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DESIGN RESEARCH EPISTEMOLOGIES I
- Research in Architectural Design

AALBORG UNIVERSITY

DESIGN RESEARCH EPISTEMOLOGIES I

Department of Architecture, Design and Media Technology

Aalborg University

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The aim behind this publication is twofold. First of all this is an attempt to reflect upon the nature of the knowledge that currently is being produced in the different PhD projects hosted at the Department of Architecture, Design and Media Technology, Aalborg University. During some years now the PhD research has been organized within the Architecture and Design PhD Lab (ADPL). Now the time has come to put the pen to paper and actually reflect across a wide range of very diverse types of architecture and design research projects. Secondly, the aim is to show this research and in particular its epistemological basis to the external world. By this is partly meant the rest of the research environment at the Department of Architecture, Design and Media Technology. But obviously also to the many research networks and professional contacts that collaborate with the Department. Amongst such 'external' target groups are also students of Architecture, Design and Media Technology here at Aalborg University and elsewhere.

The individual contributions has been written by the PhD students and then discussed in the ADPL forum. There is a common structure to all of the contributions. Thus they take a stance on the following issues: project title and author, the research question, the methods applied, the theories consulted (or the state-of-the-art theory horizon), and the epistemology of the PhD research itself. Seen this way one could argue that each PhD student was asked two fundamental questions. Firstly, what sort of methods and theories are in the field external to your project? Secondly, what sort of knowledge contribution is your project an example of? Needless to say such questions are very complex and need much more attention to be fully dealt with. However, starting up this reflection it is my firm conviction that the PhD candidates slowly but gradually increase their awareness of issues and questions that take even experienced researchers a long time fully to contemplate (if ever).

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July 2010

1. Design research and knowledge - introduction to Design Research Epistemologies

 ***BY OLE B. JENSEN***

The contemporary world of design knowledge and practice is wedded to increasing academic ambitions. This the case regardless of whether one see the issue from the administrative and bureaucratic vantage point of attempting to increase the number of PhD stipends and externally funded research projects, or if one looks from within the design practice itself. As part of a general trend in society professions increasingly become dependent on the production of new knowledge. Needless to say (and this is perhaps a less obvious point), the design professions might also have a great deal to offer in terms of actually contributing to the production of knowledge. Thus the debate about 'research by design' and 'design by research' seems open and receptive to new insights.

A word of caution is in place here. First of all, this small contribution to the reflection on what sort of knowledge design research create is by no means all inclusive or comprehensive. It is a momentary glance at the present production within PhD research hosted at the Department of Architecture, Design and Media Technology¹. Moreover, the editor and author of this introduction chapter is not a designer. Rather I am a sociologist with a strong interest in architecture and design. However being an active researcher and teacher within the field of urban design I might qualify to at least draft the rough contours of the map guiding this explorative trip. One could even argue that design research is too important to be left to designers alone (but that is another story).

¹ It should be noted that by January 2010 the Department of Architecture and Design was merged with the Department of Media Technology. The main part of projects described in this publication therefore lies within the research areas of the Department of Architecture and Design. Needless to say, the future holds promises of even more exiting collections of projects when the merged research units start feeding into the same PhD network.

Even though this publication is encouraging much more positive interpretations of the situation we will take point of departure in the challenge meeting design research:

'Architectural academics do little research; neither they nor the profession find it relevant. Indeed, there is often a positive hostility to the very idea of this most intellectual and academic of activities, for, of course, designing buildings – not publishing papers – increases the architectural academic's symbolic capital' (Stevens 1998:172)

This evaluation coming out of a Bourdieu-inspired analysis anchored in the social sciences may not have so much credit in the design community, but also the design theorist and architect Christian Gänshirt point to this challenge:

'Astonishingly enough, even today architects, and particularly those who see themselves as designers, make little of the original university idea of combining teaching and research' (Gänshirt 2007:10)

This perhaps pushes it too far. In fact many contemporary architectural and design companies have research divisions and an increasing number of successful practitioners engage with the academic world either via conferences of teaching associations. Furthermore, some of the new 'wild' contemporary companies seem to work with a playful attitude that deliberately collapses the design and the research fields into one experimental and very reflective perspective. The best illustration in Denmark at this moment is to be found in the work of 'BIG' (BIG 2009). However, the quote from Stevens does contain a grain of truth and thus illustrates some of the resistance from architects and designers to become academic researchers. However, the case of BIG suggests that designers may apply theories (or at least analytical concepts) derived from the latest research in order

to become innovative and competitive without losing sight of being creative.

