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**Prologue**

The challenge of understanding creativity is the core issue in the research project *Assessing Creativity: Strategies and Tools to Support Teaching and Learning in Architecture and Design*. The project seeks to develop models for assessing creativity based on best practice in the design disciplines: architecture, design, interior design, and landscape. The first step in this project therefore involves understanding the nature of creativity itself, in order to appropriately assess it.

This contribution is an ‘essay’ in the classical sense of the word defined by the *Oxford English Dictionary*: ‘action or process of trying or testing; a composition of moderate length on [...] [a subject] more or less elaborate in style, though limited in range.’ It is heuristic as well: an attempt at discovery. What I wish to discover—to disclose and examine—involves a range of issues that we do not often address in the design disciplines.

Reporting the findings of a 2008 study on architectural education in Australasia (Ostwald & Williams 2008a, 2008b), Hedda Haugen Askland, Michael Ostwald and
Anthony Williams (2010a) propose three major issues that impede the field: ‘[…] a lack of understanding of pedagogical dimensions of creativity in design; […] no appropriate strategies to understand where different levels of creativity occur and how they should be assessed; and […] a lack of appropriate models or tools to support assessment of creative works.’ While these challenges are significant, many people in the design field seem to believe that architects and designers know intuitively what creativity is and how to measure it, as well as knowing how to elicit the best and most creative efforts of their students.

When many designers and architects discuss creativity, they echo St. Augustine’s (1961: 264) words on the subject of time: ‘I know well enough what it is, provided that nobody asks me; but if I am asked what it is and try to explain, I am baffled.’ Where Augustine admits his perplexity, however, those in design and architecture education who cannot explain creativity tend to ascribe their lack of words to tacit knowledge or to a form of internalised expertise that requires no explanation.

More problematic, many in design and architecture demonstrate little interest in taking on board what experts in other fields have learned about creativity and mastery. Scholars such as David Durling, Nigel Cross and Jeffrey Johnson (Durling 1996; Durling, Cross & Johnson 1996) have examined creativity and learning styles, contributing much to our understandings of creativity and its assessment. A multi-disciplinary approach to creativity is vital to any robust approach to creativity assessment. Yet, design and architecture professionals continue to overlook many of these contributions on creativity, or simply assume that they already understand the nature of creativity. Those who appeal to such innate forms of knowledge occasionally argue that no useful research in creativity exists, and that we must therefore invent this wheel ourselves—as though a century of research (Kaufman & Sternberg 2010) in psychology, sociology, anthropology, and the human sciences did not exist.

It is my hope that this ALTC project will shed light on the challenges we face. This essay offers a sideways look at the issues of creativity that are often ignored. While one occasionally finds these assertions in conference papers or doctoral theses, they are more common as background beliefs stated in tearoom conversation or discussion lists. For this reason, there is little point in citing sources for these assertions—rather, I intend to address the issues they represent.
Problematic assertions

First, one of the problematic assertions that make it difficult to assess creativity is the notion that creative people cluster in certain fields to the disadvantage of others. While the claim is often heard, there is little evidence for this notion.

Many people assume that designers, architects, and artists are creative in greater degree and proportion to their numbers than physicians, physicists, or philosophers.

Since this is an essay and not a scientific paper, I do not intend to offer a complete argument against this claim. Society ascribes the properties of creativity to the arts, to architecture and design, as well as to those fields sometimes labelled as creative industries. These fields represent the qualities and properties of creativity for the societies they serve. It does not follow from this that the individuals in these fields are actually more creative than individuals in other fields. I argue for notions of creativity as a human quality that we find among the best practitioners of most professions, and that we see creativity distributed in fairly equal proportions across all fields.

Second, there are significant problems and challenges in the practice and management of what we label as creative research outputs in design, architecture, and art. These problems rest on and emerge from the first claim. Without respect to the challenge of creative research outputs among academics in such research assessment exercises as Australia’s ERA, New Zealand’s PBRF, or the RAE in the United Kingdom, this issue affects a project such as this with respect to student research projects and higher degrees by research.

In a recent meeting of Deans on the subject of research, I heard a Dean argue for the validity of creative research outputs on the basis that ‘art and design carry our culture.’ His claim was that we measure and accept many fields based on research, but that we cannot measure art, architecture, or design based on research.

