline of design thinking brings to their work. This conversation leads directly to considerations of power, positionality and designer’s control of design’s knowledge. Hawley suggests “input and feedback are only so meaningful when control over the actual decision-making — which could and should be placed in the hands of the community — is still wielded by the (so-called) designers, whose field of possibility is shaped by the interests of the powerful companies and organizations that fund their work” (Hawley, 2021).

As Principal Interview 3 highlighted, aligning with Boland and Callopy’s quote, “Designers relish the lack of predetermined outcomes” (Boland & Callopy, 2004, p.9; personal communication March 22nd, 2021). This research has sought to guide a distinction between the corporate and educational use of design thinking and enabled a clearer understanding that as a powerful tool for change, design thinking needs to regain its mantle. Hobcraft suggests “It (design) needs to break free of the magic ‘black box’ and evolve into its promise of being increasingly important to use, open and transparent in what it can achieve, and its limitations. It is to balance this out and point to the need to be integrated with other skills, capabilities, and methodologies that tackle real, often complex problems within organizations” (Hobcraft, 2017). A view who agrees with this, is design educator and Interviewee 5, who helps students to unwrap who they are to ensure their own capabilities and strengths are known before tackling complex world problems which can often feel daunting. He ensures there are “small steps, closer to home” that can make big impacts and “It’s really understanding who they are and where they come from because this is where their design tools to come in to tackle complex issues” (personal communication, June 22, 2021).

These examples uncover what this research argues is a need for more surety around the opportunities and values held in design thinking for the design discipline and its

clients. They also highlight how design thinking is employed and deployed and the need to establish clear distinctions between design thinking and 'other non-design - design thinking models' that contain diametrically opposing or highly diminished versions of the aims and objectives of design thinking. Many designers agree that design thinking cannot be replicated by someone after attending one workshop or even a week's worth of them. A repeated response from interviewees and the current discourse uncovered as a part of this research is that design thinking has been badly impacted by the increased use of it by non-designers and is now described as a danger because of the "proliferation of introductory (and relatively shallow) workshops, seminars, and courses on design thinking which trivializes the process and the required skillsets that are involved, leading to much confusion and inappropriate usage"(Meyer & Norman, 2020). It was my hunch that this was the case that first motivated this investigation and on the one hand I am glad my hunch has been confirmed – but on the other hand - saddened.

Long after the interviews for this research were conducted, there were uncanny similarities to the comments made by the interviewees of this research and those noted in the 'Design Thinking' book by Plattner, Meinel and Leifer (2011). Just as this research also concluded, "the interviewees did not convey a common understanding of design thinking. They specified differing process models and named differing methods as crucial elements of the design process" (Plattner et al., 2011, p.82). Similarly, this research could not conclude one common understanding, but some reoccurring themes such as communication, teamwork, and multidisciplinary teams did pop up. The interviewees in this research project each spoke of design thinking spanning micro-credential courses, workshops and different sources and influences like Harvard's D.School and IDEO; all learning about design thinking differently, signaling a lack of consistency in the industry. A major commonality from both the Plattner et al study and this research was the need to frame and re-assess the importance of the problem the designer or non-designer is trying to solve and that teams need to re-consider what the initial design challenges are. Another commonality was the need for diverse teams. As stated by Plattner et al, "Obviously there is no common set of beliefs (yet) associated with design thinking. Rather, there are differing lines of debate as well as differing practices" (Plattner et al., 2011, p.83). It appears not much has changed in this space, as my interviews conclude very similar information. Papanek would likely agree, somewhat demoralized I imagine, as he wrote more than 40 years ago "there is very little in the way of critical thinking about things like privilege, power, or politics" (Kreis et al., 2018, p.201). My reflection delves more deeply into the impact of privilege, power, or politics and also the inspired responses of Principal interviewee 3 that speak to bi-culturalism in New Zealand and its impact on design and design thinking (and hopefully designers).

“What design is, largely, is white and male – overwhelmingly so – and it continues to pursue us to this day. The power dynamics are structurally unequal and extremely skewed” (Kreis et al., 2018, p.201).

4.2 Covid-19 – our most recent wicked problem

“Design is such a ubiquitous force, rooted in every aspect of our lives. As soon as the pandemic hit, my instinct was to investigate it through design, and as tragic as the pandemic has been, it also became an extraordinary platform for design, and made clear how resourceful, courageous, gutsy, public-spirited, and empathetic designers could be” (Rawsthorn, 2020).

Paul Hobcraft is an innovation advocate. He sees a shift happening in 21st century design. Hobcraft sees design as no longer about single products for customers but as now facing new challenges and a need “to create better systems adapted to a world of connected citizens, unpredictability and digital disruption” (Hobcraft, 2017). The interconnectivity of te ao Māori comes to mind. Hobcraft questions the term of ‘design thinking’ as it is becoming a competitive and loaded word and he believes it will take quite some time before design thinking’s position from past, present, and future is truly understood and uncovered. The re-defining of the term could help the area move forward (Hobcraft, 2017). Particularly within the past 10 years the term ‘wicked problem’ has become a term designers are increasingly familiar with. According to Rittel and Webber, wicked problems don’t have one single answer, they are complex and have many causes which is why we often see environmental issues, healthcare, education, hunger and poverty deemed as ‘wicked’ (Harvard Business Review, 2020; Rowe, 1987). Conventional and traditional problem solving approaches to these issues are becoming less favourable as the extent of these issues are uncovered, which is why the creative field of design can enable new ideas, ways of thinking and creative solutions to aid these wicked problems. Jennifer Riel, professor and employee at IDEO, describes wicked problems as “deeply ambiguous” (Martin, 2009, p. 94). Designers and scholars such as Richard Buchanan have used design thinking approaches and framing since 1992 for issues deemed as, but not yet defined or described, as wicked problems. These ideas were drawn from Rittel and considered a design theorist’s way of addressing large complex social issues that did not have a clear linear process and easy solutions (Stony Brook University, 2020).

Wicked problems are a challenge to all of mankind, not just designers. However, because organizations are now looking to new ways of solving complex issues, they are adopting methods, tools and frameworks like design thinking from design (Dorst, 2019). Design is no longer just about just creating artefacts or products, it is about harbouring a designer’s

relationship with societies and cultures, understanding that design is malleable and collaborative. The shift that the 21st century is facing in design “...should not be read as a linear story in which a single new design paradigm has replaced the old - many forms of design co-exist today. Design is branching out, each challenge leading to a new limb on the tree of design disciplines” (Dorst, 2019, p.118).

