Re-conceptualizing Innovation in Design Research

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ABSTRACT

Student interest in design research has strengthened over the last eight years. Design research is an emergent and diverse field, particularly at schools such as Design Studies, COFA, UNSW, which emphasize integration and inter-disciplinarity. At the same time, there is a paucity of models for supervisors of design research programs. Thus, researchers and supervisors of Honours, Masters and Doctoral research develop approaches and guidelines heuristically, drawing on and appropriating from other disciplines, for example, sociology, history, art, and occasionally science. Particularly problematic is the transition from undergraduate to doctoral studies when novice researchers stumble over certain misconceptions of innovation. Believing that design research, like design practice, is required to 'pitch' a new concept as if research is a form of marketing; that research innovation is the appropriation of explanatory frameworks from fields other than design; and that innovation is the result of resolving all aspects of a design situation. In these misconceptions novice researchers conflate aspects of design innovation and research innovation. As a result of such conflations at COFA, intriguing conceptualizations of innovation have emerged, only some of which are capable of driving research. This paper presents a preliminary analysis of how innovation is re-conceptualized in design research at Honours level, and demonstrates how this concept can function in design research training. The paper reflects on a significant sample of over one hundred Honours projects and theses completed in The School of Design Studies since 2002. The result is the identification of two key indicators of innovation in design research; strong social significance, and challenges to both traditional and emergent design conventions. To support this finding, two research projects are discussed in terms of these indicators, demonstrating how scholarly enquiry validates Honours design research claims rather than weakens innovation; and reflecting on the implications for design research pedagogy.

INTRODUCTION

What is required for successful research training in design attracts considerable controversy in design specific and higher education debate. How researchers adopt and manifest generic transferable skills, for example, has received ongoing attention (Melles 2009; Allpress and Barnacle 2009; Kiley, Boud, Cantwell, & Manathunga 2009). A more complex and less well-defined expectation of design research is that it must demonstrate innovation (Melles 2007; Biggs and Büchler 2008). Paradoxically, little attention has been paid to how innovation has different characteristics in research when compared with the nuances of its application in vocational contexts. The tacit assumption is that innovation 'happens' if the design researcher is sufficiently inspired.

The paper draws from a preliminary qualitative and quantitative analysis of implicit and explicit statements about research and design innovation extracted from research proposals and 112 Honours Project theses completed since 2002 in The School of Design Studies, COFA, UNSW. It identifies three common misconceptions of innovation in design research. Firstly, that significant research is tied to a compelling pitch from a celebrity designer. Secondly, that research innovation is demonstrated in appropriating explanatory frameworks from domains other than design. Thirdly, that innovation is the result of synthesizing all aspects of a design problem.

In pursuing these misconceptions, I take the case of the Honours seminar program through the key orienting concepts of context, nil result, and research significance, and propose that the program is one model for research training. In a discussion of two exemplary Honours research projects I suggest that re-framing 'irritants' as a locus for research renovates design enquiry, and that contextualizing research in the domain of design is necessary to defend claims of innovation.

While the reflections presented do not disclose the authors of all projects referred to, the selected samples are by peers who completed their research within 18 months of each other. This criterion for selection accommodates shifts in the program over the last eight years, including modifications to the Honours examination process in 2004, and structural changes to the Bachelor of Design in 2006. The two Honours projects discussed in more detail were selected from a sample of 38 researchers who achieved First Class Honours since 2002 because they exemplify characteristics of the re-conceptualization of innovation.

One benefit of reviewing Honours level research is that the sample—while small at 112 projects—provides a larger cohort for review than masters or doctoral research programs have commanded to date. A second advantage is that fewer variables in the sample, due in part to the structure of the seminars, provides comparable outcomes for review. The contribution of this paper to design education debate is that it formalizes a model for research training for the novice researcher in design and provides a platform from which other programs may be compared.

I. CONTEXTUALIZING COMMON MISCONCEPTIONS OF INNOVATION IN DESIGN RESEARCH

To contextualize the Honours program at COFA, generic art and design research skills are introduced in the prerequisite course *Practices of Research,* delivered by the School of Art Education and History. This course culminates

in a research proposal. The proposals typically address a range of motivations, from aspirations to exhibit design, develop entrepreneurial skills, and to undertake higher degree research. Completed Honours Projects comprise an 8 000 word thesis or a 6 000 word thesis which includes documentation and analysis of studio experimentation. The expectation of the studio component is that it demonstrates an experimental approach that tests researchers' ideas rather than generates a completed design. Supported by a supervisor, and a seminar program that I lead as Honours Coordinator, of the sample, 13% of Honours graduates have progressed to masters or doctoral research, both locally and internationally. A review of research proposals and projects reveals patterns of how novice design researchers misconstrue where and how innovation is demonstrated in design research.

