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# Critiquing the North American Design PhD

A symposium exploring the institutional frameworks for practice- transforming design research.

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# Introduction

The PhD Program at Carnegie Mellon University's School of Design remains one of only a few doctoral programs in design in the USA. When the School of Design's PhD program was being established in the late '90s, a conference on doctoral design study was held in Columbus Ohio. The focus of that conference was the philosophy behind doctoral work in design – the ontology of the field of design and epistemological issues concerning research appropriate to that field. That conference spurred a series of follow-ups and a long-standing discussion list. To a large extent, the discourse shifted from the USA to Europe and Australasia (Australia and New Zealand, and more recently South and South East Asia), where PhDs in design were mandated by government quality control measures in relation to higher education spending. Practice-based design research – by which we mean academic research that proceeds by way of the processes involved in the professional practice of designing – is now well-established outside the USA.

The School of Design at CMU is currently restructuring its PhD Program. Our intention is to pivot the program somewhat away from its original humanities-based theorizing of design, toward the more practice-based approach that is common outside the USA. We want to do this to increase the role PhD study can play in transitioning the practice of design toward more complex social change work. We believe that a program that conducts research into designing through designing is more likely to be more effectively for designing.

Given the amount of conceptual work on practice-based doctoral design research that has been produced since the Ohio Conference on Doctoral Education in Design and that is drawn upon in the establishment of Design PhDs in European and Australasian countries, the obstacles to the USA's adoption of both Design PhDs in general and practice-based research in particular appear to be more locally pragmatic. We have therefore planned this symposium on the eve of the School of Design's relaunch of its Design PhD Program to interrogate those local obstacles.

Our interests however are not merely centripetally to do with design academia. In the period between the Ohio Conference on Doctoral Education in Design and today, there have been significant shifts in the nature of higher education and the challenges our societies face. Higher Education, especially in the US model, is proving financially unsustainable, or at least unsustainably inequitable. This is not only the case for undergraduate and graduate students paying tuition, but for the precariat of doctoral and post-doctoral teachers and researchers. The system appears open to disruption from new technological platforms (that, as with all disruptions, would not resolve all the problems with the current scheme, but just enough for what remains unsolved to be abandoned). Meanwhile, the social problems that modernist institutions and professional technocratic expertise were supposed to solve have only become more intransigently complex. Demands for engaged, trans-disciplinary research and education remain unfulfilled by universities that have been unable to move significantly beyond their existing disciplines, whether because of long-standing traditions of tenure or bureaucratic classification schemes of areas of research.

This context suggests that the obstacles to practice-based research are more than pragmatic and that the stakes are greater than merely making design feel more at home in its relatively new faculty position.

The symposium is being structured around a series of questions. We explain the questions and give our own responses below. We have asked prominent figures in the field of practice-based research, primarily from outside the US, to also answer the questions prior to the Symposia. There will then be a call to designers, design educators and design researchers to act as respondents at the Symposia.

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# Design practise as research

## *What we mean by this question?*

There is everyday informal research done by nearly everyone, with less self-conscious methods; planning a holiday or purchase or some television viewing. Of more methodical research, there is that done in applied or professional contexts, and then that done in academic contexts. The difference is perhaps a more outcomes-based validity in the former, versus a more process-based reliability in the latter. Whilst design has always been at the looser end of the spectrum of professional practices with regard to reliable methods, the problem-based nature of designing makes it much more of a research-based process than other of the creative industries. The discourse of 'design thinking' has usefully foregrounded what is problematic about design research in academic contexts: it is abductive, based on small n-numbers, and interventionist, and tends to be a method bricoleur (see Question 7 on Research Ethics). If designing happens as a kind of researching, does the lack of formality of its creative-solution-oriented process still invalidate it with regard to the requirements of academic research? (But why should a PhD be only about 'academic' research training? See Questions 5) Or, does academicizing the research processes deployed in designing make them too undesignerly? Perhaps it is academic research that should change to accommodate more creative or productive research like designing.

## *Laurene's response*

Whether it is framed as being practice-based, practice-orientated, practice-led, creative practice as research, or as is becoming more common, design research, the production of scholarly knowledge through the acts of a practice continues to cause ill-ease for some, whilst being plainly valid to others.

I would argue that to use the term practice in relation to research is to acknowledge that knowledge is produced and disseminated by a set of actions, and that a domain of inquiry is defined by determinations about what that set of actions are, and what forms of knowledge production and dissemination are most appropriate to that domain.

This is true whether I practice as an anthropologist, an historian or a designer.

The rise of the professions within the formalized areas of research in the academy has brought many challenges to the traditions of the humanities and sciences. Whilst it was/is acceptable for these fields to be taught in the ever broadening church that is the university which came to include art schools, nursing and allied health professions, business and organizational studies, and design, it is another for these newly admitted areas to then be included in funding applications for research and the awarding of research degrees. There is a contradiction in the language and processes of the academy whereby the modes and outcomes of learning that are acceptable at undergraduate and masters level study are negated in relation to doctoral studies.

In discourses regarding how practice can be research for some there is a fundamental separation between the two. This is I believe based on the idea that practice is either a commercial or creative activity that happens outside of a framework of inquiry, critique or evaluation. The two do not have to be separate, although they may be.

The following are therefore some perspectives that inform my position on practice and research.

1. Not all practice is academic research
2. When speaking of practice as research within the framework of the academy, the term practice refers to a scholarly or critical practice, and not purely a creative or commercial one
3. Research is only research within the frameworks of the academy when it is disseminated – published, exhibited, performed or screened. Undertaking fieldwork, experiments or reflective inquiry in the studio, the library or the lab are the acts of research but they are not deemed to be academic research until critically appraised by peers and placed within their appropriate context for dissemination.
4. The site of dissemination is the means for peer reviewing the quality of the research – rank of publisher, prestige of gallery or Award etc.
5. The outcome of a practice-based PhD must be a critical

- and transformed practitioner able to apply their evolved understanding of design in practice.
6. Practice-based research must be able to stand up to the expectations of rigor and criticality in the same way that any PhD should, and this like any PhD should be considered within the norms of the field of investigation, in this case design.
  7. It is time for the field of design to own its epistemic foundations; it is essential that design schools own and champion the practices of design as their area of expertise and not curtail to the processes of others. Design in the professions and the academy is mature enough to champion and measure its practices and its research itself, and this can be achieved through a critical approach to practice as research.