4.3 New Zealand, leading the way

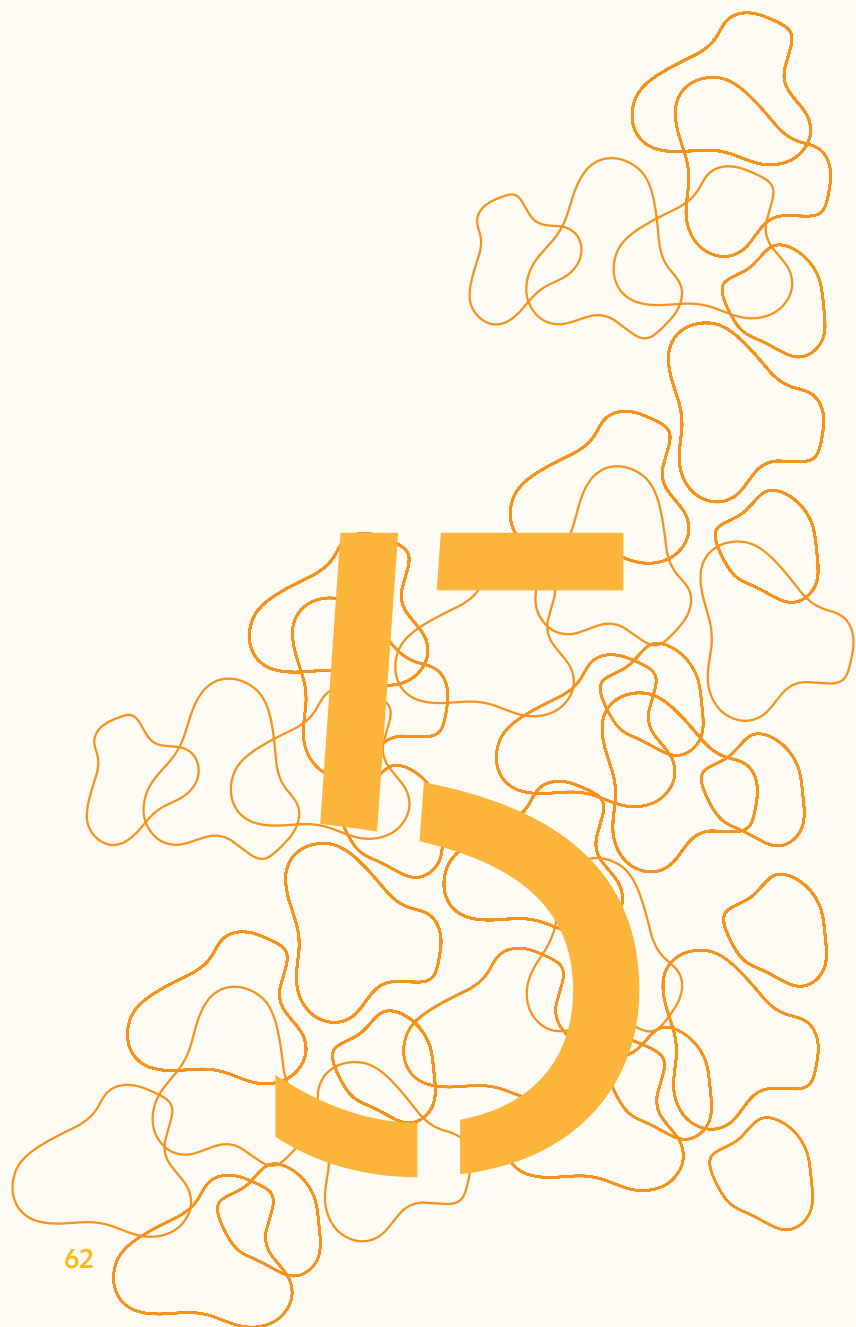
As a result of COVID-19, and in an attempt to disseminate clear and concise and correct information New Zealand designers have been called upon by the Government. The success of the ‘Unite Against COVID-19’ campaign designed by Clemenger BBDO has been acknowledged globally (Clemenger BBDO, 2020). There have also been demands on design thinking over the past year to consider, sped up by the global impact of the pandemic amplifying the call for a re-consideration. Perhaps reframing of how design thinking is defined and used across public and private entities and what role design education needs to play in future proofing the integrity, capabilities and capacity of design thinking to impact complex problems.

In 1985 The New York Times reported “Designers call themselves the invisible industry. Many companies either don’t use designers or use them in frivolous ways. Designers tend to agree that most products on the market are ghastly or adorned with meaningless decoration and could use their helping hand” (The New York Times, 1985). Now with the help of academics and designers like Allan Chochinov, Professor Mariana Amatullo, Paola Antonelli, and Alice Rawsthorn, both designers and users of design are realizing the more socially impactful contributions design can have. Institutions such as the World Design Organization and leading design faculties, such as Parson’s School of Design and the Transition Design Institute at Carnegie Mellon, led by Professor Terry Irwin and here in New Zealand at Victoria University of Wellington School of Design Innovation are leading the way in helping design embrace their roles and responsibilities in addressing wicked problems. As Charles Eames famously said, “Beyond the age of information comes the age of choices” (Rawsthorn, 2018, p. 97). This research asserts design and designers need to choose more wisely and redefine itself and themselves to reflect this.

The global pandemic, COVID-19, continues to impact the world and how humanity works and lives (World Health Organization, 2020). Researchers and designers are now promoting the use of design thinking and how it can be beneficial to the mitigation of world crises and emergencies like COVID-19, that threaten humanity (Cankurtaran & Beverland, 2020). Design thinking, already a prolific tool used by corporations to promote new ways of thinking and doing is now, this research suggests, a likely tool in enabling answers to

more complex and globally scaled issues. This research also suggests that comments like “innovation is now recognized as the single most important ingredient in any modern economy” (Kelley, 2005) made by Tom Kelley, partner of IDEO, do not serve the shift in practice sought. The comment continues to align design to economics – not social, environmental, cultural or political issues. Rawsthorn discusses design as “design is not a panacea to any of these issues, but by working in an intelligent, thoughtful and responsible way, with relevant specialists from other fields, designers could make a major impact in trying to rebuild our lives for the better” (Rawsthorn, 2020).

We hold great responsibilities as designers as we are able to influence situations and make changes regarding social innovation. This research has highlighted the popularity of design thinking in education and business. In Aotearoa we are seeing a rise of design thinking used among government agencies who deal with our people, cultures and societies. This research highlights the concern of popularized methods such as design thinking and in Aotearoa, as designers we need to ensure its used with respect and reciprocity. To design with, not for is one step that speaks to this, and one I will carry throughout my career as a human-centered designer. This research began with a euro-centric lens of design thinking, as this is what I personally experienced. It is paramount to understand design thinking in a global context because this is where the major euro-centric models and frameworks have been influenced from, it is only once this is done, that we can help decipher what Aotearoa needs, and break away from the commodified models that have little relevance for our people, or as stated earlier, their people.



Chapter Five

5.1 Experiencing Other Examples of Design Thinking to Enrich my Knowledge of its Use

Highlighted as a part of the transitions called for within the discipline of design and its now 'trademarked' thinking is that 'design thinking' is stuck between two models. Their greatest polarity, this research asserts, is at one end an outmoded model that props up capitalist and corporate structures, and at the other end a group of emergent models and provocations. This, led by the design profession and many of its new interdisciplinary partners that consider how design and designers can contribute, facilitate and lead action. This will enable a move towards positive, inclusive, sustaining, and sustainable futures in which individuals and collectives can thrive. Giving me some much-needed confidence to undertake this research was Alan Chochinov. Chochinov is a renowned design critic, founder of Core 77 and Chair of the School of Visual Arts MFA, Products of Design and has stated on numerous occasions and global platforms, that, "Design is no longer in the business of artefacts. It is in the business of consequences" (Chochinov, 2011). His 2007 'Manifesto of a 1000 Words' is predicated on this and if not technically a component of the design thinking process – his words certainly offer thinking about how, what, where and why we undertake and share design (Chochinov, 2007).

