Summary of Proposed Research Program for Doctor of Philosohy

**Title:**

How might co-design support autonomous and creative behaviours in the service industry?

**Abstract:**

The emerging field of design thinking (Brown 2008) is presented as a new application of practice that is distinct from the popular assumptions about the methods and role of design. It is positioned as a collaborative process rather than one that is reliant on individual inspiration or creative genius (Brown 2009). The term co-design is used as the design thinking community's shorthand for this collaborative approach, which lies at the heart of its effectiveness. The community further claims that this form of co-design is both modern and progressive. The overarching framework of design thinking is presented as being most appropriate for the resolution of "wicked problems" (Buchanan 1992), which represent some of the major economic, social and environmental challenges of mankind.

The proposed research is intended to test these various claims, particularly whether design thinking represents a new and progressive type of practice. It will be argued that the underlying power dynamics of collaboration are problematic and that it is unclear whether, or not, they are fully understood by the design thinking community, its practitioners and clients. Consequently, improvisation will be critically examined as a potential exemplar of creative collaboration (Vera and Crossan 2004, Heward and Bacon 2006, Mendonca 2005); and the improvisational method will be investigated as a means of triggering genuine collaboration and original service behaviours. This investigation will then inform the prototype design for a workplace system that reliably evokes these behaviours.

The focus on the improvisational method as a potential platform for self-guiding and creative behaviours in the Australian service workplace, and the transfer of knowledge from the disciplines of art and design to contemporary business practice, is intended as an original contribution to the field.

**NB:** The substantial increase in the scope of the proposed case studies and the redesign of the practice phase of the project, which combine to increase the originality of the overall research, are the reasons for the application for conversion to PhD.

**Objectives:**

***Central Research Question:***

How might co-design support autonomous and creative behaviours in the service industry?

To answer this question I will focus on the following objectives:

1. To establish the theoretical context of co-design and to locate it within contemporary professional practice.
2. To analyse the critical distinction between the constructs of cooperation and creative collaboration, with a close examination of underlying power dynamics.
3. To investigate the use of improvisation as a method for supporting creative collaboration in the service industry.
4. To produce high-resolution concepts for a workplace system that drives innovative service behaviours.

## Background:

### *Introduction:*

The researcher has spent most of his 20-year professional career trying to devise and deliver services that provide additional value for consumers, and the co-design community now claims to be able to provide a new and effective means of achieving this goal. Services increasingly dominate the Australian economy but the future ubiquity of industrial technology seems likely to make many mid-skilled service roles redundant, creating a gulf between a minority of highly paid service professions and the majority of low paid, unskilled service roles. As the mental and physical labour associated with well-understood, codified knowledge is transferred to automated processing systems – both ends of the service spectrum will require creativity to maintain a sustainable market advantage. This will prove particularly challenging for those workers in the unorganised body of unskilled labour, especially young candidates who are seeking debut recruitment to the workforce.

Consequently, in many service workplaces, there is the need for the creation of tools and systems that underpin autonomous and creative behaviours – as opposed to the industry's preoccupation for both abstract rhetoric and didactic overload. During an investigation within a specific organisation into the dynamics that govern improved service, relationships and behaviours were observed that appeared to transcend that workplace and suggested the existence of a number of archetypal service scenarios that might be intuitively navigated by service workers – given the appropriate visual cues and permission to act spontaneously. Given the transformation of the Australian service economy, it seems timely that unskilled service workers be better enabled by approaches that draw on tacit knowledge and each human's capacity for originality.

### *Design Thinking:*

The design thinking approach is distinct from positivism and calls for the integration of arts and science (Schon 1994, 42). It encourages its practitioners to engage both the emotional and logical capabilities of their minds, in contrast to the traditional scientific approach (Cross 2001). It also iterates the sequence of: desirability, feasibility and viability (Brown 2008) to arrive at effective and sustainable outcomes. It is the collaborative, layering of ideas that forms the engine of co-design – connecting many minds in the search for new patterns and associations. This is a definitive aspect of the design thinking method, and marks it as being the distinctive action of working together to produce or create. Collaboration is especially applicable to these intellectual endeavours, with commonly associated behaviours including optimism and a preparedness to work in a generative manner (Brown 2009, 76-78). This is in contrast to the less dynamic behaviour of cooperation, which is understood as the simpler process of working together to the same end, with the commonly associated behaviours of compliance and harmony.