Researchers often understand design innovation as novel applications of technologies, materials, and forms. Implicitly framed as the product of creative inspiration rather than critical analysis of what exists, innovation is seen as only ever radical rupture rather than a series of incremental adjustments. Three more subtle misconceptions also frequently recur. Innovation is assumed to occur independently of a social and historical context, with the inference that it is unrelated to design users. Often this understanding of innovation underpins proposals to research international exemplars to which the researcher has limited access. Inflated proposals, in terms of scale and scope, seem to assume that focusing on celebrity designers or radical and large designs makes the research worthwhile. The conjecture is that if it is communicated with sufficient conviction it is enough to proclaim that a design is 'new.' This frames design research as a form of marketing where researchers are required to 'pitch' an idea, as if to a client.

A second misconception is that research innovation is demonstrated in appropriating theoretical frameworks from other research domains. When this occurs researchers resort to developing eclectic theoretical frameworks, drawing together ideas from tenuously linked sources according to their poetic resonance. In other words, cherry-picking concepts of which the researcher has minimal understanding, and is often unaware of precedents that have already mobilized such debates in design. Presented as an accumulation of similar concepts the different emphases each might bring to the topic are obscured. This reverses the function of an explanatory framework to provide a set of foci and parameters in which to examine the differences between related ideas.

A third misconception is that innovation manifests only in designs that effectively synthesize multiple and competing requirements in new ways. Such an approach prioritizes synthesis over analysis. The underlying definition of innovation here is that it fits both the popular paradigm of design, 'it works', and has never been thought of before. This has become more common with the spread of digital communication and the increased range of design experiences limited to second hand documentation and promotion online. To address these misconceptions of design and research innovation the following description outlines three orienting concepts discussed in the Honours Seminar.

II. SHIFTING CONCEPTIONS OF INNOVATION IN DESIGN RESEARCH

A. Cofa Honours Seminar Program: A model for research training

Explicitly defining the context of the proposed research is the first orienting concept with which the Honours seminar negotiates these misconceptions. This approach identifies a common area of the domains of design and research: the intended context and audience for whom the design or research is thought relevant. Identifying that the primary audience for research is design scholars rather than readers of popular design magazines clarifies that while design and research share a concern for context and audience, research is distinct from practice.

The value of a nil result, where a hypothesis is proven invalid, is the second orienting concept in re-conceptualizing innovation. It draws out the differences between understandings of design innovation in vocational and scholarly settings. Contrary to the view that design and research are incompatible due to design's inability to accommodate a nil result (Pedgley & Paul Wormald 2007: 71), introducing this concept also facilitates adjustment to the differences between vocational and research definitions of innovation. Since candidate selection is implicitly based on the capacity to synthesize conflicting aspects of a design situation, unsurprisingly students often commence the program expecting to apply these same skills. The concept of nil result interrupts this expectation. Shifting the emphasis from synthesis to analysis via the possibility that a hypothesis understood as valid at the commencement of the research but disproved in its conclusion foregrounds how changing contextual factors may inhibit design resolution without compromising innovation. In other words, when a design approach fails, there is value in reflecting on potential explanations for that failure (Poggenpohl & Winkler 2009).

The third orienting focus in defining design research, and one with which many researchers are familiar, is the articulation of a rationale and claims for the significance of the research. At first glance this may seem to reconnect design and research by providing a sense of purpose, a comfort zone for many designers. The explicitness of the rationale and the articulation of the significance of the research, however, provide a touchstone as researchers learn to accommodate uncertainty. Equally valuable is that in explicating why the research matters and what it contributes to knowledge many remaining unquestioned assumptions surface.

To demonstrate how these orienting concepts frame issues particular to design I shall discuss two exemplary Honours research projects and elaborate their responses to two questions discussed in the Honours seminar: What is irritating in design, and where in design discourse has this issue been noted before? From a comparison of the frequency of terminology in descriptions of the selected topics, the rationale and significance for the study, and the context and explanatory frameworks in which the researcher located the topic, of the 112 Honours projects the two I shall discuss were selected as exemplary in how they coherently brought together social significance and design conventions.

B. Seeing irritants as a way of refocusing research and re-conceptualizing innovation

Seminar debate concerning irritants refocuses researchers away from the attractions of establishing contact with a celebrity designer by drawing on vocational familiarity with the concept of design for neglected need, the bedrock of much professional design practice (Krippendorf 2007). Instead of 'need' as a provocation for research, however, I introduce the concept of irritant, by which is meant an issue in design that aggravates doubt or skepticism due to apparent inconsistencies. Initiating the research with an irritant slows down the reconciliation of disparate objectives and constraints to critically review assumptions more precisely. From this perspective, innovation is reframed as incremental change inextricably tied to context rather than a characteristic of prominent designs. Shifting emphasis to irritants thus guides research initiatives that are embedded in questions about the social significance of design.