What seems to be a real issue though is that *'design is so centrally significant in today's society that research into it can no longer be neglected'* (Gänshirt 2007:11). This should not mean that the trenches between design practitioners and design researcher should deepen, but rather that both parties (a crude simplification of course to see only two parties) agree upon the fascinating opportunities for creating new research projects across these old and unfortunate divisions. One way into such a dialogue is to acknowledge that designs made by academic staffs at university programs might be seen as equivalent to academic research (Gänshirt 2007:12). Obviously there might be requirements to the reporting (i.e. peer review journal etc.) but it should be possible to think of design proposals as 'experiments' that may be reflected upon in such a manner that it meets the academic reporting requirements. The issue we are facing is thus:

'How do research and design relate to each other? What can research do for designers? Both activities produce knowledge, but of different kinds ... So, on the one hand, design is not a science in its own right, but draws on technical and scientific insights as well as artistic skill and ability. On the other hand design, although not a science, can be the object of systematic research' (Gänshirt 2007:17)

Perhaps the contributions to this volume are less of what one may think of as 'design' oriented in the sense that these are fairly standard academic research projects where the end goal is not some artefact or design but rather new knowledge about such themes. However, this is partly due to the profile of actual research done at the Department. But importantly this is an indication that design research and the hereto related epistemologies should be understood more broadly to also include knowledge going into the foundation of the

design process (as for example when GPS research becomes a precondition for urban design practices). Davies posed the question; *'Why Do we need doctoral study in design?'* (Davies 2008). The answer is affirmative and that we most certainly should have doctoral studies in design. The reasons have much to do with the rising complexities of design and its societal context, issues that will be in focus in the following.

From Germany the Danish university system inherited the Humboltian ideal of 'research based teaching' (Gänshirt 2007). This way of organizing universities meant a new relationship between researchers and university teachers that had not prior been institutionally wedded (Stevens 1998:182). Furthermore, this means that research and knowledge production is at the heart of the matter even when we are talking teaching curricula (and actually now also a formal requirement to become accredited by the national accreditation board). The programme in Architecture and Design is a programme in civil engineering with the option of graduating as either with an engineering degree or a scientific degree. What is important here is the fact that the creation of this programme was seen as rather controversial by the Danish architectural and design establishment in the mid 1990's. However, this is an insular and backwards perception as many countries in the world do have design and architecture within the engineering programmes (from the UK to Germany and Norway to mention but a few). The hallmark of the programme in Architecture and Design is a combination of architectural, aesthetic and design oriented skills with the technical disciplines of engineering. The label for this particular mix is *'Integrated Design'* and is closely related to the didactic model of *'problem based learning'* (Knudstrup 2005).

Coming out of this institutional context I have attempted during the last 5 year to present students and fellow researchers to the idea that theory and practice by no means are separate realms (or at least they should not be). Apart

from the proverb that there is *'nothing a practical as a good theory'* (Jensen 2004a) the deeper point is to acknowledge how embedded into concepts and language (and ultimately theory) our multiple contemporary professional practices actually are. We are, to speak with the later Wittgenstein and the 'speech act theory' of Austin, inherently living in a language-practice nexus of much higher complexity than imagining concepts and theories to be 'images of reality' (Austin 1962, Wittgenstein 1953).

*What is design?*²

The societal transformations during the last three to four decades make it inevitable that design and research activities are closely related. Not at least since the programs of design educations often are university programs and thus intimately linked to research environments. We may start by noting like Lawson that 'design' is both a noun and a verb, and refers to both processes and products (Lawson 2006:3). What seems common to design activities is furthermore that they in one way or the other aims at making an intervention, an act or at least an imprint on the world. Design is an interventionist field at some point (or at least it may become so if the projects are being realized).

Obviously the definition of design and thus ultimately of design research will not be sufficiently dealt with within the confinements of this chapter. There are close to as many thoughts and standpoints on this as there are institutions and environments hosting design research and educational programs.

² I deliberately avoid the discussion about the relationship between architecture and design as two distinct fields of operation regardless of that this is by no means an innocent distinction (Lawson 2006). The merging of the Danish Design School and the Royal Academy of Arts makes this difference more than conspicuous indeed.

Moreover, the definitions vary not only within fields of for example architecture, industrial design, or urban design but are of course also dependent on which of these particular fields one focus on. There are generic definitions to be found and there are common grounds between some of these fields of design. Here we shall only scratch the surface and invite a few definitions into the argument for the single reason of fuelling our reflection upon the research related to these types of design.