### *Cameron's response*

My interest in design research qua practice-based is primarily because it offers an engaged transdisciplinarity that should disrupt the modern university out of its incapacity to negotiate the sociotechnical complexities of risk that all societies now face. Designing is fundamentally a process of criticism-through-creation-of-alternatives, one that is phronetic in judgment, systematically relational toward contexts, including future consequences, and agnostic about agency (whether human or non-human). All these put designing in contrast to all other disciplines in the modern university. Consequently, I would insist that while there is research in design practice, its value is the differend it has with academic research. The Design PhD must be established as a deliberate anomaly that affords transformation of the university. This is best served by that Design PhD being practice-based.

Nevertheless, this relation must be chiasmatic. The profession of design also stands to learn much in terms of criticality and strategy from what is best about the university's demands of academic research. I am therefore not arguing that designers can merely do unchallenged designing and call it research or get a PhD for it. The value of the Design PhD lies in tension between practice and academic discourse.

On this, a warning: Much of the discourse around practice-based design research, including our own rationale for the restructured PhD at CMU School of Design, celebrates what could be called homeopathy: there is an assumption that it is good, or at least more productive, for there to be a sameness between how a field is practiced and how it is researched (see Question 11). In critical theory, there is the reverse assumption: that one must get some distance on what is being studied. To my mind, research always involves an oscillation between the two, much as Schön distinguishes the reflection-in-action of practice with moments of more comprehensive, critical reflection-on-action.

## Designerly knowledge

### *What we mean by this question?*

As James Elkins has made clear in what is de facto a comparative analysis of Australasian/ European as opposed to US models of Doctoral Research in the Creative Arts (see the online drafts for the 2nd Edition of *Artists with PhDs* – <http://www.jameselkins.com/yy/>), the former established Doctoral programs by claiming that a) since a PhD is a documentation of research that leads to significant, new knowledge b) and creative practices are (novel) research processes that lead to significant, new knowledge c) one can get a PhD for a creative practice. Elkins and many others are very critical of claim b), in terms of its implications for both research-based knowledge and the nature of creative practice. The test for b) tends to be a selection of

1. The research findings are verifiable (reproducible or triangulatable or at the least, peer reviewed)
2. The research findings have a widely acknowledged domain (they make a contribution to our understanding of humans or their natural or built environment)
3. The research findings are significant in advancing or changing what is done (in professional practice, or in teaching, etc)
4. The research findings can be codified or at least shared among a relevant audience (this refers to content – it has some generalizability – and form – it is conveyable to other contexts)

Elkins' critique concerns primarily Art as researched knowledge generation. There is a substantial literature on 'designerly knowledge' referring to (tacit) knowledge creation with respect to the possibilities or limits of:

- The performance qualities of materials
- The functional, communicative and affective qualities of forms
- Interaction habits of groups of people
- Ways of creative discerning and deploying the above

Is all this knowledge, and a form of knowledge that is research-based to the level of a PhD? Or should a Design PhD be about something other than knowledge creation?

*Laurene's answer*

Nigel Cross (2006, p.10) describes a “designerly way of knowing as it relates to processes and products of designing... [and] rests on the manipulation of non-verbal codes in the material culture; these codes translate ‘messages’ either between concrete objects and abstract requirements.” This facilitates solution-focused thinking and is “the most effective means of tackling the characteristically ill-defined problems of planning, designing and inventing new things.” (p.10) For me in relation to doctoral research through practice, Nigel Cross’s definition of ‘designerly ways of knowing’, translates into a designerly approach that is a composition of: synthesis, proposition, process, ‘materiality,’ context and intention. These are the same practices used in designing and thus ensure the integration between advanced university degrees and the enactment of design in the world.

*Cameron's answer*

I have argued previously that designers could or should have unique insights into humans insofar as humans are always be-thinged in how they go about the world. This is something that sociologists and anthropologists and philosophers are only recently started paying attention to. In most cases, these ‘material’ or ‘thing’ or ‘practice’ turns remain descriptive of what is, not explorative of what could be (in Hebert Simon’s sense of ‘sciences of the artificial’). In many cases, this knowledge about the be-thinged human condition is complemented by knowledge about materials and forms.

This is not just basic knowledge about humans and their built environments; it is knowledge that is significant for complex social challenges that derive from the networked nature of agency, not the least of which is, sustainability.

## Design vs Art vs Performance

### *What we mean by this question?*

In the European and Australasian contexts, design entered the university system when art schools, conservatoriums and technical colleges were amalgamated with universities in the late 1980s. As a result all these domains, now called ‘the creative industries’ by neoliberals, confronted the demand for quality assured research productivity at the same time. Alliances were useful when insisting on types of research distinct from conventional academic research. As a result, ‘practice-based’ is often a contraction for ‘creative practice based’ (whereas in the US, the term ‘practice-based’ is more likely to refer to the non-creative industry higher education programs that entered the university at the same time – i.e., those associated with the health industry, ‘practice’ referring to ‘clinical practice’).

There are clearly similarities across art and design and to a lesser extent the performing arts: materiality, embodied skills, aesthetic judgment, an orientation toward newness and even uniqueness. However, there are also clearly differences: design’s orientation toward mass production and the primacy of usefulness are distinct from art’s – such that designs that are small run or problematize usability tend to be characterized as ‘design art;’ and the permanence of design is distinct from most kinds of performance.

