

**RAZISKOVANJE V PROCESU OBLIKOVANJA: ARHITEKTURNI
ODZIV V PRAKSO USMERJENEMU RAZISKOVANJU****RESEARCH THROUGH DESIGN: AN ARCHITECTURAL RESPONSE TO PRACTICE-
LED RESEARCH****izvleček**

Arhitekturno raziskovanje se vse bolj usmerja v pristop, pri katerem je praksa izhodišče in usmeritev raziskovanja hkrati. Raziskovalci presegajo tradicionalno dvojnost kvalitativnega in kvantitativnega raziskovanja ter vzpostavljajo novi, prepoznavni vzorec delovanja, t.i. performativno raziskovanje [Haseman, 2009]. Obravnavani tip raziskovanja omogoča praktikom raziskovanje vprašanj in tem, za katere so prepričani o njihovi relevanci, skozi proces prakse. Tako lahko arhitekt-raziskovalec razvije metodo 'raziskovanja skozi prakso', s ciljem razvoja novega znanja.

V pričujočem članku je predstavljen pregled performativnega raziskovanja v arhitekturnih šolah po svetu, čemur sledi razprava o tipih oblikovalskega raziskovanja. Ponuja oris mnogoterosti področja, v katerem se razvija raziskovanje iz prakse za prakso skozi prakso, in vpogled v široki spekter praks, ki bolj ali manj intenzivno podpirajo takšno raziskovanje in uravnotežajo metode raziskovanja.

V zaključku sledi še diskusija o tipu novega znanja, ki ga lahko razvijamo v raziskovanju v samem procesu oblikovanja. Za iskanje in izražanje 'racionalnega znanja' ne potrebujemo vedno formul in hipotez, temveč delovanje v kontekstu in na mejnih področjih. Takšen tip znanja nam omogoča spoznavanje povezav in meddisciplinarnost raziskovalnega dela, za poglobljeno razumevanje razmerij v kontekstu prostora in družbe.

ključne besede

raziskovanje prakse, raziskovanje v procesu oblikovanja

abstract

There is a growing trend across the field of architectural research towards a practice-led approach. This has seen researchers move beyond the established limits of quantitative and qualitative research, in pursuit of a new distinct paradigm called 'performative research' [Haseman, 2009]. This type of research allows practitioners to explore and question the issues that they believe are relevant through practice. As such, an architectural researcher may deploy a method called 'research through design', with a view to developing new knowledge.

This paper gives an overview of performative research in architecture schools across the world, before discussing forms of design research. It gives an outline of the diverse field in which practice-led research can take place and an insight to the broad spectrum of practices that can supplement practice-led research and the different degrees and balance of methods that may be supported.

In turn, this enables a discussion regarding the type of knowledge that can be developed through research by design. 'Relational knowledge' does not necessarily seek a formula or hypothesis, but aims to work in context and between tensions. This type of knowledge can help us to explore connections across a broad field and work across disciplines, in order to gain a deeper understanding of relationships in context and with society.

key words

practice-led research, research through design

Introduction

There is a growing trend across the field of architectural research towards a practice-led approach. This has seen researchers move beyond the established limits of quantitative and qualitative research, in pursuit of a new distinct paradigm called 'performative research' [Haseman, 2009]. This type of research allows practitioners to explore and question the issues that they believe are relevant through practice. As such, an architectural researcher may deploy a method called 'research through design', with a view to developing new knowledge.

This paper will give an overview of performative research in architecture schools across the world, before discussing forms of design research, with the aim of developing an outline of the diverse field in which practice-led research can take place.

Following on from this, Graeme Sullivan's, 'Practice-led research: a framework of practices' [2009], will be considered with a view to understanding how to navigate the diverse field of practices in which performative research can occur, the duality of structure and agency and the importance of situating practice-led research in a specific context. This will attempt to give an insight to the broad spectrum of practices that can supplement practice-led research and the different degrees and balance of methods that may be supported.

In turn, this will enable a discussion regarding the type of knowledge that can be developed through research by design. 'Relational knowledge' does not necessarily seek a formula or hypothesis, but aims to work in context and between tensions. This type of knowledge can help us to explore connections across a broad field and work across disciplines, in order to gain a deeper understanding of relationships in context and with society.