As we look and hope towards a horizon of a post-COVID existence there is now an immediate need to reconsider what design thinking is and what it is actually used to achieve. The design thinking space and its offerings needs, this research argues, analysing and recalibrating. Not surprisingly Harvard Business School are offering 'Design Thinking' courses called 'What's next? Design Thinking for a Post COVID World'. This reflection questions, has Harvard seen an immediate market opportunity? Or perhaps they seek to ensure design thinking plays an important role in the solutions required to the complex issues and inequities the pandemic has exposed. Sadly, my research to date and presented throughout this thesis leads me to assume the former. There are organisations that consider design thinking as a tool for positive social, cultural, environment and economic change, and my experiences with this organisation have impacted my outlook and hope for the future of design thinking.

Engaging In the Use of Design Thinking Globally

About half way through this research I was invited to apply to the World Design Organisation (WDO) to be considered for inclusion in the Young Designers Circle. The School of Design Innovation is a member of the WDO led by my supervisor Nan O'Sullivan. I was elected and

joined seventeen other young designers from around the globe 'at the table'. As a member of the WDO's Young Designers Circle, I was able to experience being a member of a global team and to re-consider how design and its thinking, tools, skills and knowledge might be used to discover, among one of the wicked problems, what diversity might look like for woman in design across the design industry. As an initial step, the team designed an online survey to be sent out to all the countries that the team represented. The experience of a global team brought challenges of its own. Time zones and language posed a few challenges, but this experience has taught me the power of collaboration and wider appreciation of design thinking in a collaborative and inclusive context. Contributing to my ability to engage in the global team was another opportunity offered to me during my studies to join a course at Parsons, The New School in New York to discover how to communicate, manage, contribute and enable others to contribute to creative projects across global contexts. Both this and the WDO experience enabled this reflection to be undertaken with a practice based, but a new, broader, more holistic, and future focused lens.

"The illiterate of the 21st century will not be those who cannot read and write, but those who cannot learn, unlearn and re-learn" (Toffler, n.d).

Engaging In the Design Thinking Education in the United States Parsons, The New School, An Online Experience

Parsons, The New School in New York is ranked third on the renowned QS World Ranking scale globally, and number one in the United States. The opportunity to partake as a student through an independent study at Victoria University of Wellington in the 'Managing Creative Projects and Dispersed Teams' 2020 fall class, run online by Professor Aaron Fry, proved to be very insightful and meshed well alongside this research. The course considered practical applications of design thinking to create and maintain successful projects with global client and teams. Design thinking has the ability to "facilitate an environment in which teams and clients can have different, sometimes difficult conversations which can be a challenge but can equip teams with methods and mindsets to overcome and combat these challenges" (The New School Parsons, 2021). This experience served me well in conjunction with the WDO team I was involved with. The time spent in this online class with a global collective, across eight weeks, gave valuable first-hand experience into online collaboration and design thinking in education. It was also very informative to this research by enabling me to see and hear how another university is approaching the challenge of teaching design thinking.

My Observations:

- Clear expectations of zoom etiquette, ensuring cameras were always on, creating strong engagement and encouraging more authentic engagement and conversation.
- Diversity of people and professions with different cultures and backgrounds enriched the process and the outcomes.
- Clarity of expectations and concerns created a safe place to share experiences and opinions.
- The environment and learnings encouraged us all to embrace the unknown and always be curious.
- The interest in New Zealand as 'literally being on the other side of the globe' and very small yet very visible in the discipline of design built my confidence to contribute to the collaborations.

Tools used during the online class:

Zoom, Slack, Teams, Google docs, Whatsapp, Mural, Miro, many of which I used for the first time as a part of this class.

A key learning: The power of non-verbal communication

"All we are is the sum total of our influence on others" (Navarrow, 2020).

According to Joe Navarrow, who is a leading expert on body language, discusses how we are constantly making choices based on our cultures, peer pressure and personal preferences (Navarrow, 2020). Navarrow states that this posturing is more powerful than words.

Online communications limit non-verbal signs and cues so participants have a reciprocal responsibility to both remain focused and present a compassionate composure when listening but to also consider how and when we speak. These skills are also needed in human centred design. Reflecting on this, I would suggest moving forward, the development of new understandings of how we demonstrate non-verbal communication and the difference between face-to-face and online discussions will play a role in how we undertake design thinking as a process, as well as the workshops that are offered.

Reflection after the course:

- A variety of design tools and methodologies should be used in conjunction with design thinking principle and practices.
- Design thinking can help facilitate and enhance collaborations and discussions between groups with differences and challenges.
- Design thinking alone will not fix all problems.
- Understanding where design thinking comes from, who uses it and major influences on the practices is important for its effective use.
- Designers appreciate that there may not be an immediate answer and this is a valuable skill in enabling ongoing momentum towards change.
- Communication is vital to a well resolved project particularly when it is solely online. Listening is a powerful and effective tool in collaboration.

Balancing one's emotions and actions is not always taught in design education, yet their balance is vital to the creative process. To demonstrate this, the Meta Skills test by Marty Neumeier was presented as a discussion topic within this class and a recommendation would be to take the test yourself and find out what your personal creative style is.

Parsons Associate Professor and Vice Provost for Global Executive Education and Online Strategic Initiatives Mariana Amatullo, discusses in her 'Shaping Chaos' podcast series about 'navigating complexity'. Fueled by the massive changes that COVID-19 sprung on the institution, Amatullo explains that "as an educator, you open yourself up to be in vulnerable situations, you have to make a lot of sensemaking and deal with uncertainty" and COVID-19 unleashed many complexities and decisions that had to be made promptly to move online and change the way courses are taught and delivered (Shaping Chaos, 2021). As designers we may not be able to look to known tools and methods to approach this level of uncertainty, with something as rapid as COVID-19, as it cannot be prepared for, making the status quo ineffective. There is a need for "ingenuity, creativity and resilience" (Shaping Chaos, 2021). Amatullo explains part of the key shifts she implemented was going away from the well-known ideals of a 'hero designer' or 'western design' models of individualism or modernist views, positioning and enabling designers to act as mediators, leaders, facilitators of design and design thinking while co-working and designing with and alongside other colleagues from non-design backgrounds too (Amatullo, 2021).

5.2 Summary

It is clear that design as a discipline and design practitioners in the 21st century find themselves as part of interdisciplinary teams and being asked to address many complex issues that affect society, culture and the environments inhabited by both humans and non-humans. In response to the issues design and its practitioners are engaging in, its pedagogy is also under scrutiny. Meyer and Norman suggest that although design and designers are both proven assets to problem solving, it would be beneficial if design education was taught with a more common and aspirational set of principles that can be built upon, and advanced beyond pedagogy and within practice (Meyer & Norman, 2018). Clare Swallow, founder of a design thinking led consultancy Mulberry St, believes it is not organizational innovation teams that will help businesses succeed through the challenges they face; it is teaching and preparing employees to engage design thinking through human-centred frameworks that ensure there is an entire culture change and re-framing of problems to prioritise people and place (SunLive, 2021).