According to Webster's dictionary *'design'* reaches back to the Latin word *'designare'* which means to *'mark out or designate'*. Likewise the Oxford dictionary points towards *'design'* as a verb implying *'to set something apart for someone, to intend, to make an imaginary sketch ...'* (Shane 2005:104). As mentioned; this is not the place to unfold a comprehensive design discussion. Rather I shall present a few definitions as point of departure (realizing of course that the selection of these will say more about my limited horizon than about the field of design itself):

'Design: The deliberate shaping of the environment in ways that satisfy individual and societal needs' (Norman 2007:171)

'The conscious process to develop physical objects with functional, ergonomic, economic and aesthetic concern' (Rune Monö, in Molotch 2005: 263, note 1)

'Designing means devising a form for an object without having that actual object in front of you' (Gänshirt 2007:57)

'Design is the playful creation and strict evaluation of the possible forms of something, including how it is to be made. That something need not be a physical object, nor is design expressed only in drawings. Although attempts

have been made to reduce design to completely explicit systems of search and synthesis, it remains an art, a peculiar mix of rationality and irrationality. Design deals with qualities, with complex connections, and also with ambiguities' (Lynch 1980:290)

From those four different statements there may be inferred some common agenda after all. Indeed the '*peculiar mix of rationality and irrationality*' means that we are into a cross-disciplinary territory and furthermore that we are facing a creative field of solutions to a number of practical problems in the world. Some of these even with a strong ethical dimension to them as the discussion about the political and normative dimension to design reaches from socially concerned projects like '*Design like you give a damn*' (see <http://architectureforhumanity.org/>) to explorations of the meaning of design to the public good in general (Erlhoff, Heidkamp & Utikal 2008). At least we may say that:

'The question 'What is design?' turns out to be a fundamental one, to which there is no conclusive answer, something Flusser would call a 'riddle to be deciphered' – in contrast to a soluble problem' Gänshirt 2007:52)

Design relates to a practice indeed, but there must be some sort of intellectual and reflective dimension to this as well. Obviously this is the case in the 'birth' of the idea or at least in its intellectual processing. As Karl Marx famously said:

'A bee puts to shame many an architect in the construction of her cells but what distinguishes the worst of architects from the best of bees is this, that the architect raises the structure in imagination before he erects it in reality' (Marx 1887/1972:233)

Another route into the discussion might follow from exploring what is a '*design problem*' instead of trying to define design on its own. One such route was taken by Alexander who defined a '*design problem*' like the following:

'It is based on the idea that every design problem begins with an effort to achieve fitness between two entities: the form in question and its context. The form is the solution to the problem; the context defines the problem. In other words, when we speak of design, the real object of discussion is not the form alone, but the ensemble comprising the form and its context' (Alexander 1964:15-16)

One obvious fault (or at least limitation) to these definitions is their exclusive emphasis of the physical. Needless to say processes, institutions, virtual worlds and much else are 'designed'. This would then have to be to first qualifier; that in order for these scattered definitions to create some common denominators one should broaden them to also include the realm of the immaterial. Both architects and urban designers may also embark on immaterial designs in their practices, as do the field of '*interaction design*' which moves beyond a clear distinction between the physical and the virtual (McCullough 2004). What does fall in common though is the very general condition of '*giving form*' to not yet materialised objects (in its widest sense of the word):

'We believe that the designer should be able to design anything, "from spoon to the city" because the basic discipline of design is one, the only things that change are the specifics' (Lella and Massimo Vignelli, in Gibson 2009:17)

So regardless if one is engaged in the design of service systems, virtual worlds, artefacts, furniture, buildings or urban spaces there seems to be a common set of issues related to the practical tools as well as the theoretical concepts used (Gänshirt 2007). Moreover, we may start to reflect upon the nature of the research theories and methods needed for engaging with such a plethora of practice fields. Here less is written, and therefore the publication at hand may also serve the purpose of inviting to a discussion about the content and meaning of 'design research'.

What is design knowledge and design research?

Lawson poses the question '*is there such a thing as 'design knowledge'?*' (Lawson 2004:1) and argues for the complexity and multifaceted dimension of the issue. The designer's knowledge is naturally wedded to the representational techniques and the practical tools at hand (Gänshirt 2007, Lawson 2004). Here we shall not be able to take this interesting discussion much further than to acknowledge that the tools, theories, and methods of any professions in a profound way creates the '*horizon of possibilities*' of that discipline in no simple way. Here we shall have to pay more attention to the knowledge frames and the relationship between theories/concepts/abstractions and the architectural/design practice.