Practice in research

"The 'practice' in 'practice-led research' is primary – it is not an optional extra; it is the necessary pre-condition of engagement in performative research." [Haseman 2006:6]

Practice-led research works chiefly with tacit knowledge, which is both utilized and expressed through intelligent actions. The idea that there is a type of knowledge in practice, which is unspoken, has been around since the 1980s, when Donald Schön introduced the concept of the 'reflective practitioner' [1983]. Reflective practice is an established methodology, by which attempts are made to express the tacit knowledge found in practice. It is a verbal description made during or after practice that seeks to reveal knowledge. However, whilst reflective practice can help us to express the knowledge present

in practice, it is not a means of producing knowledge through practice-led research.

Since knowledge in practice-led research is developed through practice, it may be seen to contrast with the paradigms of quantitative and qualitative research. This difference has been described by Brad Haseman, who wrote 'A Manifesto for Performative Research', "over the past decade, practice-led research has emerged as a potent strategy for those researchers who wish to initiate and then pursue their research through practice." [Haseman, 2006: 1] Haseman discusses the difficulty that practice-led researchers face with regard to existing qualitative and quantitative methodologies and proposes a third distinct research paradigm, called performative research; "practice-led research has emerged as a potent strategy for those researchers who wish to initiate and then pursue their research through practice" [Ibid.]. Since qualitative and quantitative methods are both so well established, Haseman suggests that they, "frame what is legitimate and acceptable." [Ibid.]

In order to understand the limits of established quantitative and qualitative methods, Haseman compares and contrasts the scope and output of the two, on the one side of the divide, quantitative research requires a hypothesis to be tested by means of a large set of numbers and statistics. It aims to be objective and describe, explain and predict events. Its results are regular and repeatable. And on the other, qualitative research generates a hypothesis through identifying patterns in the words of small and deliberately selected groups. By its very nature, it represents multiple realities and is subjective. It is used to explore, discover and construct theories. In performative research, however, the output is not so strictly defined, it does not depend on either words or numbers, but practice. Haseman argues that the outcome of practice-led research is nonnumeric and not necessarily text based, but the material, or at times ethereal, forms of practice.

This has resulted in some practice-led researchers questioning how quantitative or qualitative methods could be applied to practice, or if they even ought to be. Indeed, they may not add anything to the process, but simply translates the work into a less accurate, or meaningful form. As such, the performative researcher may state that, "practice is the principal research activity" [Haseman, 2006: 7]. However, whilst this statement can free the researcher from the constraints of quantitative and qualitative methodologies, it is an attitude that could lead to fairly insular research being conducted, which may, as a result, only be open to understanding by fellow practitioners in a specific field.

Practice-led research need not, however, be bound entirely to practice, as Caroline Gray suggests in her paper, 'Inquiry Through Practice: Developing Appropriate Research Strategies' [1996], practice can act as a starting point from where problems and challenges are discovered and investigated, before research is carried out using established methodologies, that are not too unfamiliar to practice, or developed for practice. This second stage, developing research through established methodologies, could involve: reflective practice, participant observation and narrative enquiry. As such, it is not uncommon to find that practice-led researchers use and interpret established qualitative methods.

It seems that practice-led research cannot rely solely upon the established methodologies of qualitative and quantitative research, since its outcomes are not necessarily text or number based. A third research paradigm of performative research can, however, enable practice-led researchers to investigate and answer the questions that they feel are relevant through practice. In turn, more established methodologies might complement the research. This can allow for greater dissemination and discussion amongst peers.

Institutions conducting research through design

Interest in practice-led research in architecture, art and design has grown in recent times. There are architecture schools across Europe, where research through design is being pursued as a means exploring tacit forms of knowledge that can be developed through architectural practice. These institutions range in location and are supplemented by an emerging network being developed across Europe, with links to Australia, called, ADAPT-r ITN – Architecture, Design and Art Practice Training-research [ADAPT-r, 2013].