This last point is important because Brad Hasemann has a very useful argument about the Performative needing to be understood as a third kind of research method, alongside the Quantitative and the Qualitative. Even though designs are more permanent than performances, it seems defensible to suggest that much design research is performative, or that, more radically, that designed artifacts manifest researched knowledge in the performed experience of their use.

What then are the merits or detractions of considering designerly practice-based research as one kind of creative practice-based research similar to art and performance.

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*Laurene's answer*

These are three different modes of professional and creative practice. There are interconnections between them, and many practitioners move between and at times integrate them, but at heart they are different. That said the term performance can reference performing arts such as music, dance or drama; it can also refer to knowledge that is performed to be created and in this way, many action-orientated fields do, do performative research but this is not performance.

Each of these can be differentiated based on their field, their intention, the knowledge precedents of the domain, modes of communication and validation. As such it is not acceptable to think that it is possible to slip between them as one. They are not.

*Cameron's answer*

I believe that it is important to respond to this issue with reference to a wide context. Making is an extraordinarily under-theorized aspect of human being, even moreso given that it is central enough to be one of the ways of characterizing humans (*homo faber*). Psychology and sociology pay only passing attention to why and how people make, though it is more central to anthropology and of course archaeology. The philosophers in the Western canon who even mention 'making' are scant: Plato wishes to repress makers where Aristotle is more respectful; Hegel is abstract whereas Marx is the first really comprehensive modern account of making; Heidegger is concerned about productivism though his student Arendt is clearer about the place of making in the human condition. In nearly all these cases, the paragon of making is always art-works. It would seem that there is, at least in the West, a repression of the making of useful everyday things, a marginalization of the craftsman, the artisan and the designer.

A parallel situation occurs in terms of 'use.' What it means for something to be useful, usable and used, as opposed to what

something is or means, is only relatively recently an issue for philosophers, psychologists and sociologists.

Given these situations, it could be argued that it is important, for a more comprehensive understanding of human being-in-the-world, that design, the making of things-of-use, be held apart from art and performance. Practice-based design PhDs are needed not only to mature the discipline and profession of design, but to broaden our very self-knowledge into areas that have been hitherto marginalized.

# Design vs Architecture vs Human Computer Interaction

## *What we mean by this question?*

Design is obviously a broad term, that nevertheless generally applies to meso-level or human-scaled things (jewelry to interiors). One version of its broadness lies in the question of whether architecture is a subset of design, or vice versa. The former suggests designing is the general art of planned making, where what results is either large scale – a building or even a landscape – or small scale – a chair or music playing device. The latter suggests that architecture has the diverse know-how to operate at all scales, architecting large-scale structures as well as designing smaller ones. A third option is that the design of handleable-sized things is quite a distinct process – because things at that scale, compared to buildings, tend to exist as multiples, exist for shorter periods, and, most significantly, have interactivity with their handlers as their essence.

The issue of the relation between design and architecture is important in relation doctoral research, because architecture's long-standing as a codified practice has given it an authority in relation to research and doctorates that design lacks. Despite, or perhaps in spite, of its history as a science, both respect to the engineering of buildings and algorithmic approaches to complex problem spaces, architecture schools have more recently used their strong position in the university to be leaders in practice-based research. Does the precedent that architecture has created allow for what is distinctive about design?

The breadth of design has also seen similar questions of relation/extension arise with respect to human computer interaction. Software engineering explicitly turned to design (we are thinking of Winograd's *Bringing Design to Software*), because of labor politics in Scandinavia or the rise of the personal computing market in the US. But being computer science, design was immediately methodologized as a component of research (first empirical user testing, then workflow analysis for requirements specification, now ethnography of latent needs).

Digital design, as compared with architecture, is grounded in dynamic interactivity. So is interaction design research, which has explicitly debated ‘research through design,’ a model or distraction for the research processes involved in design that is more analogue based, or less necessarily involving a digital processor?

*Laurene’s answer*

The links between design, architecture and HCI are deep and yet they are different. Professionally design is present and practiced in both architecture and HCI – design can be the link between the two, and a marker of difference. From a research perspective, it is essential that researchers understand the differences and are able to position their research within the appropriate context and approach. Issues of form, context, application and expectations of field will inform this. Research in architecture and HCI can be dominated by engineering or social science based methods and methodologies, it could be argued that design may be also. The undertaking of design research through design with the intention of creating innovative and critical design outcomes and insights is a different phenomenon. In building the field of design research it is essential that design embrace and extend its own approaches that are firmly situated in the practices of design, even when working in broader contexts such as architecture and HCI.

*Cameron’s answer*

In principle, I would insist on the distinction between architecture and design, especially in relation to research. Whilst buildings are used, it is instructive that architects rankle at the notion of building users (as opposed to occupants, or better, dwellers), and that there was no user-centered design movement in architecture (apart from the requirements for universal design). Buildings have less dynamic interactions – or when they do, they are always mediated through products: building management systems, windows, etc – than products (though perhaps not communications). So the nature of the research involved, and more importantly, the domain in which knowledge is generated by that research, is quite distinct for architecture as opposed to design.

In practice, architectural research, somewhat in reaction to the more phenomenological EDRA approach (Environmental Design Research Association) that is now considered dated by most schools, is very much focused on generations of new materiality and form. To my mind, architectural research can do this because of its more powerful standing in the university, whereas the less mature non-architectural design practices must move more away from these domains in order to establish their research credibility.

When talking of the relative immaturity of design in relation to the university, it is important to remember how recent computer science as a discipline is. The research activity of computer science, and so Human Computer Interaction, is distinct from that of design, not because it entered the university a decade or two earlier, but because a) it was located within or adjacent to engineering b) it was immediately a priority for government research funding, being the materialization of applied knowledge c) it was immediately involved in research partnerships with corporations.