However, the collaborative approach is often mistaken or – on occasion - forsaken for the far less valuable behaviour of cooperation. Therefore, it is also important to consider what tensions this might create amongst co-design practitioners that bear the weight of client's expectation. This is an aspect of co-design that is clearly problematic. Bourdieu (1998, 5) provides a useful critique of the political tensions that exist between the forces of economic and cultural capital across the social space, and marks out the underlying antagonism between the industrialist and the creative designer. It is, therefore, necessary to establish some clear working definitions for culture and society.

Culture is understood as the values and ways of life of the members of a society, or of groups within a society. It includes "how they dress, their marriage customs and family life, their

patterns of work, religious ceremonies and leisure pursuits" (Giddens 2001, 22). Society is then understood as "a system of interrelationships which connect individuals together" and "all societies are united by the fact that their members are organised in structured social relationships according to a unique culture" (Giddens 2001, 22). Cultural and symbolic capital (Chernilo et al. 2013, 295-299) play a crucial role in the construction of modern self identity: "the understanding people hold about who they are and what is meaningful to them", and social identity: "characteristics that are attributed to an individual by others", and place that individual relative to others in the social group (Giddens 2001, 29).

Moreover, the roles of cultural and symbolic capital grow ever more acute in post-modern societies (Giddens 1991, 5, Montague 2013) where economic development may have enabled satiation of all basic human needs and people may migrate to telling their story of identity through stylistic activities that are loaded with cultural meaning. As per Eno's contextualisation, "culture is everything that we don't have to do" (Press and Cooper 2003, 11). Nevertheless, people may often be blind to their actual habits, being driven by unconscious or sub-conscious motives. As humans, we are often vulnerable to the effects of cognitive dissonance and post-rationalisation (Festinger and Carlsmith 1959), as well as poor quality decision making or unconscious presumption (Myers 2010). It is becoming ever clearer that people (particularly when acting as consumers) cannot easily articulate what they might desire and why they may desire it.

This dynamic is central to the project, as it calls into questions why – in a society where we, ourselves, are often consciously unclear on what we desire – service firms rely on either entirely abstract or overly standardised methods of grooming new employees in the discharge of their primary duty - to serve. In the experience based economy (Pine and Gilmore 1998), product and service are inseparably fused in the pursuit of value creation. The ephemeral fashion in which your coffee, for instance, is served to you is as much of the overall experience, and rationale for the price, as the carefully selected coffee beans. So, how might the service worker hit a performance target that is not only hidden from them but also the conscious judgement of their customers? Techniques that are creative and sensitive to culture must be employed: first to enable people to express what might be desirable or valuable to them – and then to share these insights with the service sector.

For instance, design ethnography, structured workshops (Stickdorn and Schneider 2010) and physical prototyping (Brown 2009, 87-108), are all noted in co-design practice but this proposal will focus on improvisation and its role in supporting collaboration, through the generation and validation of ideas. This aligns closely with the design thinking motif of divergent and convergent thinking (Brown 2009, 67). Many people might recognise the performance art of improvisation as the embodiment of the collaborative ethic, and the definitions in literature support this analogy (Mendonca 2005, 954, Vera and Crossan 2004, 731-733). The technique of using "yes, and" as a conjunction for the ideas generated by the improvisational group, each new idea being known as "the offer", underpins the development of an initial idea – rather than the more typical "no, but" that replaces one idea with another. Nevertheless, the power interactions present in the dynamics of the proficient execution of these techniques must be properly understood, particularly when true creative collaboration is being sought.