These words sparked an epiphany for me that enabled me the clarity to see what New Zealand, as a bi-cultural nation can contribute to this shift and the recalibration or definition of design thinking more in line with what Principle Interviewee 5 so eloquently introduced to this research; te ao Maori (Maori worldview), mātauranga Maori (maori knowledge). I will reflect more deeply on that later in this chapter.

On a more pragmatic note, writer and educator Katherine Burd from the University of Pennsylvania, along with a number of the principle and secondary interviewees that contributed to this study, noted that key changes needed to be made to minimize the harm to and confusion around design thinking. As an educator, Burd's concerns are for changes that could be made in order to allow for more cohesion and complexity in the teaching of design thinking as a design tool.

Positive Shifts Within Design, Already Recognised Female Voice in Design

Throughout this research it has become apparent that some of the issues have begun to be addressed. The first, obvious in the historic study was the lack of women's voices and opinions in the early developments of design thinking. According to ethical UX researcher and consultant Max Masure "The design field is still predominantly cisgender, white, and male. I can see events and school programs with topics like 'Designing for Happiness' while we are still leaving a lot of users out of critical services" (Masure, 2021).

The majority of notable moments in design thinking were attributed to men. More positively more females voices are being recognised in the design space now. It is apparent that men have been attributed with creating, shaping and sharing design thinking with business and education, however, as Laura Bolt, writer and design editor, states “The history of design has been written by both women and men, but there have been times when it was difficult to see where women have had a seat at the table” (Bolt, 2020).

Until the Bauhaus existed, German woman who wanted to gain skills or a career in design had to be taught it at home (Slessor, 2018). The Bauhaus founder, Walter Gropius (1883-1969) did state the school would ensure “no difference between the beautiful and the strong sex” however the beautiful sex’s studio selections were limited to; ceramics, weaving and toy making (Slessor, 2018). Until the 20th century, only very few women could work as professional designers (Gotthardt, 2017). By the 21st century women were becoming more influential in design and numbers are growing but issues surrounding prejudices, sexism, unfair gender pay and the struggle of balancing professional and personal responsibilities are still extant. The 2019 AIGA Design census reported that the design industry was comprised of about 50% woman but the number in leadership positions was slight (Design Research and Insights, 2019).

Jessica Walsh, an influential American graphic designer and illustrator recently created a non-profit group ‘Ladies, Wine & Design’. This is a platform based in New York to empower woman and non-binary creatives around the world as she noticed top down approaches were leading to fewer opportunities for women (Bolt, 2020). In 2018, ‘Ladies, Wine & Design’ came to Wellington New Zealand where discussions about business, design and life balances were held. According to Walsh, the technological advancements are creating an opening in the industry where more creatives can enter the design field. Social media and cheaper tools allow for a lower barrier to entry and the flexibility to work from home. According to Walsh these changes “have all helped to democratize who can become a designer or who can receive recognition and work” (Ladies, Wine & Design, 2020). This research recognizes other female leaders in this industry in the second half of the digital timeline.

5.3 Privilege, Power + Positionality

As design has expanded its skills to engage social, cultural and environmental issues and work in interdisciplinary teams, it has become clearer that the discipline’s responsibilities now include recognizing and understanding the impact of privilege and power. Privilege is understood as a special right or advantage. Designers are challenged to rethink the ways they position themselves when undertaking design to change existing solutions. According to George Aye, co-founder and director of innovation at Greater Good Studio,

“Most designers know not to outright regard themselves as ‘saviours’, but there’s still an unarticulated sense that innovation is being bestowed onto needy communities by the largesse of the designer (Aye, 2017).

Design thinking is often used by designers who are working ‘with’ Not for Profits organisations or marginalized groups of people. Identity architect John Johnston, who was impacted after doing design thinking led projects in Madagascar, suggests “Design thinking is a privileged way of thinking and just like other privileges, we must find a way to make it accessible to everyone. If everyone in the world were equipped with methods to solve the problems that are most important to them, I truly believe our world would begin to look very different” (Johnson, 2019). Amy Collier, an experienced educator and designer working in community-based organizations and universities, addresses design justice and complexity in education. Collier asserts that although perhaps not the case for all design thinking users, design thinking is most often facilitated by privileged white people. Collier argues that designers, “Impose post-it notes solutions on our community’s problems. Beyond obscuring or under-recognizing structural inequities at the heart of problems, and beyond not requiring problem-solving enthusiasts to see their own privilege, it may create new problematic power dynamics rather than helping address the liberatory needs of populations oppressed by structural inequities” (Collier, 2017).

Familiar to this research’s industry interviewees is the design thinking ‘How Might We’ (HMW) game, used as a tool to spark ideas and create new ways of answering problems. Tricia Wang, global tech ethnographer, alludes to the negative impacts a game like this can have on our designs. Wang says “I’ve seen HMW used to hide biases and assumptions. Worse, I’ve seen it exacerbate the lack of diversity on design teams and within corporations at large” (Wang, 2021). This game, using ‘we’ as the people using the game, therefore creating strategies and designs that benefit only the designers themselves.

“It (the ‘How Might We’ tool) allows designers to remain the bright center of their own universes and ignore real-world, real human experiences that deserve more than a flippant call-to-discussion. HMW has become weaponized not because it was a weapon to begin with, but because people have found ways to use it as a shortcut to feign interest in users” (Wang, 2021).