Design within HCI research has always involved negotiating these conditions, with claims about its

1. Negotiating wicked problems with a futural openness
2. That would nevertheless concretize into specific proposals (for devices, systems, etc)
3. That were creative enough to remain beyond the contamination of market forces

On the one hand, this preserves the designerly qualities of design research, though perhaps too much, privileging them over other aspects of researching closer to qualitative knowledge-generating social research. On the other hand, these qualities were nevertheless always framed within very methodologically strict research projects as befits computer science. The discourse of interaction design research has always seemed to me to be like that of chaos theory: in the end it is claimed that what is chaotic is just indissociably complex, not truly random, just as research through design is designerly and yet in essence a methodologizable stage in otherwise regular projects.

## Artifact vs Text as evidence of research

### *What we mean by this question?*

(Note that we are distinguishing between the role of text as the appropriate form for manifesting design research (for examination) in this question, and the role of text in dissemination of the findings of the research to the appropriate (professional) audience in the next question.)

Criticisms of practice-based research often appear to derive from the accusation that practice-based research is just an excuse to avoid dissertation writing, if not reading. There is a persistent prejudice that knowledge – the outcomes of education – are (gradable) forms of written reportage, and that if practice-based research PhDs have reduced writing requirements, it is part of the continued erosion of our societal intellection. In less inflammatory forms, this concerns the extent to which a PhD is training to become an academic, a profession that involves extensive written communications even in creative industry teaching.

Conversely, if the premise of practice-based design research is that design practice is a kind of researching, then, it is argued, the submission for a PhD evidencing research should be the artifacts of that design practice, which rarely extend to sustained pieces of writing. There are pragmatics at different levels that constrain this proposition. At the most pedantic, institutions with a responsibility to maintain a record of the knowledge produced in the process of granting their highest degree often have anachronistic requirements to do with bound dissertations that can be lodged with library. Sending material for examination can also constrain what is submittable. More significantly, the capacity of faculty to evaluate non-textual artifacts, especially for their research quality and/or knowledge-containing-ness, often remains immature. Even in Design Schools, skills in formal design criticism (as opposed to pedagogical desk crits), especially in terms of demonstrated new knowledge, remain less than the discipline and the profession need.

There have been many proposals and institutional stipulations of the different forms of writing that might accompany artifactual submissions. These can be distinguished by when they occur:

a) research reports of contextual inquiries produced prior to comprehensive designing that brief the design process  
b) reflective practice reports produced during, or based upon notes taken during, designing  
c) exegeses produced after the designing, locating the significance of the outcome or

They can be distinguished by their nature:

1. Social research (a or b)
2. Cultural theory (a or c)
3. Action theories of designing (b or c)

### *Laurene's answer*

The term evidence of research is in many ways problematic. Does the term refer to proof that something was done, or is it calling for a means to document and communicate what was done within the context of a research investigation? In research terms there are direct links between evidence and rigor. The suggestion of a difference between text and artifact as proof that actions were undertaken that are rigorous, suggests that one of these is possibly more rigorous than the other. To my mind, any evidence of research being undertaken in the course of a study should be presented and documented in a manner that is most appropriate to what was done, and within an appropriate framework of the field of study. This is as true for an ethnography, a design project or a dance exploration undertaken through practice. It is not a case of one form being more rigorous or appropriate as research than another, rather it is a case of appropriateness. I do not expect a series of ethnographic interviews to be presented as a performance, but, it may be most appropriate to present them as film or image, either with or without text, as is appropriate and most clearly communicates what was done. It equally should not be done as a novelty; all documentation of research from equations to extended arguments should be aligned to research intent and context. It is my preference that a practice based or design submission be multi-modal including evidence through artifact, text and oral presentation. This mix of forms represents the various literacies of practice: making, critiquing and discussing.

*Cameron's answer*

Designing is always also a kind of 'linguaging' (the term is Winograd and Flores' via Maturana and Heidegger – see *Understanding Computers and Cognition*, Addison-Wesley, 1987): in other words, in the process of negotiating briefs and the patterns of precedents they invoke (the hermeneutic circle of designing), designers have to, and so do, name (metaphorically) their emergent – i.e., being-researched – design concepts.

In a straight activity-accounting, design is by a majority time verbal rather than creatively visual or physical in the studio. This is not just the pragmatics of negotiating with clients, fellow-designers, suppliers, manufacturers, etc. It is part of the process of realizing a creating. As with the title of a recent book, *Making is Connecting*; or more systematically, designing is always a process of Actor Networking. Much of that alliance-building is physical – getting this component to work that way – but much of it is also argumentative, with writing being a way of 'freezing' agreements (contracts).

As design practice does involve writing, practice-based research should involve writing – but precisely a diversity of writing, both at the primary and the secondary level.

Focusing on a diversity of writing foregrounds that writing is itself a design activity. Nevertheless, there is also a substantial literature (ironically) demonstrating that designs are themselves arguments: an artefact, communication, or environment makes claims about how people-with-designs like to live and work, drawing on more or less explicit general principle warrants, and the success of the design with users is a kind of evidence. So artifacts are not in principle distinct from writing as a form of argumentation and are crucial to design research submissions.

And yet, clearly artifacts do not speak for themselves; or if they do, it is with regard to their particularity, not the more generalizable knowledge that is expected of 'researcherly' design propositions. New modes of curation and exhibition are necessary to allow an audience to attend to the research

arguments artifacts embody. I have written schematically about this elsewhere (Tonkinwise & Kasunic “What Things Know.”)

## Artefact vs Text as means for dissemination

### *What we mean by this question?*

An assumption behind this question is that dissemination of research findings should be a required component of practice-based design research. This is not usual in other disciplines; many forbid previously published material to be submitted as part of a doctoral dissertation (unless the program is explicitly a PhD by publication). PhD programs that require publications during candidacy, as part of general training in becoming an academic, mostly refer to work on non-dissertation topics, such as the research projects of their advising faculty. Of course, publication of the outcomes of a PhD, in academic settings, is encouraged after completion.