Observing the different connotations of a walking cane and a forearm crutch prompted one Honours researcher, for example, to consider why these devices, which perform a similar function, carried such distinct associations. The irritant was that the forearm crutch attracted attention to differently abled bodies as vulnerable if not defective, while the cane communicated dignity. Deriving an explanatory framework from design, the researcher reframed the crutch as a prosthesis or human-machine interface in the terms described in new media design theory, accepting some aspects as pertinent and others less so. Reflecting also on the users' psychological and sensuous experiences of a forearm crutch, as well as perceptions by others, the researcher reconfigured the forearm crutch as a definition of the boundary between self and others. Seen this way, it was possible to distinguish the intimate spaces of the users' experiences of the crutch and the public spaces of the crutch visible to others. By enhancing sensuous possibilities for the elderly and disabled, groups often neglected in design concerned with visceral pleasure, the walking device extended and augmented the users' private space. Deeming this necessary for crutch users who are frequently confronted with responses that public declarations of vulnerability generate, the Honours researcher inserted visual and material qualities in parts of the crutch closest to the skin. In her view these created pleasurable sensations that reinstated the dignity of the user.

Differentiating the private and public spaces of a crutch re-conceptualized innovation by linking it to user experience rather than technological advancement. Further, the researcher redefined innovation as a process of incremental change rather than a sudden, radical departure. As a result of outlining the representations of canes and crutches in medical accounts—and the exponential effect of minor adjustments over time—the researcher reflected on the design compromises required to achieve limited synthesis. Thus, innovation was critically rethought in terms of failure, challenging the assumption that innovation resolves all aspects of an issue. Rather than seeing research as a marketing exercise that frames design as a synthesis of all design objectives, innovation was re-conceptualized as an un-heroic compromise that led only to a partial design resolution.

C. Constructing explanatory frameworks in the design domain

Shifting conceptualizations of innovation in design research involves questioning the assumption that if a design is promoted as innovative with sufficient conviction it must be so. Observing the increased number of references to the term 'social responsibility and design,' another Honours researcher reflected on the history of this term in design discourse. The irritant was that the phrase polarized social responsibility, implying ethical practice, from design, as if socially responsible design flagged a new value.

The researcher derived criteria with which to evaluate the validity of a local commercial design studio's claims regarding ethical practice in design by comparing recent accounts of social responsibility and design, within critical design debates of the 1970s. In a comparison of a studio's promotional claims with reports of the designs in popular and trade accounts, and direct observations of the designs produced, the researcher analyzed the differences between these accounts and historical definitions of socially responsible design. Framing the analysis within a forty-year period of design discourse on social responsibility resulted in an in-depth understanding of how the topic had been historically mobilized, and refuted the inference that socially responsible design was new. While historically contextualizing design research is not innovative in itself (Frascara 2007), it led to unexpected insights on the part of the researcher.

Contesting recent assertions that socially responsible design is new, innovation was re-conceptualized as subject to historical constraints. The researcher refuted the social benefit of supplementing commercial design enterprise with so called socially responsible design with the observation that separating social responsibility from mainstream design merely supports social inequality. Having demonstrated that the notion of socially responsible design had a substantial history, the researcher reflected on how the notion elides the possibility that commercial work can be socially responsible and non-commercial work can be irresponsible. This analysis would not have been possible if it had been based on decontextualized—cherry picked—statements about social responsibility and design. Concluding that aspects of the case study corresponded with the historical perspective that design's primary social responsibility is to inculcate self-determination, and recognizing that socially responsible design promotes the studio to commissioning agents, the researcher identified where the studio's claims were valid as well where they were occasionally discrepant. In so doing, the researcher demonstrated how scholarly enquiry in the design domain can validate claims rather than weaken innovation.

III. CONCLUSION

In conclusion, I have proposed that the Honours seminar program is one model for research training of novice design researchers. I have offered the key orienting concepts of audience and context, nil result, and explicitly stated rationale and claims for significance, as focal points that address misunderstandings of innovation in design research. I have also outlined aspects of the Honours design seminars at

COFA that address the misunderstanding that innovation is an attribute of fame and fortune; that research innovation is demonstrated in appropriating explanatory frameworks from related fields; and that innovation is characterized by a synthesis that reconciles all aspects of an issue. My introduction of asking researchers what they find irritating in design and where this has been debated before clarifies definitions of innovation for novice researchers. By concentrating on irritants the research projects described here represent issues common to a large proportion of the sample, 47% in fact, engaged with research into the social and historical contexts of design innovation.

To demonstrate how these approaches reshape common misunderstandings of innovation in design research the paper has described two Honours projects. One, which reflected on the disparate connotations of dignity and vulnerability in the mobility aids of a crane and a crutch, and another that questioned the emergent convention of distinguishing social responsibility from mainstream practice by engaging with accounts of this theme in design history. Further analysis of the nuances of innovation in the data is required. A comparison of the COFA program with Honours research in design at another university, for example, would provide opportunities for cross-institutional review. Reflection statements by researchers prior to and on completion of the two Honours programs could also provide more explicit and targeted reflections on concepts of innovation by novice design researchers. Such reflection statements could also be compared with how masters and doctoral design researchers conceptualize innovation. Thus it is hoped that design research can avoid the conflation of concepts of innovation in scholarly and vocational contexts.

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