In the UK, there is a growing movement of practice-led research and teaching at architecture schools. Schools such as the University of Sheffield, Oxford Brookes, the University of Westminster, Glasgow School of Art, Edinburgh College of Art, the Bartlett School of Architecture, and the Manchester School of Architecture offer programmes relating to research by design. At Sheffield, the 'Bureau of Design Research' is a project office and research consultancy within the school [Schneider & Till, 2008: 4], where students engage with real communities and clients in order to develop ideas and briefs. The school also offers a PhD by design programme, which "supports a practice based investigation or a professionally led direction." [Sheffield School of Architecture, 2013]

There are, in turn, different approaches with regard to the focus of architectural design research at different schools. At the Bartlett, for example, research is encouraged in within an architectural academic setting, which aims at:

... "encouraging the development of architectural research through the combination of designing and writing. Students present an architectural design thesis consisting of a project and a text - elements of equal importance - that share a research theme and a productive relationship. The project may be drawn, filmed, built, or make use of whatever media is appropriate." [Bartlett School of Architecture, 2013]

This may compared to the emphasis that Sheffield places on multidisciplinary activities and practical testing, which seeks:

... "to forge more direct connections to industry, business and practice... An important aim of the course is to develop the knowledge base of the architectural profession through a rigorous approach to design which can be disseminated, reproduced and tested." [Sheffield School of Architecture, 2013]

Across Scandinavia, there are many architecture schools conducting practice-led research. In Norway, the first PhD by Design was completed in 2005 [Sevaldson, 2005]. This followed a 20 year long process of development of the research by design programme at the Oslo School of Architecture [Nilsson &

Dunin-Woyseth. 2011: 17]. In Sweden, all three architecture schools, School of Architecture at the Royal Institute of Technology in Stockholm, the School of Architecture at Lund University of Technology, and the School of Architecture at Chalmers University of Technology in Gothenburg, have pursued research by design, as a means of validating, "the architectural design project as the generative factor in research projects." [Nilsson & Dunin-Woyseth. 2011: 19] In Finland, the Aalto University has staged conferences and published on the theme of practice-led research [Mäkelä and O'Riley, 2012] and the Aarhus School of Architecture, in Denmark, is project partner with ADAPT-r.

In Belgium, the Sint-Lucas School of Architecture has been developing a programme of research by design for the past ten years [Nilsson & Dunin-Woyseth. 2011: 19]. Their PhD programme comprises eight modules to prepare candidates for developing a research by design dissertation. These cover the themes of: research methodologies and communications, knowledge, reflection, design cognition, consolidation of past experience, practice-based research, design and arts, and PhD by practice [Verbeke, 2008: 5-6].

In Slovenia, the Faculty of Architecture at the University of Ljubljana has a programme for doctoral studies in architecture, which supports, "investigation and development of alternative approaches to architectural research" [Zupančič, T, 2009: 683]. The faculty aims to develop these 'alterative approaches' with awareness of local research traditions and, in turn, includes elective modules, which relate to critique, context, design strategies and research by design. [Ibid.]

At the RMIT, in Australia, pioneering work has been conducted regarding the PhD by design. Leon van Schaik established their programme in 1986. The goal was to allow, "practicing architects to present their own work as the subject of a PhD." [BD, 2013] Over the course of three or four years, PhD candidates at the RMIT attend reviews every six months in which, they articulate their methods and motivations. At the end they are required to stage an exhibition, submit a 40,000-word thesis and undergo a viva. Given that the programme has now been underway for 28 years, they have a great deal of experience in the subject of research by design. This knowledge is currently being shared and developed with other project partners in the ADAPT-r partnership.

The ADAPT-r partnership actively seeks to develop and refine an approach to practice-led research through the establishment of a Europe-wide network. ADAPT-r is an EU funded PhD practice research partnership which "will make a substantive contribution to meeting EU 2020 priorities by building a new generation of creative practice researchers and research-led practitioners". [ADAPT-r, 2013] The partnership has been established between RMIT and: Aarhus School of Architecture, Denmark; Estonian Academy of Arts, Estonia; Glasgow School of Art and University of Westminster, UK; KU Leuven, Belgium; RMIT Europe, Spain and the University of Ljubljana, Slovenia. In turn, "The research that is produced through the ADAPT-r ITN will contribute to a wider research effort to increase knowledge, understanding and quality of research in creative disciplines and its methods." [Ibid.]