Our question derives from the way in which practice-based research is often, and perhaps should be, practice-oriented, that is, directed at advancing or transforming the practice of design. Practice-based design research can perhaps create new knowledge about people (insofar as they interact with designs), but it primarily creates new knowledge about how to design (in changing social complexes). In that case, there is an imperative for those findings to be communicated to designers. To some extent, it could be argued that the quality of practice-oriented practice-based design research depends on the extent to which it succeeds in advancing practice, in which case, conveyance of the research to professional design communities would be an important test for the research.

But in that case, what is the best way of giving valence to practice-based design research for professional design communities. Academic papers are not conventionally part of the work-world of most designers, in which case, other forms of writing and exhibiting would be more appropriate to dissemination.

### *Laurene's answer*

The issue of artifact or text as means for dissemination is the

second part of the issue of evidence. In this my position is quite simple and clear. The form of dissemination of research and particularly PhD submissions must be aligned to the domain of study, the methodology that has been used and be the best means of communication possible. The aesthetics of the submission must support the argument. A submission should not be 'creative' or 'experimental' for its own sake; the form must support the intention of the research and thereby form part of the argument and evidence through form.

*Cameron's answer*

What is a particular to 'design thinking' is multi-modality: being able to sense material qualities through a drawing; being able to analyze the usability of an interaction from a video-sketch; capturing the experience of form in well-chosen neologistic title. It is not just that design research should be conveyed to designers using their own communication forms; it is that designerly research only exists multimodally, in between texts and artifacts, texts-as-artifacts and artifacts-as-texts.

Further, insisting on multimodality in dissemination means that dissemination is not something distinct from researching, but is another moment in advancing practice through the generation of new forms of dissemination.

If a PhD is training for an academic career, it should be noted that teaching is also inherently a multimodal activity, and will only become more so with pressures for media-rich educational experiences catering to disparate learning styles.

## Design research by the individual or in collaboration and/or with commercial partners

### *What we mean by this question?*

As per the dominant individualism of our modern societies, degrees are awarded to an individual who must sign declarations that the work is his and hers alone. And yet the most espoused terms in higher education are ‘interdisciplinarity,’ ‘collaboration,’ and ‘teamwork.’

Having been birthed in modernism, design continues to be overshadowed by the myth of the sole creative practitioner. Nevertheless, codesign and participatory design, as well as design-as-facilitator and lead-user innovation driven design and crowd-(re)sourcing are now dominant. Clearly individual designers need to find a way to identify their roles in these kinds of processes, so that they can take responsibility for them. However, it is widely recognized (even in popular non-fiction such as that of Stephen Johnson, Malcom Gladwell, and Lewis Hyde) that ideation is never singular, such that it is often a travesty to say that idea has an originator-owner.

A particular issue for practice-based design research, especially when it is also practice-oriented is when the practice upon which the research is based is a commercial professional one. There are not only the usual problems associated with partnerships between universities and businesses (access to data, what can be published, intellectual property of the outcomes, constraints arising from regulations of not-for-profit universities), but, in the case of design, a creative practice with acknowledged tacit and distributed expertise (the ‘style’ of the processes and outputs from a firm), there is the wider implication that the knowledge generated is inherently collective – i.e., should the whole firm be awarded the doctorate for having explicitated its expertise?

*Laurene's answer*

The contexts for design PhDs is rapidly changing. Initially many design PhDs were individual undertakings either as a design studies/theoretical investigation or through reflective practice. Over the past 5 years there has been an increase in the number of PhDs being undertaken in the area of interaction design, often including supervision or funding from larger scale projects and there by being 'applied' in their focus. At the same time there has been an evolution in design students undertaking studies as embedded researchers either within their own design firms, organizations or other external organizations, this research is both applied and may be classified as collaborative.

Typically design practice occurs within the client/commissioner context and is done in conjunction with either other designers or professionals. Design research undertaken through practice needs to be open to such configurations of investigation. This is not particularly unusual in other domains such as business where such research would be undertaken in an Action Research methodology. Establishing protocols for what is expected, ethics, roles and boundaries between PhD student and others, is essential when working in this way. How this is done should be included in submissions.

*Cameron's answer*

Two brief points:

Professional design associations have always struggled when dealing with the fact that designing is inherently intertextual – the hermeneutic circle of precedents and patterns on the one hand, and the 'inspiration' strategies of bisociation, transposition and homage. A practice-based research program, producing artifacts that explicate their creation, should have the ambition of developing the citational culture that professional associations have failed to create.

The issue of authorship is no less in non-commercial contexts. Perhaps moreso, quality 'social design' involves thoroughly empathetic, facilitative work. As Ezio Manzini has indicated in relation to the DESIS initiative, the job of the designer is to find good idea in the community, and to increase their scale without

betraying their original quality. In the case of the 'design for social innovation' research then, the community should receive the PhD.

## PhD as Research training (coursework)

### *What we mean by this question?*

In European and Australasian countries, the PhD is a research-only degree program: there are stipulations that 25% or less of the period of the candidature should involve coursework; the candidate should be primarily engaged in a research project over the whole of the candidacy. As a result, research training is usually a pre-requisite for entry to a PhD program (in the form an undergraduate honors year or a Masters program in which there were research methods courses and a thesis) – though there may be some top-up or specialist research methods courses within the first year. Nevertheless, the degree program is explicitly categorized as ‘research training,’ in which case, the PhD is an example of learning-by-doing: one demonstrates a capacity to research by completing a large-scale research project.

In US parlance, European and Australasian PhD candidates are from the outset ABD (‘all but dissertation’ – i.e., there is no ‘all’). US PhD coursework, when it is not on substantive areas of the discipline in which the candidate is expected to have the expertise to pass ‘qualifying exams,’ tends to concern research methods. This is because, while an MFA is a terminal degree with a larger scale thesis project, that project is conventionally described as ‘inquiry-led’ rather than ‘research-based.’