If the claim that ‘art and design carry our culture’ is true, it would not demonstrate the validity of creative research outputs. But this claim is only true in a limited sense: it is true, yet it is no more true than the similar claim one can make for mathematics, information technology, or politics. All human actions and institutions ‘carry our culture.’

Third, justifying creative outputs, and what are sometimes labelled practice-led doctorates, leads to another problem in our field: one can earn a PhD in design or
architecture at some universities for an exhibition of artefacts and an essay. This requires what some faculties label studio research, redefining the basis of the PhD from an original contribution to knowledge, to a contribution to culture. This third problem has several faces.

One face of this third problem is whether it is reasonable to accept a 20,000 or 30,000 word essay accompanying an exhibition as a doctoral thesis. Designating such an essay as an exegesis grants a level of scholarship to these essays that they generally do not deserve.

While an exegesis is colloquially defined as a critical explanation of a body of work, a scholarly exegesis entails far more. Exegetics is a scholarly practice rooted in the arts of inquiry and translation that dates back to the schools of classical Athens and Hellenic Alexandria. In the millennia since that time, exegetics became the applied science or scholarship of hermeneutical inquiry in theology, law, geography, social science, and other forms of human communication. Hermeneutics and exegetics seek to establish correct or valid interpretation that permits readers to understand the meaning of a message, document, or text. We apply this by extension to artefacts or other human creations.

By the fifth century CE, hermeneutics sought to disclose four senses of exegesis: literal meaning, allegorical interpretation, moral meaning with an emphasis on conduct in human affairs, and analogical meaning pointing toward future application (Thiselton 1992: 183; see also de Lubac 1998).

Exegesis is a powerful research tool. Applying hermeneutical methods requires discipline, deep learning, careful reading, and practice. These research methods reveal the voice of a subject other than the researcher. Hermeneutical methods seek to give the creators of a text or artefact his or her own voice while opening the world of the text or artefact to rich engagement by a reader. Skilled exegetes warn their student not to impose their own views or voice on the text or artefact. A research project in which the exegete is also the creator raises interesting problems—even though the researcher’s voice is, by definition, the voice of the creator, it may not be the legitimate voice of the text or the artefact, and it is definitely not the voice of those to whom the exegete seeks to open the world of the text or the artefact.

One of the confusions surrounding some subjective or phenomenological research methods is the notion of appropriate subjectivity. The subjectivity of the researcher is not the issue in exegesis. Hermeneutical research discloses the subjectivity and
understanding of those whose world we seek to understand, and it opens the artefact to the subjectivity of those for whom the artefact posits horizons of hermeneutical engagement.

In some forms of philosophical or psychological inquiry, the internal world of the researcher is the central theme. This is so in self-therapy, for example, and in many forms of artistic or poetic inquiry. If the researcher is investigating his or her internal world, the researcher’s subjective voice and experience is the focus. This is not the purpose of exegesis.

Some areas of research involving human beings are not about us as researchers. Those areas of research are about those whom we seek to understand or to serve. When we seek the voice of others in research, the point of research should be their subjectivity. It is their subjective experience, and not our own, that hermeneutics is intended to reveal. This is true of all research that seeks the voice of the other: design research, history, human ecology, anthropology, social psychology, and dozens of other fields.

If our goal is simply hearing our own voice, we do not need a powerful and sophisticated research method such as exegesis. To voice our own thoughts, first-hand statements will do. But that, of course, is the real nature of the essay that accompanies an exhibition of artefacts for a creative PhD. Labelling this essay an exegesis substitutes a simple essay for a scholarly work by mislabelling it as research. And this involves a question on assessing creativity.

Whether or not the essay explaining the work is deemed creative, there remains the question of what it does to contribute to knowledge, understanding, or culture.

A thesis identifies a gap in the knowledge of a field. The researcher develops a research question. The thesis should demonstrate a credible answer to that question. The essay that accompanies the so-called PhD exhibition effectively demonstrates what the creator intends. While this may have value, it may equally well constitute an example of the intentional fallacy that has been the subject of critical and philosophical debate since the 1940s (Wimsatt & Beardsley 1946). The problem of the intentional fallacy is the claim that a work actually realises the creator’s intention, or, indeed, that the creator’s intention has anything to do with the effect the work has for those who read or respond to it.