***Wicked Problems:***

A variety of complex, or "wicked" (Rittel and Webber 1973), problems exist: to which there may often be no single, correct answer. Where a solution does not already exist independently of human cognition; it must be generated through enlightened iteration. In these scenarios, the location of a needle in the haystack should be recognised as success,

rather than being judged by the benchmark of irrefutably demonstrating it to be the sharpest needle in that haystack. More precisely, the outputs of this type of practice-lead, creative enquiry must be judged by their quality rather than their validity (Reason 1994, 82). Correctly determining, and successfully employing, an original and effective service behaviour, that anticipates an unspoken customer need, is this type of judgement-reliant challenge.

In contrast, during problem solving games like chess, or noughts and crosses, there is an optimum action that can be deduced – either by application of intelligence or knowledge of the task environment. Yet another problem type is made more difficult by the additional need to find the correct, that is to say personally meaningful, internal representation of the challenge: for instance, the nine dots puzzle where one needs to draw a line that extends beyond the imagined boundary of the square. Newell and Simon (1972, 91) explain: "Several methods may exist for a single problem formulation, representing alternative ways to attain the goal. However, in general there turns out to be only a single method associated with each of these more basic types of problem formulations." That is to say that the existence of a single solution, irrespective of the means available to discern it, applies only to those problems that would not meet the criteria for being deemed "wicked". In the original definition of Rittel and Webber (1973), fully grasping the problem is cited as a major step towards generating a solution.

Rather than deductive logic, abductive thinking (Martin 2009, 64-65) – that is thoughts of what *could* be – is required to tackle these more complex problems. However, the lateral leap may often seem obvious when viewed in hindsight as a linear thought path can then be deduced: leading to the *paradox that the more original the discovery the more obvious it seems afterwards* (Koestler 1975, 120, de Bono 1982). Nevertheless, this retrospective evaluation assumes that access to the novel thinking pathways was available to all problem solvers - and so the solution was never really obvious, after all (Newell and Simon 1972, 82-83). Access to these divergent pathways may require unconscious and conscious resources (Popper 2012, 18), and generation of an original solution may require access to tacit knowledge – perhaps through provocative stimuli – as well as fresh production through intelligence.

The opportunity is to properly position the scientific approach as being received as a rational process for the discovery and testing of knowledge, rather than the partial definition that is most commonly understood, which is that of positivism (Popper 2012, 3-5). For clarity, this will be the meaning used throughout this project. Science in its fullest sense is an epistemological approach, rather than a field; thus it may be argued that design thinking's search for truth rather than certainty (Popper 2012, 4) simply locates it as a sub-set of that overarching approach. The techniques of design thinking are founded on the generation and rational, although not slavishly objective, assessment of evidence – it is an empirical process. However, it is undoubtedly distinct from rationalism or the realm of those formal sciences – such as mathematics - where deductive and *a priori* logic are the primary tools of investigation. Being human-centred, in a similar way to behavioural economics or psychology, the value of its findings is grounded in cultural reception rather than a universal physical law.

This creates one of the central problems of communication between scientists and designers, because the problems addressed by designers seldom fall solely within the boundaries of any one of these subject matters. (Buchanan 1992, 14)

To summarise, it is useful to consider the process by which knowledge is generated and refined. In the rational scientific approach, there is a progression from hypotheses to theories

to laws. With this progress there comes an ever-increasing reliability, although rarely absolute certainty, of prediction based on observed evidence. In contemporary terms, this progression is often expressed as: hunch to heuristic to algorithm to code (Martin 2009, 8-9). In both forms, there is a reducing amount of mystery as the form of knowledge is investigated and understood, and the area for investigation becomes more closely bounded and refined. However, the model is an oversimplification as it assumes a reliable, linear path from problem to solution exists. In fact, much time must be spent in the realm of uncertainty before enough is achieved to progress along the route. In this phase, there will be many false starts as the problem may not only be complex but also poorly framed and understood.