It would seem clear, from the examples, just mentioned, that an increasing number of research institutions are taking an active interest in the development of knowledge through practice and design. In order to get a better understanding of practice-led research, this paper will now discuss different ways of thinking about art and design research, research through design, and the framing of practice-led research with regard to structure, agency and action, before looking at the output of research and the types of knowledge that may be produced.

Research into, through or about art and design

"The spoken emphasis [of research] tends to be put on the first syllable - the re - as if research always involves going over old territory, while art, craft and design are of course concerned with the new" [Frayling, 1993: 1].

Design and art research differs to other forms of research since it is concerned with the development of ideas, whereas other research methods are generally more concerned with developing an impartial view or analysis of a situation. In quantitative research, a hypothesis is tested and in qualitative research, a hypothesis is generated. However, within the broad field that is art and design, there are alternate approaches to research, which do not necessarily act in such a linear way toward a hypothesis. In 1993, Christopher Frayling adapted Herbert Read's [1974] model of education through art, with regard to art and design, in order to describe different ways of thinking about research. He noted that there could be:

- Research into art and design
- Research through art and design
- Research for art and design

Research into art and design was fairly simple to understand with regard to traditional notions of research and, at the time, the most usual form of art and design research. It could be classified as research into history, aesthetics, perception and theory. It was an investigation, which followed a fairly standard template. It looked at the knowledge embedded in existing designs and artefacts.

Research through art and design was, according to Frayling, less straightforward, but nevertheless distinct. It could be project based research regarding design development or action research, documenting and analysing the process of design, typically through research diaries. It was a means of developing knowledge through creating an artefact, the thinking process was expressed through an object or design.

Research for art and design was the gathering of information prior to a design, as such it did not concern itself with the knowledge embedded in designed artefacts and was a vaguer notion of art and design research.

Design research

Where Frayling grouped art and design into one category, it may be argued that design and art are two quite different approaches. In his 1999 essay, 'Design Research: A Disciplined Conversation', Nigel Cross noted that there was something of a schism between art research and scientific research, with one being reflective and subjective and the other rational and objective. Rather than

trying to conduct design research solely according to the terms of art or science research, Cross suggested that design may instead perform, "as a discipline in its own right"[Cross, 1999: 7], with its own intellectual culture. He proposed this in the belief that, "there are forms of knowledge peculiar to the awareness and ability of a designer, just as the other intellectual cultures in the sciences and arts concentrate on forms of knowledge peculiar to the scientist or artist"[Cross, 1999: 5].

Cross proposed that knowledge could be created through design in three ways: that it lay in the person, the process and also in the product. He claimed that design was a latent ability within everyone. "We often overlook the fact that people are naturally very good at design"[Cross, 1999:5]. As such, studies of how people design, empirical or theoretical, could generate knowledge.

Knowledge could also be generated, according to Cross, through the process of design and the methods of generating, modelling and refining ideas. Knowledge was thus generated through the identification of the acts or techniques required to determine the issues and solve problems, alongside the ability to communicate these acts to others.

Lastly, Cross claimed that knowledge was present in the designed object itself. Design expresses a will to make a situation easier or better. This is done through the design of objects, which make complex tasks or situations easier to navigate. Successful design makes things simpler, as such, all of the complexity and problems that the object seeks to resolve are part of its embedded knowledge. As too are each preceding object, the testing, adaption and refinement of which led to the 'final' object. "This is certainly true craft based design: traditional crafts are based on the knowledge implicit within the object itself of how best to shape, make and use it"[Cross, 1999: 6].

Design knowledge, "resides firstly in people: in designers especially, but also in everyone to some extent"[Cross, 1999: 5]. This means that where there may be some difficulty for a scientist wishing to conduct a useful discussion about their work with the general public, a designer can construct dialogues around a design, which take advantage of a common latent design understanding. In this way, the designer can mediate between any number of disciplines and even the undisciplined. Indeed, in recent times, the concept of 'design thinking' has created a certain buzz within the business world [Brown, 2009; Cross, 2011; Rowe, 1987]. Indeed, the value of design has been recognised as more than simply its output; it is a collaborative, people-centred approach. As such, design thinking can be applied to many different fields, not only the creative ones.