The notion of 'epistemology' used in the title of this publication point less at a strong 'theory of knowledge' than to the definition hereof as the field of reflective enquiry into the conditions for knowledge creation wedded to the particular fields:

'Scientists made explicit not just their results but also their procedures. Their work could

be replicated and criticized and their methods were above suspicion. How nice it would be if designers followed such a clear, open public process!' (Lawson 2006:28)

At times the field of epistemology goes under the name of '*Theory of science*' or '*Philosophy of science*'. There is much complexity and difference to discuss under such diverse headings. However, in this context we shall apply the notion of epistemology as; *the self-reflective gaze that increases our understanding of what we actually do whilst embarking on the production of knowledge*. Since the writings of Vitruvius (2009) the multiple skills and types of knowledge needed for a professional designer has been clearly articulated. However, the technological complexity of contemporary society and the diffusion of scientific and research-based knowledge into all walks of life have increased the relevance to the reflections upon the status of the knowledge used and produced in relation to design.

The knowledge relied upon and produced by the designers in general may be categorised in many different ways; according to the level of abstraction, the influence of methods and technologies in the knowledge production, the application and intervention modes when actually using the knowledge etc. Knowledge may be embodied into a practical capacity to do things in the world (like creating a model or a drawing) or it may be dependent on technical knowledge of scientific nature (as when the designer deals with adequate dimensioning or choice of material). Certain types of knowledge are handed down generations of practitioners by worth-of-mouth whereas other types of '*codified knowledge*' is found in technical manuals of encyclopaedic dimensions like the seminal Neuftert's collection of architects data (Neuftert & Neuftert 2000). The research done by Donald Schön arguing for an understanding of professionals as '*reflective practitioners*' is another relevant framing that acknowledge the subjective assessments and the situational dependencies of various

knowledge frames by the practitioners (Schön 1983/2001). The Dreyfus leaning model illustrating that the novice clings to manuals, codified knowledge, and objectified rules whereas the expert relies much more on intuition and (well informed) guessing is yet another illustration of the complexity of knowledge frames that varies in their levels of abstractions and codification (Dreyfus & Dreyfus 1986).

What design research is the carried out at the Department of Architecture, Design and Media technology?

From these general discussions about design and design research let us make a quick overview of the contributions to this publication and how they relate to this discussion. By means of fuelling the process all contributors were asked to fill in the scheme below (figure 1). In this way all chapters relate to these issues: research question and title, methods, theory (state of the art/external perspective), and epistemology (internal reflection upon one's own contribution to knowledge production).

Project/chapter	Theory input	Methodology	Epistemology
2. <i>Line Marie Bruun Jespersen: New Aesthetic Experience in public space: Performativity and Interaction in Urban Design</i>	Aesthetics, urban theory	Interviews, Observations, Installation analysis	Phenomenology, Critical Theory, Hermeneutics
3. <i>Mads Dines Petersen: Implementation of technical knowledge into the early design phases</i>	Design theory, Architectural theory, engineering energy theory	Experiment, Research by design, Interviews, Action	Empirical-analytical, Pragmatism
4. <i>Camilla Brunsgaard: Understanding of Danish Passive Houses based on Pilot Project the Comfort Houses</i>	Sociology (everyday life), Engineering science, passive house theory, architectural theory	Interviews, measuring/calculations, (and observations, photo documentary, survey)	Empirical-analytical, Phenomenology
5. <i>Anne-Marie Skriver Hansen: The Study of Social Play through Sound and Musical Games</i>	Ecological perception theory, psychology	Observation, Signal processing, Experiment	Phenomenology, Hermeneutics, Empirical-analytical
6. <i>Valinka Suenson: Heterogeneous networks in multifunctional spaces</i>	Actor-Network-Theory, Foam Theory	RFID tracking, GIS, questionnaire, qualitative interviews	Post structuralism, Social constructivism
7. <i>Nis Ovesen: Changeability and Decision-making in the product development process</i>	Project management theory, Theory on decision making, Theory on creativity and iterative processes, Team dynamics	Interviews, Action research, Video documentation, Interaction analysis	Empirical-analytical, social constructivism