As befits the more audit culture of Australasian, European and Scandinavian higher education, there are official documents enumerating the attributes of PhD graduates with regard to things like conducting research.

An issue that arises is whether a PhD is only training in academic research, or whether it is also training for research positions in business and government or not-for-profits.

### *Laurene’s answer*

As a research degree the PhD in an Australian context is referred to as a ‘research training’ degree. This is a term that I have always

found problematic, whilst also being aligned to the pedagogic premise of this classification. The PhD is a research degree, and graduates are novice researchers. Through the processes of their inquiry a student develops expertise not just in the content area of their study, but also in the practices of research. These research practices are typically conceived of as methodological (how to do an ethnography, experiment or the like), but they are also in the domains of critical thinking, reflexive knowing, argument formation, and the ability to position their research into a broader domain.

When working in the field of practice as research, and with students that may well be leaders or experienced professionals, the idea of 'training' becomes a little uneasy, especially when considered from a content perspective; and yet a PhD is a research training qualification. Graduates of such programs should be able to undertake research in manner aligned to their area of inquiry. What this means and how it is realized is as varied as the diversity of PhDs which are undertaken yet there are some core competencies: ability to design and undertake a research study, position the research into the field, critical thinking, understand the ethical dimensions of an inquiry, disseminate outcomes in an appropriate manner for example. Typically institutions provide field specific courses to support the development of a student in this way in conjunction with the learning from the supervisory team. The inclusion of design into a PhD context and practice as well, means that new kinds of courseware are required, ones that elevate design and practice as scholarly activities that can perform and be evaluated as such. With this graduates of programs should also graduate to scholarly practitioners, able to undertake research in practice. This is true for PhD graduates from all domains of inquiry, whether they go on to work in the university, private or government sectors. For experienced practitioners who elect to undertake a PhD through practice at their own expense, their engagement with research training can also be articulated as extended 'professional development.'

*Cameron's answer*

If it is perhaps true that designing as a practice has become

more research-based as the situations it negotiates increase in complexity and wickedness. As design firms hire anthropology PhD graduates, most design schools, especially those that are not part of wider research-active universities, are playing catch-up with research methods and tools education. It is both appropriate and timely that PhD programs in design be the source of leadership for research-based designing practiced in industry but also taught at other levels of design education.

## Ethics/IRB in relation to design research

### *What we mean by this question?*

Part of research training, particularly in academic contexts, concerns understanding, and taking responsibility for, the ethical implications of research. PhD projects are therefore required to have comprehensive approval from Institutional Review Boards.

However, design-based research often does not conform to what is expected of research projects: intervening to understand, rather than understanding before intervening is common; not having a clear hypothesis, or moving to test a hypothesis generated abductively without clear rationale, or hoping to be surprised by the outcome of a hypothesis rather than getting an expected result; or more generally, valuing failure. In addition, these generative research strategies are often not recognized as valid methodologies by other disciplines' representatives on Review Boards. Do practice-based design PhDs then require distinct review processes?

### *Laurene's answer*

It is expected that graduates of PhD programs will be able to undertake ethical research investigations. At the same time many design researchers hide behind notions of 'creative or artistic' research to exempt them from undertaking an IRB process – either for approval or in working with participants. This is unacceptable ethically. It also ensures that the boundaries around ideas of seriousness and quality through a framework of difference continue to be enforced. Design research is not special, it is particular, and it should operate in an ethical manner in the same way as all other domains of research.

### *Cameron's answer*

I would like to respond tangentially, but in a way that I hope reveals that much more is at stake in this question than university bureaucracy.

One of the first and clearest indications that sustainability was a

matter of negotiating probable risks rather than a project with a determinable goal was the adoption of the Precautionary Principle. However, recently there have been several strong rejections of the Precautionary Principle by pro-sustainability (they claim) groups; their argument is that the risk of global calamity is so great that it justifies radical risk-taking when trying to find ways of averting that calamity. What is at fault here is this 'either/or.' Tackling the issue of being responsible with creative practice-based research should be reframed in the context of this wider problematic. That is to say, determining how design research can be previewed for its ethicality means having a position on how innovating can be nevertheless precautionary.

Obversely, social designers, guided by empathetic immersive research often risk wanting to deploy immediately their skills to make a situation better. In many situations, taking the time to research – exactly as a PhD demands – allows more structural solutions to be discovered. This space for 'moral imagination' is usually the opposite of the concern of Institutional Review Boards, which are worried about immediate impact.

## PhD as teacher training (courses)

### *What we mean by this question?*

In the North American system, PhD programs, following the romantic German university model, aim to accredit candidates as academics. As a result between 40-60% of the candidacy is spent taking advanced courses in the discipline of the PhD, which are followed by qualifying exams that attest that the candidate has the content-knowledge expertise to teach the discipline. Outside of the US, candidates are expected to enter PhD programs already having mastery of their discipline.

Good PhD programs also take responsibility for the form-side of being a professor, teaching candidates how to teach the discipline effectively. In other programs, candidates teach lower level courses under the guise of gaining teaching experience when often they are merely a cheap labor source. There is considerable attention at the moment in the US being paid to the precarious economic status of PhD students, Post Docs and Adjunct Faculty, what is also known as casualization of higher education.

A particular issue in relation to practice-based design research concerns studio-based design education. PhDs in Design that are not practice-based tend to attract candidates with less-strong design practice experience, making them less suitable for teaching studio classes (as opposed to more lecture/seminar-based Design Studies classes). A reason to promote practice-based design research PhDs is to create more opportunities for courses to be taught by studio leaders with a strong commitment to practice. This also allows a PhD program to provide more formal instruction in how to teach a studio-class – something that is rarely done: usually it suffices to have learned how to teach a studio by having suffered as a student in a studio.

### *Laurene's answer*

To my mind the PhD is a research training degree and the core focus of what is undertaken or taught should be in relation to

building the student's capacity to undertake research. Learning to teach is a completely different activity.