Although a rational investigation may be pursued end-to-end, with the move from algorithm to code being suited to a positivistic approach, the move from hunch to algorithm is the domain most suited to design thinking. A positivistic approach to this space may prove problematic, as it relies on some existing boundaries to the search space. Premature selection of a convergent route towards a solution, that is later revealed to be flawed, seems likely as a consequence of the unbounded domain; whilst a fully systematic search may be impossible, for reasons of either intelligence or resources. Although it is distinct from the methods of the formal sciences, the application of creative, intuitive and emotionally driven thinking *is* the rational approach to the situation. The misunderstanding of the respective realms and merits of these distinct, but complementary, cognitive methods is at the root of the unhelpful division between the creative and scientific fields.

***Conclusion:***

Having located design thinking as a creative, but rational, and collaborative problem solving approach, it will now be useful to clarify how co-design might create value by supporting autonomous and creative behaviours in the service industry.

Traditionally, product design has been the focal point of systematic innovation but, as products and service blend into a single consumer experience, a mechanical focus on technology proves insufficient (Brown 2009, 178-181). Perhaps the primary feature of the design thinking approach is to invest ample time in understanding the human problem that is worth working on, rather than the one that might be immediately apparent. This habit is not only a general example of divergent and convergent thinking, but also informs this project's specific investigation of identifying service behaviours that anticipate a customer's needs.

As shall be examined, the role of the subconscious and unconscious play a major part in the formation of mood and meaning, and - beyond the standard service mechanics that are intended to ensure customer satisfaction - there is a realm of original actions that might lead to customer delight, increased profits for the firm – and an enhanced sense of personal authenticity for the service worker. These autonomous and creative behaviours are not currently supported by the traditional training materials that usually focus on imparting the explicit facts of the service business, such as standards and procedures, to a new employee. Consequently, it will be the application of real-time collaborative design - at the interface of the employee and customer - that will be tested as a potential enabler of authenticity and delight.

**Significance:**

Co-design, as an element of the design thinking framework, offers a means of bridging the gap between poorly understood questions and yet to exist answers (Schon 1994, 16). Its practitioners claim that creative collaboration is central to this method. However, the collaborative approach - that supports the layering of new ideas in pursuit of an effective and original solution - is often mistaken for (and misunderstood as) cooperation. These two

concepts are distinct both in theory and in practice. I suspect that the tripartite power dynamics of the client, designer and consumer, govern the move from cooperation to collaboration. Dimensions such as: cultural inertia, bureaucracy, self-interest and professional skill - both in diagnosis and response - loom large (Kofter 2007, Martin 2009).

Press (1995, 2) argued for the urgent need for a new research culture for design, with Brian Eno making a claim at the 1995 Turner Prize ceremony (Gray and Mallins 2004, 9) that, in comparison to popular science, the arts community had failed to articulate itself to the outside world. It has been noted that the contemporary design thinking literature seems to be generated by practitioners within the business community, and – although there have been several articles published by scholarly sources – these arguments also emerge from business school environments. It does not appear that the discourse on the benefits of design thinking, and specifically consideration of co-design, is dominated by the art and design community, and the increasing influence of predictive data analytics (Siegel 2013) may further overshadow this community's contribution.

In their influential study of breakthrough industrial innovation, Kim and Mauborgne (2004, 12-18) highlighted the diminishing returns of an incremental pursuit of best-practice and the open opportunity of innovating an entirely new business model. One of their case studies was the reinvention of traditional circus into an original, compelling and profitable form by Cirque du Soleil. This reinvention is not only grounded in a creative approach to the organisational form but also the individual creativity of its performers – that produces value through intense, emotional engagement with each night's audience. It is notable that fledgling Cirque du Soleil performers arrive with individual achievement in a specific, often athletic or gymnastic, craft – but must learn to merge their individual technique to the creative mode of a team.

> We need to transform an individual into a team player … and transform them into an artist who can bring complete strangers to tears just through his body language. (Heward and Bacon 2006, 32)

Given the transformation of the Australian service economy, it seems timely that unskilled service workers be better enabled by approaches that draw on tacit knowledge and each human's capacity for originality. The valuable benefits of such approaches are likely to include: enhanced job satisfaction, improved customer service and increased profitability for the firm. Nevertheless, this proposition also requires reflection on whether any waiter who could reliably, but spontaneously, perform a sequence of desirably original behaviour *in sympatico* with colleagues and an audience of customers, might reasonably be recognised as a creative performer – and perhaps, even, an artist.