This is a massive challenge to assessing any creative research output when an essay lodges part of the claim for assessment.
Not long ago, I heard the public examination of a studio research project submitted for a PhD. The exhibition presented half a dozen artefacts. These seemed modest. In quality, they would probably have qualified for the award of a studio master’s degree at some universities, though many require more than half a dozen artefacts. The candidate presented a talk from the thesis to explain the work. Despite using some grand terms and appealing to scholarly ideas with a heavy dose of Freudian terminology, the content seemed inconsequential to me. One of the examiners asked about using Freud and mentioning Freudian ideas in the thesis without substantiating the use of Freudian terms or anchoring them in the literature. The response was, ‘I could have done that if I had wanted to, but I didn’t think it was necessary.’

Following the presentation, the doctoral supervisor asked me what I thought. I said that I found it thin and puzzling. He explained to me that I did not understand the process. He said that the PhD is awarded for a submission in three parts: a thesis, an exhibition of artefacts, and the live examination. Since the candidate had passed, it seemed diplomatic to say nothing. Nevertheless, I was thinking that this professor had it wrong. The PhD contribution should be visible in the thesis without further support. If not, no one will be able to understand or make use of the research contribution, since they will not have the opportunity to see the exhibition or attend the examination. The purpose of the exhibition is simply to make it easy for visitors to see the body of work that ought properly to be reproduced in the thesis. And the purpose of examination is to allow examiners to better understand the thesis should they have questions.

In this case, I could not discern a clear contribution, either to the knowledge of the field, or to the world of culture.

This area involves an additional question with respect to self-analysis. Mature thinkers, such as psychologist Karen Horney or philosopher Søren Kierkegaard, make good use of self-analysis. These were mature, brilliant scholars. One was a practicing psychologist who developed the concept of self-analysis. The other was one of the greatest thinkers of the last two centuries. Ernest Becker (1997: 67–92) once described Kierkegaard as the first psychoanalyst. Can we expect this level of maturity and skill of a typical doctoral student in their early twenties?

The final challenge once again involves assessment, and the question of determining whether the research is significant. How can we know that an exhibition of artefacts makes a doctoral-level contribution of substantial cultural significance? If we look back to any decade of history in design, art, or architecture, the vast majority of creators at any time are forgotten within a few decades. If this is the case, for example, with nearly
99% of the names that appeared in the art magazines or design magazines of the 1960s, how can we possibly claim that a doctoral student whose work has not even achieved public recognition is making a contribution of cultural significance?

There are many serious questions to ask about creativity in the context of Australian higher education. These are only a few of them, but these are challenging enough to require serious inquiry.

**What is ‘creativity’?**

The *Oxford English Dictionary* (2010: unpaged) defines creativity in one of the shortest definitions in that extraordinarily long work: ‘[c]reative power or faculty; ability to create.’ So does *Merriam-Webster’s* (2010: unpaged): ‘1: the quality of being creative, 2: the ability to create.’

These definitions are deceptively simple.

What does it mean to create? In mythic terms, it means to bring into being where nothing has been. This is the creation story of Genesis. But there are many kinds of creation and creativity. Bringing something from nothing is one among them. Another is creating from that which now exists, described as a metaphor in Shakespeare’s *Tempest* (Act II, Scene 1) where the actors speak of one who will ‘[…] carry this island home in his pocket […] and, sowing the kernels of it in the sea, bring forth more islands.’

In management studies, the distinction between these two kinds of creativity—radical innovation and incremental innovation—dates to the 1980s (see: Dewar & Dutton 1986; Ettlie, Bridges & O’Keefe 1984; Nord & Tucker 1987).