In North America there is the tradition of the graduate student being employed as a teaching assistant, and the more experienced the student becomes the more independence they are given in the classroom. In this process experienced professors typically mentor them. This is good model of class based mentoring for teaching, and is similar to the kinds of training that teachers go through in education degrees. Whether such a process and practice is aligned with the pedagogic premise of research training degree seems at odds to me. It may also lead to students being selected to programs not just because the learning opportunities and fit for doctoral programmed, but because of their capacity to fill casual teaching requirements. The idea that a PhD can be a teacher training degree is also premised on the expectation that graduates will pursue a career as a professor. This is not always the case especially if PhD students are experienced practitioners undertaking the degree not with an academic career in mind, but rather to advance their capacity to be leading practitioners in industry.

### *Cameron's answer*

If practice-based design research is also practice-oriented, it is essential that PhD candidates (learn to) teach design, so that a) they learn to make their tacit expertise explicit b) their practice innovations can be tested on emerging designers

To my mind, there is always a need to bring teaching and research in closer proximity (without reducing research to scholarship of teaching) given the economic and power structures that divide them.

# The terminal degree for design educators?

## *What we mean by this question?*

The accrediting bodies for North American art and design schools (NASAD, ACUAD, CAA, who are non-binding – universities with design schools [like CMU] – can accredit their design degree programs as part of their general accreditation [through bodies such as Middle States]) continue to affirm that the MFA is considered the terminal degree in art and design, meaning that this is the minimum-level, but to some extent the maximum-level, qualification that accredited schools should require of faculty they hire. These bodies have declared that PhDs can be expected where the role has a significant research component – implying that regular faculty positions do not have research components.

In all other countries, PhDs are now the minimum qualification for design faculty appointments.

The rationale comes from the fact that these accrediting bodies have a base belief that design education is primarily an apprenticeship with practitioners in a studio. The MFA accredits those practitioners as having mastery of their practice (evidenced by a thesis project), and so capable of teaching studios. This rationale will be impacted by practice-based design research PhDs.

## *NASAD Handbook 2012-13 excerpts*

### Section II. E. 1. b. – Terminal Degrees

(2) Teachers of any studio subject normally are or have been deeply involved as practicing artists or designers in the particular disciplines or specializations they are teaching.

(3) NASAD recognizes the Master of Fine Arts as the appropriate terminal degree for studio faculty. At the same time, the Association recognizes that some highly qualified artist-teachers may hold other academic degrees; others may not hold any academic degrees. In such cases, the institution should base appointments on experience, training, and expertise at least

equivalent to those required for the Master of Fine Arts degree in the appropriate field.

(4) Academic degrees are a pertinent indicator of the teacher's qualifications for instructing in theoretical, historical, and pedagogical subjects. In general, the Doctor of Philosophy and comparable doctorates are the appropriate terminal degrees in these fields; however, creative work, research, and publication are indicators of a teacher's qualifications, productivity, professional awareness, and contribution to various aspects of art/design and art/design-related fields.

#### Section XV. B. – Doctoral Degrees

1. 1. Purpose. Doctoral degrees are earned only in graduate programs that emphasize research or scholarship in some aspect of art and design. Section XVI. C. – Degrees that Combine Practice and Research Orientations
2. Basic Requirements for Doctoral Programs. Doctoral programs with multiple core objectives in studio and research or scholarship require the equivalent of at least three years of full-time graduate work. Procedures and requirements are determined by the institution.
3. Design Degrees
  - Degrees combining studio and scholarship shall prepare professionals who develop research studies and utilize findings in professional design practice.
  - Coursework and research projects for this degree category should include studio work, such as designing and testing prototypes and the execution of demonstration projects that illustrate design research concepts or methodologies.
  - Final requirements for the doctorate should include a dissertation that has a significant project component that is of relevance to either the study or practice of design.
  - Research/practice programs should be led by faculty with expertise in design research. In acknowledgement of the interdisciplinary nature of design research, it is appropriate for the student's coursework and final project to involve faculty support from relevant disciplines outside the specific area of design specialization.

*Laurene's answer*

The naming of a degree as being terminal is a USA phenomenon that has evolved over time. And as new levels of degrees are awarded faculty are required to have them in order to be able to teach, or more importantly in a North American context, obtain tenure. Presumably at one point in time a BDes or BArts would have 'equivalence' based on professional practice.

Should the MFA continue to be the terminal design degree in the USA is a topical question. Internationally a PhD can be the requisite for any academic position in any domain. From drawing to design or aerospace science this is the situation for all new hires in Australia. As outlined in the NASAD guidelines it seems that North America is in a state of transition, for as long as Design PhDs are rare it could be argued that the MFA should be retained as the terminal degree. Especially for faculty that are in the area of practice, and who's only PhD options may be through theory or studying in a different discipline in order to be awarded the degree. Such a phenomenon does little for building the research capacity or more advanced knowledge within design that a PhD does. This said the PhD and research capacity through theory or praxis is increasingly the international norm for academic design faculty. This has two implications - 1. International appointments are more likely to be higher qualified than local faculty, and 2. North American faculty will be limited in their ability to work outside of the USA due to a lack of academic qualifications.

*Cameron's answer*

If PhDs became the terminal degree for design faculty in North America there are at least two significant issues. Existing faculty might be required to undertake PhDs. Current PhDs are full-time residential degree programs for 3-5 years). As this format would be prohibitive for existing faculty, alternate modes would be necessary.

PhDs in North America are fully funded where MFAs are full tuition degree programs. To increase the number of Design PhDs to meet new faculty requirements would require significant changes to PhD business models.

## Practitioners as students

### *What we mean by this question?*

Much of what is at issue with doctoral design research degrees concerns the fact that design remains a profession that is taught primarily by apprenticeship even at a university. Studio-based learning means practicing design with a practicing designer. Since, most explicitly in the North American context, PhDs are the degree programs training candidates in the practice of being an academics, there is a concern that design academics with PhDs will no longer be design practitioners. Practice-based PhDs clearly correct this situation, though with the converse risk that design academics with practice-based PhDs will no longer be sufficiently academic.