Research through design

Research through design may be considered as the designer's response to practice-led research. At its most basic, design is an effort made to change the present day situation into a better one. "Everyone designs who devises courses of action aimed at changing existing situations into preferred ones." [Simon, 1996: 111]. This will for change means that design research is critically different to standard scientific research, which seeks to explain and predict, existing situations. Typically this

is achieved by separating different subjects into manageable parts and conducting controlled tests. Design research, on the other hand does not yield results in this way, working through one aspect of a complex design problem will not necessarily result in an 'answer'. There are tensions at work, which resist simplification.

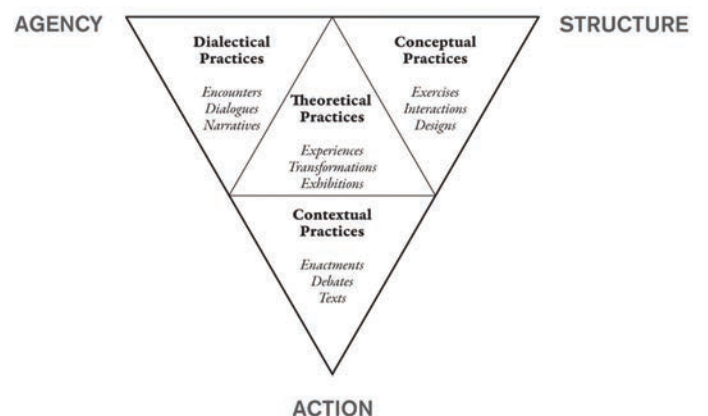
Design research comprises a mix of topics and agendas that can be investigated with regard to the person, the process and also the product in order to develop new knowledge [Cross, 1999: 5-6]. Alain Findeli [2008] described it as a, "systematic search for and acquisition of knowledge related to general human ecology considered from a designerly way of thinking, i.e. project-oriented, perspective."

Research through design needs to take into account the complex field of design research. It has to develop knowledge systematically through the person, the process and/or the product, it uses the design process as a means of both defining and driving the research. This means that the role of the designer is critical to the process and ought to be considered and evaluated throughout the process. In turn, research through design cannot take place in isolation, it also requires an input of knowledge from research about design and research for design.

A framework of practices

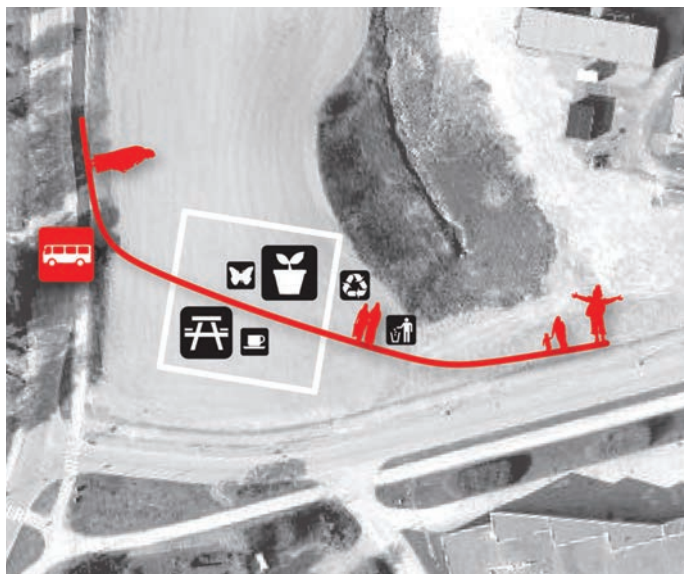
Practice-led research can take place over a fairly broad range of practices. In order to get an overview of these differing practices, Graeme Sullivan, a professor of Art Education at Colombia University, has devised a matrix on a triangular grid, pertaining to practice-led research, which describes a framework of practice, 'Practice-led research: a framework of practices' [Figure 1].

Sullivan's framework depicts all practice-led research as being framed by varying degrees of agency, structure and action, but centred on a theoretical practice. He argues that theoretical practice is at the core of practice-led research, since it is where



Slika 1: Raziskovanje prakse: okvir praks. Sullivan, G. [2009]. Making space: the purpose and place of practice-led research. V Smith, H. & dean, r. (eds.), 'Practice-led research, research-led practice in the creative arts' [str. 41-65]. Edinburgh, UK: Edinburgh University Press, str. 49.