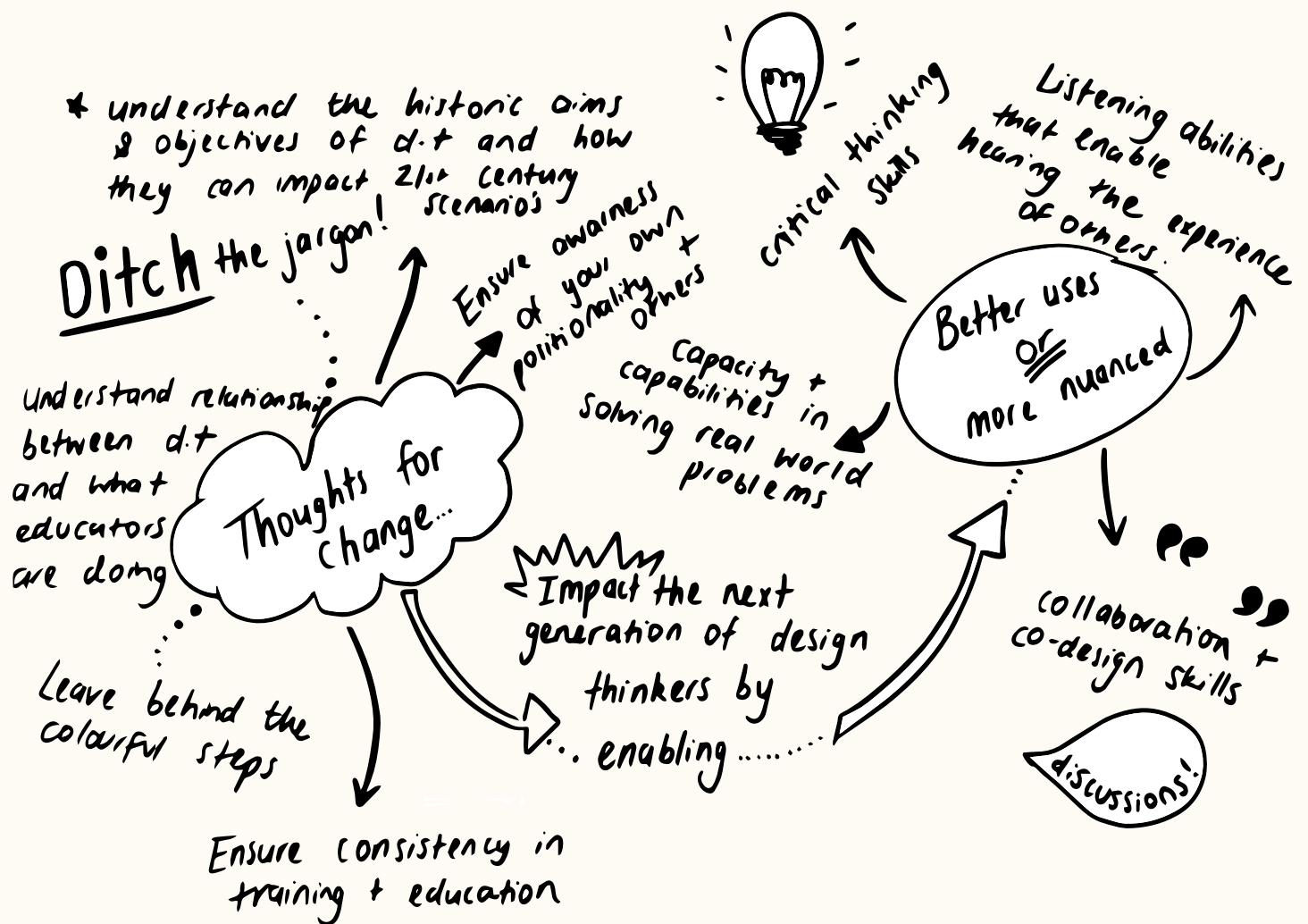


Figure 13: 'Thoughts For Change' Bubble diagram by Megan MacKay.

5.4 Towards My Creative Outputs

Lee Vinsel, author of 'The Innovation Delusion', and a vocal critic of the current model of design thinking being used in business asserts that innovation, often models through design thinking promotes negative results. He asks why business focuses so much on growth and an 'obsession' to innovate, when in fact "it is causing us to waste money and do less innovating" (Vinsel, 2020). Instead, Vinsel suggests focusing on creating a 'maintenance mindset' and argues that care and maintenance have been overshadowed by this immense need to grow, innovate, and design new things without consideration of how we will 'keep up' with the changes. Vinsel acknowledges design thinking as an important tool but also as importantly in this quote, he relegates it to a communication tool saying, "processes like design thinking can be helpful to get people to talk to each other" (Vinsel, 2020). Vinsel's book defines 'innovation speak' versus 'actual innovation' and aligns with a common theme brought up in interviews that design jargon is often misleading and confusing in a more corporate setting. Vinsel states "the cost of innovation speak are high, and we need to stop treating innovation as an implicit good rather than a means to an end" suggesting we need to instead focus on creating healthy cultures that promote care and maintenance (Vinsel, 2020). This sets a higher status for people carrying out these tasks, instead of adding to the glamorous innovative, new solution focused corporates using design jargon and

‘innovation speak’ without much follow through. Again, the ideals and aspirations offered by Principal Interview 5 come to mind achieving this through cultural values. An example of his, points to new innovation campuses for universities around the world with no proof of being any more profitable or innovative. Maintenance has always been a factor within our lives, dating much further back than this research begins – yet we are talking about it less, and only focusing on innovating and creating the ‘new’ (Russel & Vinsel, 2018).

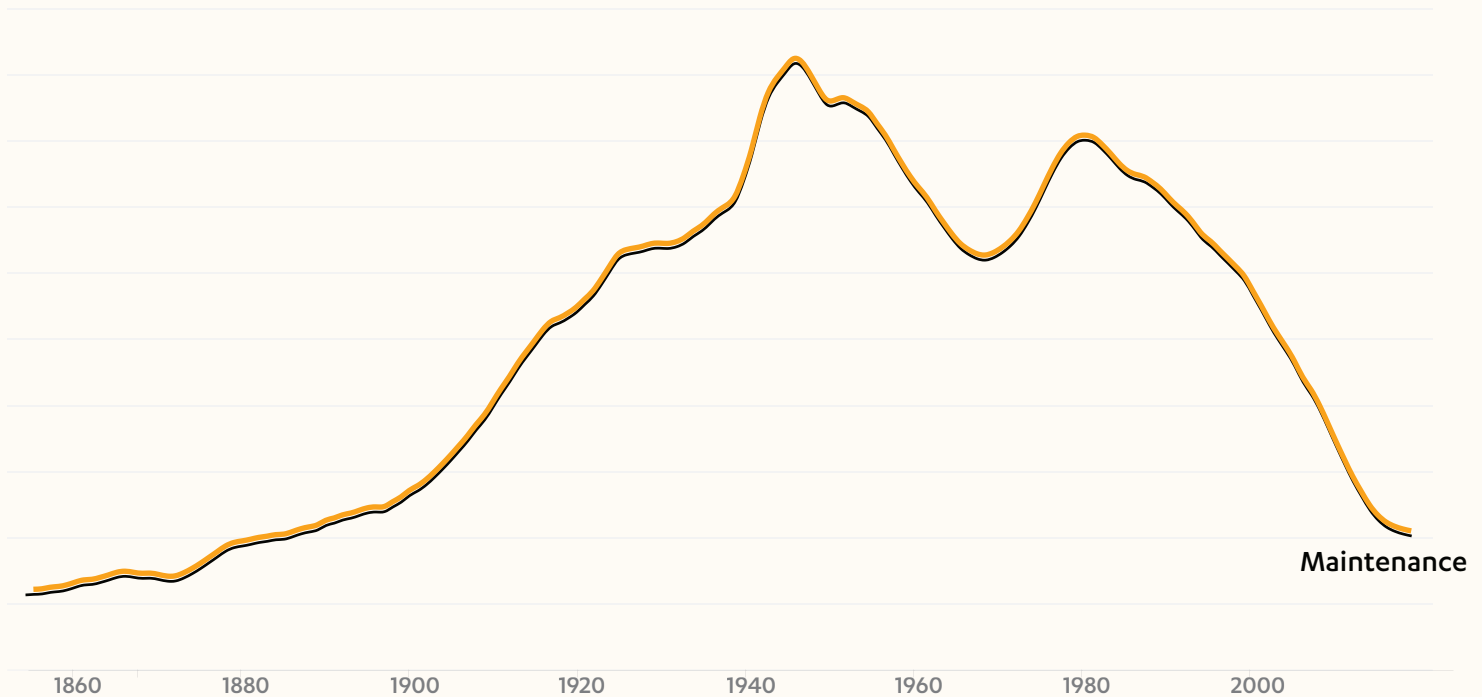


Figure 14: Google NGRAM ‘Maintenance’

The Ngram above, show a steady use of the word ‘maintenance’, however it has dropped off since 2000, yet ‘innovation’ (Figure 15) has only risen supporting Vinsel’s, and this research’s argument.