In recognising this premise, and through the careful design of an infrastructure that supports creative collaboration across time and space, there may be the opportunity to draw on valuable, embodied experience in a way that is independent of the proprietary processes that are colonising the field of co-design.

**Research Method:**

A review of the scholarly literature has highlighted a number of important themes, the most critical being the need to depart from the positivist tradition in pursuit of new knowledge in the creative arts (Reason 1988, Schon 1994, Barrett and Bolt 2007, Haseman 2007). Given the stated objectives, and the learning opportunity presented by application of the various methods now available to the arts researcher, a mixed-method (Crouch and Pearce 2012, 129-130) approach is proposed.

The initial objectives of the dissertation phase will be supported by a critical review of the scholarly literature, as well as an examination of current professional practice. Several case studies (Crouch and Pearce 2012, 124-125) will be conducted as they provide a well-established and flexible design research method. Each of the three main forms will be employed, being understood as:

a) Intrinsic – where the case study is focused on understanding the case under examination as a matter within itself.
b) Instrumental – where the case(s) under study is being used to bring meaning to other phenomena or issues.
c) Collective – where a number of case studies may be assembled in an inter-connected manner to provide a wider and richer perspective on a subject matter.

A number of ethnographic interviews (Frankel 2009, Forsey 2010) will be conducted to capture and examine detailed recounts of how improvisation practitioners act and their routines in regard to cooperative and collaborative behaviours.
The subsequent practice phase is deliberately designed to support praxis and personal reflection, as the researcher will include an exegesis that explains their creative process through a detailed narrative and critical review (Pearce 2008). This chapter will contextualize the final research objective: the production of high-resolution concepts for a co-design system that supports original behaviours in the service workplace. It is envisaged that, subject to the level of reflective expression in the practice phase, this mixed-method approach may also meet the criteria for action research (Kemmis 2014, 8-9 & 18-19).

***Dissertation phase:***
A working definition and theoretical context for co-design will be established through reference to the scholarly literature. The harmonisation of: desirability, feasibility and viability, as the definition of successful design thinking outcomes will be closely examined. The critical distinction between the constructs of creative collaboration and cooperation will be analysed through a critical review of the relevant literature that grounds the two concepts: identifying any important similarities and differences.

The current applications of co-design and the intentions of the practicing community will be reviewed. This will be conducted through a close study and analysis of:

1) The Stanford University online module: *Empathize and Prototype: A Hands on Dive into the Key Tools of Design Thinking*
2) IDEO's *Human-Centered Design Toolkit: A free innovation guide and toolkit for social enterprise and NGOs worldwide.*

These publications represent the leading edge of the contemporary presentation of design thinking, as well as bridging the divide between its commercial and social audiences. The technical content and language of these publications will be examined to identify their guidance on engendering balanced collaboration. Those specific instances of collaboration with users that are identified will be analysed to assess whether the expected contribution of users might reasonably be recognized as design behaviours. The resulting material will be written up in the form of a collective case study.

As human interaction in the pursuit of innovation frames this research, an instrumental case study will be compiled to present a number of existing models of oblique inspiration for applied improvisation, and their relationship with the science of psychological cues (Simon

1992, Semetsky 2010), will be considered in the context of the human drive to exercise creative freedom within a provocative framework. The design of the models presented in the case study will be contrasted with the typical dimensions of training material for newly appointed service workers, particularly along spectra such as: provocative versus didactic, conceptual versus specific and reliance on tacit knowledge versus explicit knowledge.

The performance art of improvisation will be examined as an exemplar of creative collaboration. For instance, Vera and Crossan (2004, 731-733) write of "spontaneity and creativity" founded in a flexible environment, and Heward and Bacon (2006) state that "improvisation is the act of creating something new, on the spur of the moment". Critical review of the relevant theory will contextualise the practice phase of research, and an intrinsic case study will also be compiled that reports and examines a number of existing improvisational techniques that are observed in practice and are intended to enable an unmediated response to creative provocation. These techniques will be further contextualised through a semi-structured interview with a leading improvisation practitioner, and then related to the oblique methods for creative provocation.