Human beings have attempted to understand the nature of creativity since classical times. One aspect of creativity involves mastery of a medium. This takes time and practice. Several recent studies describe opportunity, access to an expert mentor, and extensive deliberate practice—skilled practice with coaching—as the difference between ordinary practitioners and those who become masters (Colvin 2008; Gladwell 2008; Syed 2010). This is one face of creativity, and situated knowledge is crucial to the deep skill that serves as the foundation of durable creativity. One must practice, drill and exercise to drive a car, master a sport, learn a language, develop an unconscious sense for mathematical patterns, play a musical instrument—or handle many of the technical craft tasks required of a designer.
Mastery, however, involves more than situated knowledge. Mastery requires the ability to look deeply into the ingrained patterns and analyse them. This is what distinguishes the master from the technician. Here, we speak of the great racing driver, the athletic champion, the person who has engaged the spirit of a language to move beyond daily use or fluency to eloquence, the insightful mathematician. In each of these fields, as in music or design, one sees a range of talent that varies from no knowledge whatsoever, to the deep competence that characterises expertise. The journey from apprenticeship to mastery always passes through analysis and the ability to articulate the necessary knowledge.

Several of the great creative works of the Twentieth Century illustrate different meanings of the concept of creativity. One is Picasso’s Suite Vollard, an astonishing masterwork that encapsulates and summarises a history of art as Picasso saw it in the 1930s. In these works, Picasso gives free rein to the plastic sense of line in space, collapsing an archaeology of time into the frame of each among the one hundred etchings in the suite.

Another aspect of creativity is looking at what others have seen and described to understand facts in a profoundly different way. One example of this is Einstein’s (1998: 85–98) famous paper on Brownian motion. This is the paper that established the physical reality of atoms. Einstein examined well-understood facts that physicists and chemists had long accepted, bringing them together with well-known observations. But this paper was radical because it reframed these facts and observations in a way that shed light on a basic physical problem that had not hitherto been solved (See also: Stachel 1998).

The tough nature of creativity comes into sharp focus when research requires us to reframe a problem entirely by recasting earlier challenges in a new light. Einstein is a good example of this as well, and Einstein’s great papers of 1905 show how it is possible to look in new ways at what others have seen and discovered, to find new and startling results.

Of course, Einstein is also known for another kind of creativity, and the work that led to it relied on deep physical intuition combined with a rigorous sense of inquiry that drew on Euclidean logic and a philosophy of science anchored in Hume. In two of his five great papers of 1905, Einstein shaped the theory of relativity, paving the way to our modern understanding of physics in a paper on the electrodynamics of moving bodies (Einstein 1998: 123–160), the relationship between inertia and energy content.

There are many kinds of creativity—at least as many as the various kinds of intelligence described by Howard Gardner (2004, 2009: 77–102).

It is difficult to answer; ‘what is creativity?’ in such short scope. Since there is neither time nor space to answer, I’m going to suggest that anyone who wishes to scratch the surface start with Kaufman and Sternberg (2010) for the big picture, or Gardner (2009: 77–102) for a concise examination.

**How does creativity present itself in your discipline?**

Nobel laureate Herbert Simon defines design concisely. To design is to ‘[devise] courses of action aimed at changing existing situations into preferred ones’ (Simon 1982: 129). This clearly applies to the professions we identify by using the word ‘design’, including graphic design, information design, industrial design, interior design and most of the design fields we cover in Australian universities, along with architecture, landscape, and other such fields. But Simon’s definition of design applies to all fields of professional practice in which a practitioner identifies and solves problems on behalf of a stakeholder or the legitimate owner of the problem. This includes lawyers, physicians, nurses and others.

In any field of professional practice where it is our responsibility to solve problems, the nature of creativity is conditioned by at least three requirements.

First, creativity arises from the nature of the problem at hand. Creativity requires understanding and addressing the problem. In the words of the late Jens Bernsen (1986), ‘the problem comes first.’

Second, creativity is demonstrated by fitness for purpose. This requires hearing and understanding the needs of those whose problem the designer must solve: stakeholders, clients, end-users, citizens, or others.

Third, genuine creativity involves the often difficult balance between immediacy and durability, between expediency and elegance, between constraint and possibility. This last series of challenges is daunting, and it describes the difference between journeyman work and mastery.
Constrained by time and an essay far longer than the brief notes I already planned, I will stop here. My purpose in this essay was to examine several issues that have not been addressed as widely as they should be. I hope to bring additional thoughts forward as this project evolves.