This research undertook extensive reading as well as the interviews and identified the specific jargon, and terminologies used within design thinking, human centered or participatory practices, workshops or online seminars. These, considered fundamental to design thinking practice and are either unclear or unknown. Therefore, I have in response designed a deck of sixty design cards. Named ‘Not just for Designers’, they are available on the ‘Teleology of Design Thinking’ online platform that I also designed to assist in the clarification of the historic trajectory and developments of design thinking over the last half-century. Both outputs recognise the challenges and changes that have taken place over the this time frame and respond to what this research has identified as ‘asked for or needed’ in the teaching and use of design thinking moving forward. These also include recognition of gender inclusion and new considerations of positionality and privilege. These outputs are

just first steps – but I believe important ones.

Vinsel suggests, adopting this mindset will lead to more profit and better environmental outcomes (Vinsel, 2020).

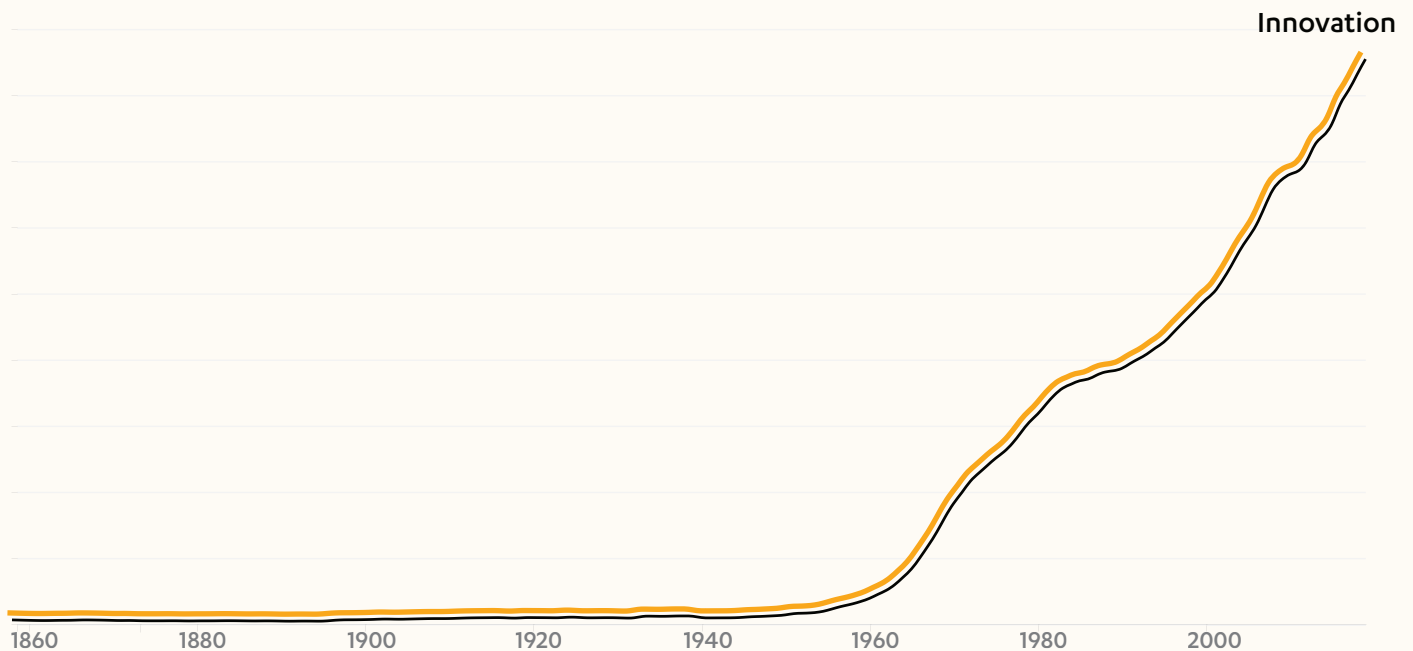


Figure 15: Google NGRAM 'Innovation'

5.5 Where Are We Now and What Are the Next Steps For Design Thinking?

Katherine Burd points directly to privilege as a concern for design thinking. Burd highlights that the use of, or access to design thinking is a privilege in itself and without consideration of this, designers can default to a “hero role; positioning themselves as the rescuer” (Burd, 2020). Dr Lesley Anne-Noel, Associate Director for Design Thinking for Social Impact, and Professor of Practice at the Taylor Centre for Social Innovation and Design Thinking at Tulane University, also addresses this concern when she states, “No amount of interviews, observations, or whimsically named exercises can replace a diverse team and allow a white person to design for a black person or a person of colour, or for a man to design for a woman” (Noel, 2021). This quote expresses the absolute need for representation and co-stewardship when designing with others. Burd also asserts that there is a growing critique that many design thinking practitioners lack empathy and whose skills are ill-suited to the task. Principle Interview 2 also noted their experience with design thinking workshops highlighted that facilitators lacked formal design education and that appropriate or comprehensive training was not always provided; causing a very diluted and sometimes incorrect model of design thinking being both promoted and demonstrated (personal communication, January, 2021). Important

to this research and what I now find myself reflecting on, like Noel, is, “I keep wondering what does a relevant design curriculum look like for students who are not rich, white, male, American, or European” (Noel, 2020).

So What Might That Next Step Be?

I started this thesis asking where, when and why did design thinking emerge. I went on to ask what does it look like now, and how, with this knowledge can this research contribute to the development of a model of design thinking that better parallels the issues we face as citizens of this world. A broad sweep of the literature highlighted a gap, with my inability to discover a consolidated historic narrative that illustrated the development of design thinking. In response I developed two design aides (not tools); the first a digital timeline that pinpoints critical moments, milestones and roadblocks in that story and identifies the aims and objectives of the initiators of design thinking; Buchanan, Cross and Papanek. Secondly, an alphabet of words, ‘Not Just for Designers’, card deck, that hopes to bridge the divide that one has grown to expect when jargon and new lexicons are introduced to a discipline. This, I believe offers a sound starting point for design and the education it offers to appreciate what design thinking has/can/should contribute to the wicked problems facing the planet and the language, tools and jargon that define and describe the practices.

Design is, in essence, making things better, on purpose, and aims to improve by remaking our surroundings and experiences, but more recently changes and expansions to design’s scope of inquiry requires designers to design ‘for’ and ‘with’ other people. This makes the process much more complex. Dr Noel reflects on design thinking as, “not as a set of boxes to be ticked, but as a universe of different ways of thinking and knowing” (Noel, 2020). Noel breaks out of the hexagons and double diamonds so ingrained in design thinking and, although discussed towards the end of this research Noel’s practice asks what this research sees as a key question, “Who are you in relation to the people you are working with and solving for?” (Noel, 2020).