To what extent then can one be a practicing designer and a practicing academic at the same time as is perhaps desirable for practice-based doctoral research? Pragmatically, a PhD usually involves withdrawing from professional practice for at least 3 years to undertake full-time academic study. Getting project overlaps between professional work and research work is possible and sometimes desirable, but raises issues questioned above (ethics, individual vs collaborative, etc).

There are also important power issues that arise with practice-based research: a doctoral candidate is initially a novice with respect to research, though he or she becomes the world expert in their topic on completion; in practice-based research however, the candidate is less of a novice initially, perhaps knowing more about practice than their academic advisers (though less about how to frame, evaluate and extend that practice).

### *Laurene's response*

In some ways it could be argued that all design PhD students are practitioners, as many are or have been engaged in professional design practice prior to undertaking study. This is the norm even in undergraduate degrees. I do not accept the position that the PhD is purely an academic training degree. In my own experience many of the students that I have engaged with are practitioners, and practitioner researchers and educators. I have

known graduates who have undertaken doctoral studies with the intention of advancing or re-contextualizing their own design practice, and have chosen to engage with the university as a means to have extended, collegial, critical explorations in fields of interest. Additionally the rise of design research and design researchers in industry marks the way for new design careers where PhDs are the base educational expectation for employment. This is a particularly vibrant aspect of having doctoral programs in design; it provides a means for universities to engage with industry practitioners in reimagining and creating fields through design research.

### *Cameron's response*

A short comment in relation to the taught and teaching components of PhDs in North America. One of the most interesting cohorts going through the practice-based PhD at RMIT were mid- to late-career practitioners, undertaking PhDs (often by invitation) not to become academics, but merely to reflect upon, revitalize and redirect their practices. Requiring such candidates to take taught courses would have been inappropriate – in fact, it would have been preferable to have them teach, had they had the time.

Because of the presence of these kinds of candidates, doctoral degree programs are two way learning environments. It is not just the candidates who are learning from academics expert in research practice, but academics learning the practice state-of-the-art from the candidates. The money and time economics of US PhDs are note well-suited to these kinds of closer interrelations between practice and academia via practitioner-PhD-candidates.

## Duration, process and examination of the degree program

### *What we mean by this question?*

European and Australasian PhDs – as research-only – are a minimum 3 years full-time. Governments funding those PhDs pressure universities to attain completions within 4 years. The process conventionally involves having a Principal Supervisor who one meets with at least monthly, perhaps Co-Supervisors; a confirmation of candidacy review by a panel other than Supervisors normally occurs after the first 6 months to 1 year; and then completion follows an examination of documentation by, and usually an in-person defense before, a panel of experts in the topic of the research other than the Supervisors with a majority external to the institution (as well as a more public audience). European and Scandinavian institutions often also have more formally identified external ‘respondents’ for the in-person defense, and ‘external examiners’ who annually examine the examination process.

By contrast, North America PhDs – as academic training – tend to be 4-5 years with 1-2 years coursework, and then 2-3 year dissertation periods. The latter usually run longer though stipends for candidates usually end of 2-3 years of being ABD. The process conventionally involves convening a Committee of Advisors who approve the research project; the candidate should be in regular contact with all advisers, meeting at least monthly with the Chair of the Committee; completion follows an examination of the documentation by, and an in-person defense before, the Committee of Advisors (as well as a more public audience).

In short, where non-North American institutions insist that doctoral research be examined on conclusion by people who attest that they have had no contact with the candidate over the period of the candidacy, so that their peer review is unbiased, North American institutions have doctoral research ‘signed off’

as meeting the requirements of the degree by the people who have been advising the process throughout.

Practice-based doctoral research programs tend to have more regular external reviews. At RMIT, the process involves an in-person review of the progress of the research before an external panel of experts (as well as a more public audience), every 6 months of the candidacy. Key milestones in those reviews are the first confirmation of candidacy review and the final 'penultimate review' that signs off that the research is now ready to be externally examined. Practice-based doctoral research, in addition to the documentation and the in-person defense, usually also involves some kind of exhibited work.

### *Laurene's response*

Having structures in place to help support and maintain momentum and to build a research community is important. In my case at RMIT this is done through bi-annual graduate research conferences that are public critiques of student progress in their study. This I think is important for design programs and is an academic practice that extends and relates to most people's undergraduate learning experience, and project work in practice. This is also a means for creating critical mass, and representation to those outside of the university of the research projects and contributions that design researchers are in the making.

There is no one model for PhD examination globally. To my mind it is essential that PhD submissions be examined by external authorities in the field of study, be they academics even in undergraduate degrees. I do not accept the position that the PhD is purely an academic training degree. In my own experience many of the students that I have engaged with are practitioners, and practitioner researchers and educators. I have and/or research active practitioners. Due to the time that a doctoral investigation takes, and the close relationship that is formed between student, advisor/supervisor and school, an internal examination has the capacity to be less rigorous than an external. The role of doctoral research is to contribute to the field, have a broad spectrum of impartial reviewers is essential if doctoral research is to be seen to 1. Be unbiased and critical,

2. Be relevant to an external community outside of the awarding institution.

*Cameron's response*

The temporality of a PhD is unique. Apart from writing a book or a very large-scale artwork, it is rare for an individual to spend 3 years on one project (even academics). In an accelerating world, this form of slow, deep learning is perhaps important to preserve.

Practice-based research does represent novel epistemologies that should challenge the university. Assuring the quality of the disruptive innovation it represents is important. Regular reviews of progress and external examination are essential.

More importantly, regular reviews of progress create a community of practice with transparent benchmarking. This is exactly what will allow a convergence between research and practice, with practitioners being apprenticed in research by watching other candidates progress.