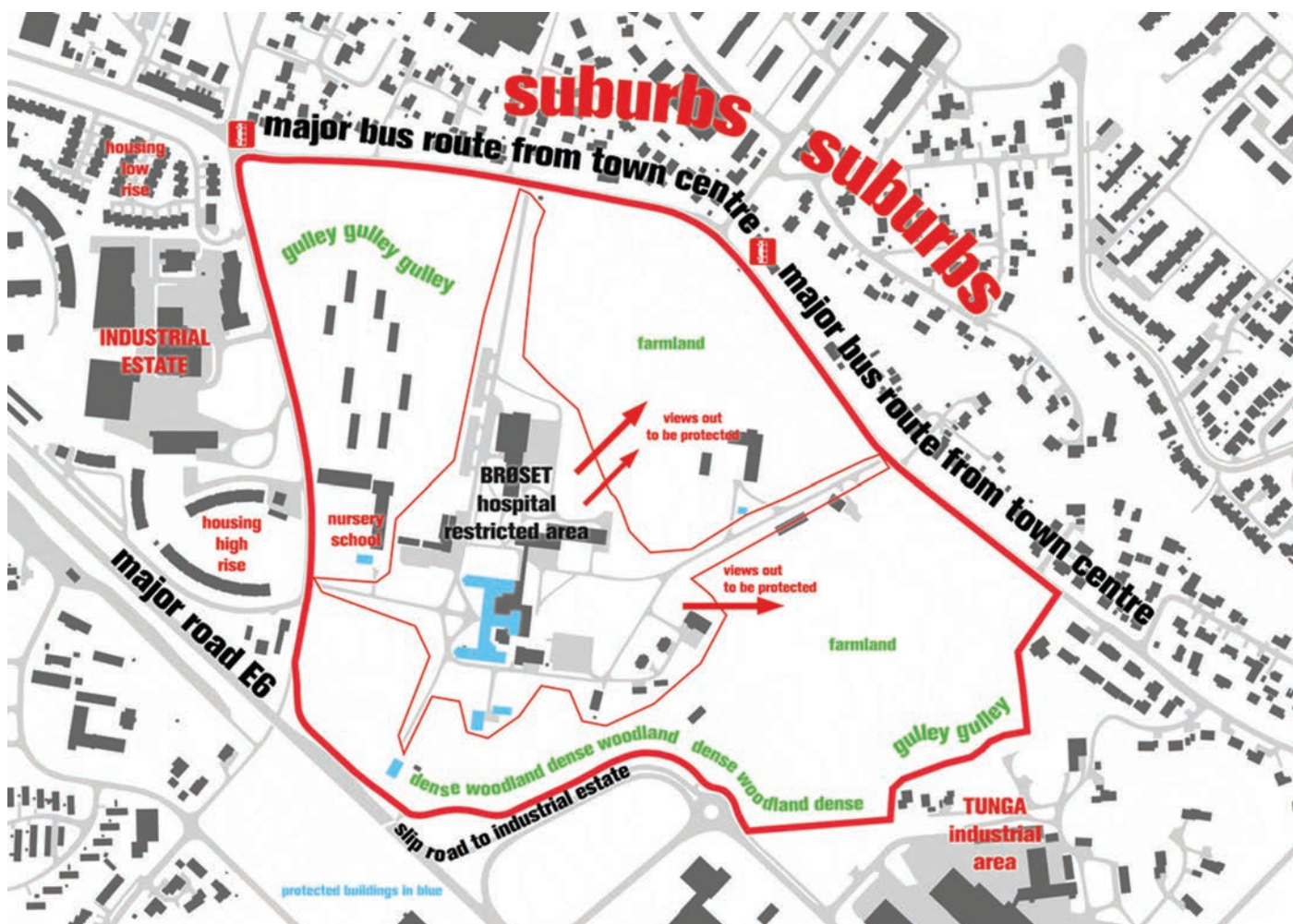
Figure 1: Practice-led research: a framework of practices. Sullivan, G. [2009]. Making space: the purpose and place of practice-led research. In Smith, H. & dean, r. (eds.), 'Practice-led research, research-led practice in the creative arts' [pp. 41-65]. Edinburgh, UK: Edinburgh University Press, p.49.