Although the designed outcomes are in fact ‘outputs’ in nature, both of the elements have been formed and worked upon throughout the entirety of this research portfolio. The cards and platform have been reflected upon, shared, tested and considered throughout. This research highlights a gap, which still remains, as there is no place to consider or compare the ideas and differences design thinking has in different situations, as this research projects. Therefore, the platform along with the cards helps to raise awareness, share knowledge, and to create space for this reflection and learning to take place.

The deck of cards purposely remains open-ended to allow methods, terminology and frameworks to be added to the deck over time. The cards selected for this study have been

chosen by my own observations and discussions with interviewees. The display box was made by my father and I to represent the idea that this could be evolved and expanded into weaving, recycling, up-cycling depending on the user and how they would like to keep their deck of cards. Accessibility has been considered and a digital version of the cards can be accessed too. In future I could see expansion into picture cards, cards with brail and perhaps speaking cards to engage and reach as many designers as possible. An idea to have these cards in Te reo Māori would also be welcomed, however within the scope of this project and my own positionality this cannot be done by myself alone.

The style of this platform is a play on what can be found in largely American, euro-centric large design corporations. Often bright and friendly in colour. As previously stated, to find this style, you only need to google ‘design thinking’. The platform is also open-ended and would welcome other designers, educators and professionals to expand on and add to the trajectory that has been defined. The platform is a high quality mock idea, that has been prototyped using adobe XD. This allows for a user to experience the platform but it is not live. The platform has been lightly user tested, ensuring the experience is playful, engaging and informative. The platform is a space to connect and share materials, podcasts and talks.

So, who am I in relation to the people I am working with and solving for?

Inspired by Noel’s practice and words that acknowledge “a universe of different ways of thinking and knowing” (Noel 2021), I am now circling back to the beginning of this thesis. One of the first acknowledgements I made at the outset of this research was to the Te Tiriti o Waitangi at which time I positioned myself as Pākehā (a white New Zealander) within the context of New Zealand, a bi-cultural nation and multicultural society. My interview with Primary Interviewee 5, a Māori designer was pivotal. Having noted early in this research that design now espouses both human and planet centric approaches to its practice, it became overtly obvious having spoken with Primary Interviewee 5 the relevance and aspirations available to enrich and enable design thinking and design practice models through te ao Māori (a worldview of interconnections between people and place). This knowledge offers the definition of compassionate, inclusive, equitable and sustainable design through the way designers think and do design. In the 2020 book ‘We are Not Users: Dialogues, Diversity and Design’ the authors agree, “Designing needs to be reclaimed as a field of practice where people are the focus, where different perspectives can come together and shape the world” (Subrahmanian et al., 2020, p.7).

“We do not need new processes, we do not need new tools. We need new voices, we need new perspectives, and we need new leadership. To continue as we are is just bad design” (Weaver, 2020).

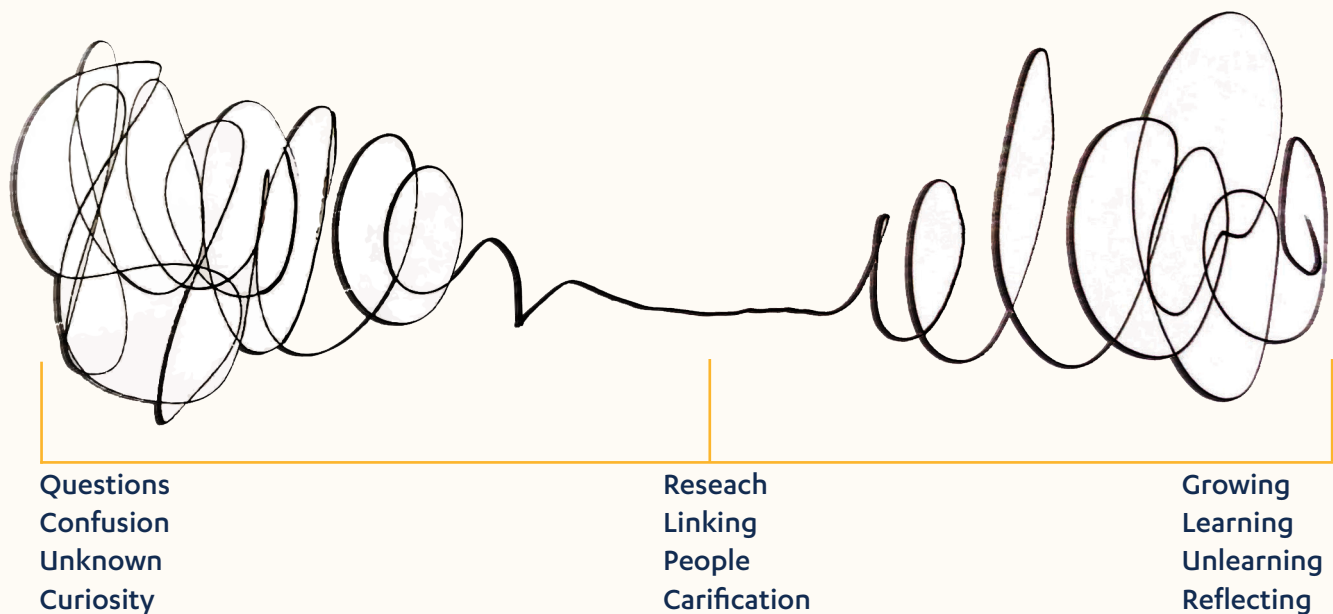


Figure 16: The ‘Real’ Design Squiggle by Megan MacKay

This squiggle, a personal version of Damien Newman’s famous illustration, demonstrates the process of this design research. The beginning of my journey was confusing and full of questions, as they were discovered the craziness relaxed. However, nearing the end of this journey, I am met again with the possibilities of design, the messiness of the process, more questions and more learning to do as I reflect on my experience. I guess, that’s just the nature of design.

Design thinking, I have come to realise needs to be a collaborative, interconnected, holistic approach, and as Noel stated, not a set of tick boxes or standardised diagrams (Noel, 2020). Reflecting on the values, and the worldview described by Principle Interview 5 who highlighted the benefits of designing with an authentic appreciation for mātauranga Māori (Māori knowledge) and tikanga Māori (Māori values). This view uncovers the processes design and designers engage with to establish who we are in relation to the people we are working with and solving for, fundamentally impacting design for the better. Imperative to this shift in practice is the capacity of designers to step away from the ‘hero’ or ‘expert’ moniker to enable the agency of others (rangatiratanga) and in doing so place the framing of both problems and solutions in the hands of those whose lives are and will be impacted. I have also learned an important component of my role, as a Pākehā designer, working in New Zealand, is to step aside and make space for those with this knowledge to integrate

it in ways they see as meaningful. This is not by any means a passing of the baton with no responsibility on my part to contribute to change. Understanding that the development of 'better practice' is a shared experience and a shared responsibility (whanaungatanga) of all those who engage with it is an important point. My role as a fledgling designer is to engage meaningfully and respectfully with this knowledge; learning more about it; its language, values and worldview and support its integration and the inclusion of 'those with this knowledge' in my own future practice.