Project/chapter	Theory input	Methodology	Epistemology
8. <i>Tenna Doktor Olsen: Hospital Foodscape Design – considering if dining environment influence patient healing?</i>	Social Science (everyday life), Food Sociology (meal behaviour), Consumer Science (meal experience), Architectural Theory: Healing Architecture, Space Perception, Experience Design, Dining Interior, Scenography, Social Design (creating social space), Interaction Design (human/space)	Strategy: Deductive, Approach: CASE STUDY (embedded multiple case), Methods: Qualitative: Interviews, observations, participant observation, photo documentary, drawing, Quantitative: measuring patient output	Viewpoint: Holistic Approach: Empirical-analytical, Hermeneutic-Interpretive, Philosophy: Phenomenology, Semiotics
9. <i>Louise Møller Nielsen: Enabling communication and supporting the creation of shared frames in interdisciplinary teams working in the early phases of innovation</i>	Creative – and Engineering Design Theory, Innovation Management Theory, Framing and Communication Theory	LEGO Serious Play Workshops, Video-documentation, Action Research, Interaction Analysis	Social Constructivism
10. <i>Marie Frier: INTERIORITY – Architecture in the Future Prefabricated Home</i>	<i>Architectural theory</i> , herein specifically aesthetics and interiority in relation to domestic architecture. <i>Engineering science</i> , herein specifically construction technology and management in relation to prefabrication.	<i>Deductive theory</i> development, herein literature studies and spatial analyses. <i>Inductive prefab case study</i> , herein field studies and 1:1 experiments within prefab practice at Boel Living A/S.	The project takes its point of departure in <i>phenomenology</i> , herein aiming to actively confront and develop <i>subjective-aesthetic</i> and <i>objective-technical</i> epistemologies mutually.

Figure 1: Theory, methodology and epistemology of the projects

From the initial discussions the filling out of the first three columns were clearly the most simple. All projects had an explicit title, and all contributors had a clear sense of which theories and methods to use. More complicated was the identification of the epistemological basis for each project. One might think of such self-labelling as unnecessary academic rituals. However, what I find from years of research-based teaching at BA, MA and PhD levels is that stepping aside to reflect upon the knowledge that one either engages with in an external sense (i.e. brings 'into' the project) and the knowledge that one is actually contributing with in an internal sense (i.e. what knowledge the project 'produces') is a very fruitful exercise. The reflection upon what type of knowledge one is engaging with offers the self-awareness of 'blind spots' and limits to the project. All theories and methods have such 'blind spots' and the sensible thing is not to ignore this or fall into despair, but rather to try in the best possible way to be open minded and reflective about this.

The reader must embark on each chapter to get a deeper explanation of the way that the components of theory, method, and epistemology come together in the individual research design. Here we shall point at the main issue that very few of the projects 'belong' into only one epistemological framing. Most crosses the faculty lines of humanity, social science and technology/engineering and thus reaches into epistemological fields such as phenomenology, hermeneutics and critical theory, as well as pragmatics, social constructivism, empirical-analytical science (and even positivism). Actually this only confirms the self-description of the nature of the research efforts at the Department. However, I would argue that only rarely are these practices taken out in a completely open and transparent field of reflection. This is done by these contributors in what I consider to be a bold and courageous way. Why bold and courageous? Because it is far easier to subscribe to the 'school of thought' and the conformity of less reflected research practices where one follow the research leader or majority

than it is to stick ones neck out risking to exposes oneself to criticism. The publication at hand has therefore also only been possible to make due to an environment of trust and mutual respect. I shall not deny that good research comes out of very competitive environs, but here the creation of a trustful environment where one can explore the epistemological underpinnings of one's project has been prioritised. And if I may say so, with great success indeed!

The epistemological and methodological hybrids suggest a certain pragmatism which I believe is inevitable whilst attempting to use technical, aesthetic and social approaches to a holistic or integrated design problem. The nature of the cross-disciplinary problems at hand mirrors in the multiple theories and methods applied into the research design of these PhD projects and is in accordance with the complexity of real-life research problems:

'Only rarely can one find an instance in the real world outside the psychologist's laboratory when one kind of thought is employed in isolation' (Lawson 2006:138)

According to Gänshirt design research can be approached either based upon examples (*what* one can design), upon principles (*how* one can design), or based on theories (how design can be *accounted* for) (Gänshirt 2007:25). If we look at theory-based design research which has the central theme of 'accountability' as it pivotal focus, we find that this again opens up to approaches, methods and theories derived from natural sciences, cultural sciences, and the social sciences. This is also the case for the PhD projects conducted at the Department of Architecture, Design and Media Technology.