Slika 2: Primer kontekstualne prakse. Konceptna shema iz avtoričinega lastnega projekta 'PhD by design', 'The First Space at Brøset'. [Predelano iz: Hatleskog, E. 2014:107]
Figure 2: An example of contextual practice. A conceptual sketch from the author's own PhD by design project, the First Space at Brøset. [Revised from Hatleskog, E. 2014:107]



Slika 3: Primer dialektične prakse. Fotografija iz razgovora v okviru projekta 'First Space'. [Predelano iz: Hatleskog, E. 2014: 107]
Figure 3: An example of dialectical practice. An on-site conversation taking place during the First Space project. [Revised from Hatleskog, E. 2014: 107]



Slika 4: Primer kontekstualne prakse. Določanje konteksta in projektnih omejitev za 'First Space' projekt. [Predelano iz: Hatleskog, E. 2014: 29]

Figure 4: An example of contextual practice. Mapping the context and restrictions at the First Space project. [Revised from Hatleskog, E. 2014: 29]

practice is theorised as research, usually as an experience, transformation or exhibition. This centre section of the matrix is where, "research problems and issues are found and explored"[Sullivan, 2009: 49].

The corners of the triangle demonstrate fields into which practice-led research can venture. The conceptual practices to the right of the framework, refer to form and system generation. This corner is where thoughts are tested through drawing, making or building. These acts tend to be visual experiments in structure. They take the form of drawing, model-making, filmmaking and painting, or any other creative technique that does not rely upon verbal language.

To the left of the framework, lies agency and the dialectical practices, which investigate the meanings that people develop through experience. These experiences are both made and expressed through dialogues, in communities and through narratives, typically as a result of an encounter with an artwork, event or space. They can result in shared stories or personal interpretations. In design practice, these could relate to public design meetings, interviews, conversations and debates.

At the bottom of the framework lie the contextual practices. These are enactments, debates and texts, which aim at bringing about social change and seek to do so by being context specific. They are a means of 'thinking in a setting'. They seek to develop situations through actions and are collaborative, cultural and critical. These practices may involve mapping, seeking examples of other similar works, or learning about and evaluating the situation's history.

Sullivan's framework suggests that conceptual practices can be used to develop form and frameworks. These primarily non-verbal design practices, develop structure. In response to this, conversations can take place, which help to define a project narrative, this gives the project agency, as pressure is put on the confines dictated by the structure. This pressure can, in turn, inspire action to be taken in context, which leads to the realisation of the core practice. The core practice is supported by design and evolves in response to structure, agency and action. It is the culmination of ideas in a specific location and the artefact of practice.

Agency and structure

The top two corners of Sullivan's framework of practice show the traditional pairing of agency and structure. In social theory, agency is commonly understood to relate to the ability of the individual in society to act, whereas structure relates to the overarching structure of society.

Agency and structure do not relate to two opposites, but are instead two sides of a linked duality. The sociologist Anthony Giddens, argued that, "Human agency and structure are logically implicated with each other." [Giddens, 1984] By this statement, he meant that there is a scale, whereby no-one is ever totally free from agency, but neither are they completely restrained by social structure, they are instead somewhere in-between.

This is where the third corner of Sullivan's framework comes in, action is the force required to navigate the duality. Giddens states, "that action logically involves power in the sense of

transformative capacity." [Giddens, 1984: 15] As such, it may be suggested that the duality of agency and structure would remain static without action. Giddens has described this action, with Christopher Pierson in, 'Conversations with Anthony Giddens', as what people 'do'. "Society only has form, and that form only has effects on people, in so far as structure is produced and reproduced in what people do" [Giddens and Pierson, 1998: 77]. With regard to the implications of agency and structure relating to architectural practice, Giddens' ideas are cited by Nishat Awan, Tatjana Schneider and Jeremy Till [2011] in 'Spatial Agency: Other Ways of Doing Architecture', as critical to an understanding of 'spatial agency'. "[Giddens] argues that agents are neither completely free as individuals, nor are they entrapped by structure. Spatial agents are neither impotent nor all powerful: they are negotiators of existing conditions in order to partially reform them." [p.31]

The premise of spatial agency is that space is not simply defined by architects and planners, but, as social product, it relies upon collaboration. As such, architectural practice ought to take into account not simply structure, but use, interaction and context. Spatial agency is, then, the negotiation of space, not simply the definition of its boundaries.