Once an appropriate level of practical understanding of the prevailing attitudes and techniques has been reached, a short instrumental case study of the dominant concepts in the fields of co-design and improvisation will be developed to investigate a potential method for supporting creative collaboration in the service industry (Eisenhardt and Graebner 2007). In addition, evidence will be presented in support of the claim that - if properly combined with deliberately designed forms of provocation – this method (of applied improvisation) might constitute an innovative model of collaborative design.

***Practice phase:***

The various elements of the dissertation phase are designed to frame the transition to action research in the practice phase. The in-depth study of the fields of co-design and improvisation, themselves framed by models for provoking creativity, are intended to not only inform the researcher but also promote epiphany with regard to their own preconceptions and personal practice. Therefore, the first element of the practice phase will be a narrative chapter that explains the origins of, and motivation for, this project – as well as the reflections on the challenges of the intellectual journey. This chapter will inform, and then explain, the creative context for the final research objective: the production of high-resolution concepts for a system for service innovation. This system is intended to mediate the subtlety and complexity of the service archetypes; with the service worker's behavior being a collaborative and co-designed response to the firm's improvisational "offer".

The eventual physical and aesthetic forms of these concepts are to be determined but, as an example, this system might be founded on a set of carefully designed scenario cards that incorporates a range of ambiguously provocative images and text, which leaves room for interpretation and creative action. The culturally laden fields of: myth, archetypes, symbols and narrative, will inform the design of the system. A critical feature of these cards would be to include no more than were necessary to communicate the quintessence of the situation to the service performer, as this preserves the maximum room for an original response. This response would be located at the nexus of creative problem solving, improvisational performance and collaborative design. The overarching design thinking validation sequence of: desirability, feasibility and viability, might then be reflectively applied to rate the quality (Reason 1994, 82) of those prototypes - or solutions - that are generated behaviorally.

**Ethical Issues:**

Low risk ethics approval has already been granted for the research protocol that was part of

the original, MPhil version of this project. It was issued on 25th November 2014, for project 5241, and remains valid for four years. No additional human research will be required.

Careful consideration needs to be given to the permission for data capture, including interview answers and recorded images, the storage of the material and the preservation of anonymity and commercial confidentiality (where required). Please see Data Storage below.

Awareness needs to be maintained for any commercial and IP benefits that emerge from the research project, as well as the identification of a service organisation that might act as subject and partner. Any duality of interest that may emerge as a result of the opportunity to act as a consultant for this organisation must also be declared.

**Facilities and Resources:**

No unusual facilities or resources are foreseen. There will be some miscellaneous expenses incurred during the project, which appear to be manageable through the consumables grant – or the researcher's private means.

**Data Storage:**

Suitable password protection for electronic files and careful storage of hard and soft copy materials will be maintained. Electronic materials will be backed up to Dropbox and password protected flash drives. Hard copy material will be stored away from public access at the researcher's residential address.

A Research Data Management Plan (CROUCC-HU00138) has already been submitted and was approved on 9th December 2014. The raw data that has already been collected has been stored on the university Research drive. Arrangements have been made to store any raw data (up to 20GB) that is collected at the School of Design and Art for the 7 years required by WAUDSA, also meeting the 5 year requirement of the University.

**Time Line:**

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| Enrolment | 6th January 2014 | Conduct research project | |
| PhD Candidacy conversion | February 2015 | Dissertation phase | June 2014 – December 2015 |
| Ethics clearance | Approved November 2014 | Practice phase | January 2016 – July 2016 |
| Literature review | Complete | Complete 1st draft | August 2016 – October 2016 |
| Finalise objectives | Complete | Editing and rewrites | Nov - Dec 2016 |
| Research design | Complete | Submission | By end Jan 2017 |

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