The road from here – a few perspectives and thoughts

From the discussion so far we shall now draw some general lines of conclusion to the discussion about the relationship between design and research at the department of Architecture, Design and Media technology. The discussion about how rational and scientific a design program should be is far from settled and will of course neither be so in this context. But there are influential writers and theorists who argue for a more scientific approach to design:

‘Design, today is taught and practiced as an art form or craft, not as a science with known principles that have been verified through experimentation and that can be used to derive new design approaches. Most design schools today teach through mentoring and apprenticeship. Students and beginning professionals practice their craft in workshop and studios under the watchful eye of instructors and mentors. This is an excellent way to learn a craft, but not a science’ (Norman 2007:172)

Needless to say the relevance and sensibility of this comments has much to do with the context and the intellectual climate of one’s enquiry. For instance the particular ways that design programs are hosted within universities do seem to soften up this claim. Here we shall not find time and space to engage with all dimensions of such statement, but acknowledge that there might be a need for a science of design. However, more importantly there seem to be less reason to opt for a strict ‘science’ of design if by this is meant a model emulated over the natural sciences only. Rather I should advocate for a *‘research culture of design’*. By this is meant, a usage and inclusiveness of the many different types of knowledge and academic disciplines amongst which we also find less strict

scientific practices but nonetheless committed to *‘reflective research design’*. Returning to the overall picture given by the research projects reflected in this small publication I think that is what should be advocated is; a creative *cross-disciplinary research environment constantly challenging and exploring the state-of-the-art theories, methods and design approaches*.

Coming from a critique of separating language and practice, theory and practice (Jensen 2004b) we should aim for understanding that thinking is a precursor for designing, and recursively that designing is a key influence for thinking (that being either by means of reference projects, modelling or design drawings). Within the field of design this dual-traffic modus must be developed and encouraged so that theoretically informed design and design enlightened theory becomes a common knowledge base for design teaching, research, and practice. In an earlier comment to John Forrester’s paper *‘Reflections on Trying to Teach Planning Theory’* (Forrester 2004) I argued that:

‘... there can be no such thing as ‘pure practice’. Thus we neither choose to start with clean theory and pure abstraction, nor start with concept-less practical examples. We need to understand more about the complex nature of utterances and concepts in relation to practices and actions as for example Austin (1962/75) highlights. Likewise the later work of Wittgenstein demonstrates language use is a ‘form of life’ (1953) and hence separation between knowledge and action, of theory and practice, is impossible. As the observation of Kurt Lewin goes, ‘there is nothing so practical as a good theory!’ (Jensen 2004a:255)

The cross-disciplinary research design mirrors the nature of the research questions and thereby the problems facing the field regardless of its name. Much will be gained from realizing that the research based approaches and methods

are detrimental to a good result in a culture of science and knowledge. But that should not push one into a dogmatic trench war of advocating either hard scientific theories only, or conversely hermeneutic and phenomenological approaches only. I would advocate what Moudon has termed a ‘*Catholic approach*’ to what designers should know (Moudon 1992). Given the aspiration expressed in the foreword of this publication the aim is now to collect inputs for a next volume of ‘*Design Research Epistemologies*’ amongst the more experienced researchers at the Department of Architecture, Design and Media Technology so that we may aim for a wider debate about this:

‘Growing research and research programs in design, therefore, is a necessary but complicated task. It is obvious that the proprietary behaviour of design practitioners will not make new knowledge widely available and that universities must take on the roles of knowledge generation and dissemination. At the same time, it is also clear that development in this area will be slow without broader recognition that research matters to the future of the design professions and that the outcomes of design decisions have consequences in society’ (Davies 2008:79)

A final introductory remark is that the research references in this publication are more than just the individual chapter’s references. This obviously they are, but they also constitute a ‘map of knowledge’ for the field as it looked at the moment of writing. Needless to say much more literature could be accounted for as well as this is a dynamic endeavour. However by going over this list with the more general interest of exploring the key references and literatures consulted one get a first birds-eye view of the territory of ‘design research epistemologies’.

Thus it is with no little pride that I present this first version of a fruitful collaborative writing and reflection phase, and hopefully there will be more volumes of ‘*Design Research Epistemologies*’ and perhaps even ones moving beyond PhD projects to include the general research efforts at the Department of Architecture, Design and Media Technology.

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