This research has elucidated the polemic instances and understandings of what design thinking has become over the last fifty years. It has looked at this through a lens that asked what design thinking has to offer the world if we are willing to challenge our interpretations of what design thinking was, is and can be. People, not just designers have been designing forever, and respecting diversity within, and as a fundamental component of a model of design thinking that enables all cultures to thrive, we can, this research believes, deliver compelling progress.

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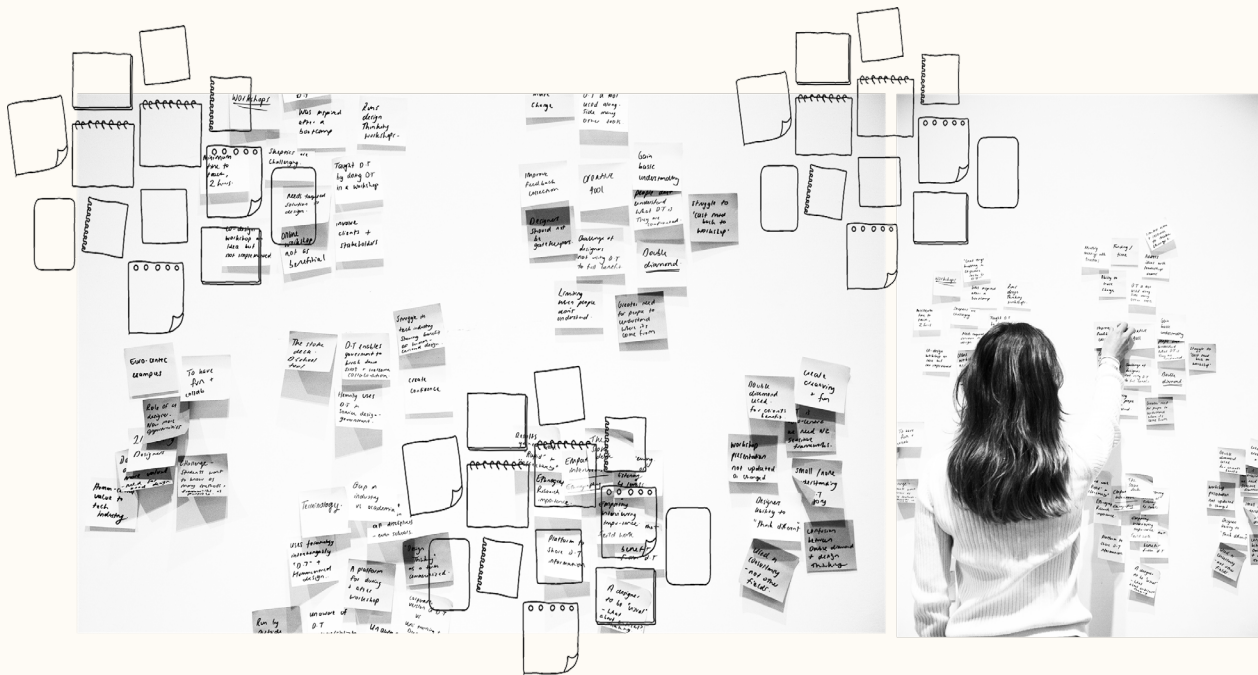
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A. Affinity Mapping



B. Interview Guide

Can you please tell me a bit about your study and career pathways and what led you to your current practice?

Do you re-call when and how you were first introduced to design thinking?

What do you perceive the role of a design thinking expert to be? Can you tell me about this?

How has design thinking helped to influence or change your work?

What do you enjoy most about working in the field of (design, co-design, user-experience design, design research)?

What have you learnt from your experiences in or with the field of design?

From that experience, what advice would you give to yourself starting out?

Can you talk me through any projects that may illustrate design thinking or design thinking principles in use?

Are you familiar with the five-step design thinking process? If so, what are your views or experiences with or of that specific process?

Have you attended a design thinking workshop before? What role did you play? (Facilitator, observer, participant, guest).

Can you give me an example of where you feel design has had a largescale impact – perhaps even global?

What does the statement ‘everyone can be a designer’ mean or say to you?

How would you explain design thinking to a non-designer?

Do you think the role of a designer has changed in recent years and if so, how?

Do you perceive design thinking as business model and design thinking’s teachings within education differently? How?

Do you believe in designing ‘with’ and not ‘for’, if so, how do you ensure this in each project?

What is something important you feel designers should be aware of when promoting and using design thinking?

What are your most used tools for collaboration? Has collaboration changed for you post-covid?

What differences, if any are there in the uses of or delivery of Design Thinking between perhaps a Not-for-Profit organization and a corporation?

C. Research Timeline + Activities

| Critically review design thinking framework | | | | |
|---|---|---|--|---|
| 2020 | Writing + Research | | Four month progress report | |
| AUG | SEP | OCT | NOV | DEC |
| Covid-19 Resilience plan. Ethics approval. Proposal approval. | Research Design Thinking, micro-credentials and workshops. | Background Research. Annotated bibliography. | Colloquium presentation and feedback. | Organize and carry out interviews with selected participants. |
| World Design Organization, Young Designers Member. | Problem definition. | Working literature review. Introduction. | Parson's School of design online class start. (8 weeks) | Interview One: Strategic Designer. |
| Research design thinking history and influences. | Identify possible participants for interviews. Draft interview guides. | Compare historic design thinking use with contemporary use. | Literature Review. Methodology. Compare design thinking's use in educational with commercial use. | Empathetic Interview technique. |

| Critically review design thinking framework | | |
|---|---|---------------------------|
| 2021 | Review, Edit, Future | |
| JUN | JUL | AUG |
| Future of this research. | Review + Revise. Checked by supervisor. | Presentation and Marking. |
| My future in design thinking. | Portfolio Submission Due. | |
| Conclusions and reflections. | Exhibition of work and presentation. | |
| Screen recording and photos of creative elements. | July 12th Final date | |

Critically review design thinking framework

| 2021 | Eight month progress report | | Insights, Outcomes, reflection | |
|---|---|--|--|---|
| JAN | FEB | MAR | APR | MAY |
| Drafting major influences and milestones for design thinking. | interview three: Experience Designer. | Produce a deck of design thinking cards. | Follow up interview two. | User testing of website and alterations. |
| Interview Two: Service Designer. | Interview four: Design Educator and Consultant. | Follow up interviews on selected few. | Follow up interview Seven. | Photograph Design Thinking cards/ website in use. |
| See how Design Thinking is used in government. | Interview five : Innovation Specialist. | Interview Six: Design Thinking Educator. | Compare and contrast findings. | Body of writing and start to conclude information. |
| Produce interactive timeline and website. | Affinity mapping of interview themes. | Interview Seven: Not for profit CEO'S. | 'The Business of Design Today' Post-Covid-19 panel discussion with Design Assembly. Synthesis. | Contact designers and illustrators for use of work. |
| Current design thinking articles, websites + marketing. | Body of writing. | Code all interviews appropriately. | Keep up to date with social media and design thinking current discussions. | Interview 8: Maori worldview in Design Thinking |