In turn, when considering the triangulation between agency, structure and action depicted in Sullivan's framework, the spatial agent may aspire to work in the central core theoretical practices.

Sullivan's framework demonstrates how practice-led research in art and design can be developed through understanding that the knowledge generated through practice does not come about in isolation. Instead, it relies on a process, which is both aware of and utilizes different degrees of agency, structure and action in practice.

Action

In order to take action, one must be aware of the specific field in which action may take place. As such, debate lies at the bottom of the framework. This debate is intended to help the practice-led research bring about social change by being context specific. It is a means of 'thinking in a setting', and seeks to develop situations through actions.

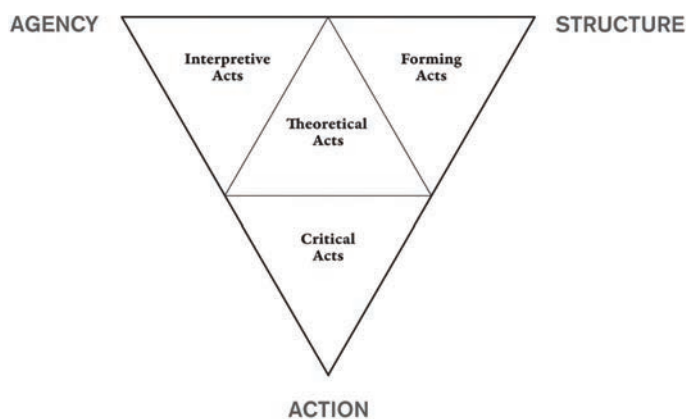
In order to understand what thinking in a setting could mean, Nicolas Bourriaud's 'relational aesthetics' [2002] provides a description of a context specific and aware approach to practice. Bourriaud's ideas relate primarily to artistic practices, however, they can also be seen as applicable to urban/architectural practices. He compares artistic practices to, "a game whose forms, patterns and functions develop and evolve according to periods and social contexts; it is not an immutable essence." [Bourriaud 2002:11] As such, relationships are not predetermined or static, but ought to be studied with regard to the present.

According to relational aesthetics, when studying art works, design interventions and architecture, these artefacts are considered not as independent or private, but in relation to the inter-human relationships that they represent, produce or prompt. It is both a theoretical and practical approach. As such, when it comes to architecture, rather than simply imagining



Slika 5: Začetki bistvenega dogajanja prakse. Fotografija iz časa prvih intervencij v prostoru – projekt 'First Space': bližnjica.

Figure 5: Beginnings of a core practice. A photograph taken of the first on-site intervention at the First Space: a shortcut scored across the site.



Slika 6: Raziskovalna dejanja umetniške prakse. Sullivan, G. [2006]. Research acts in art practice. 'Studies in Art Education', [str. 29].

Figure 6: Research acts in art practice. Sullivan, G. [2006]. Research acts in art practice. 'Studies in Art Education', [p. 29].



Slika 7: 'First Space' projekt – jedro prakse. Fotografija oblikovalske intervencije projekta 'First Space': bližnjica, razstavni prostor in vrtovi, odprti javnosti.

Figure 7: The First Space project. A photograph taken of the design intervention at the First Space: a shortcut, an exhibition room and public gardens.

what the city of the future may look like, the practitioner can consider how that city is inhabited. Bourriaud calls this shift:

... "learning to inhabit the world in a better way, instead of trying to construct it based on a preconceived idea of historical evolution. Otherwise put, the role of art works is no longer to form imaginary utopian realities, but to actually be ways of living and models of action within the existing real." [Bourriaud, 2002: 13]

Contextual practices are critical investigations into context and precedent. Rather than looking at imaginary visions of the future, attempts can be made to understand existing situations, uses and outcomes with a view to basing any model of action within the real.

Acts

In order to understand the relationship between the different practices a simplified framework [Figure 2] shows the different acts involved. To the right of the framework, interaction allows a practitioner to think in a medium, to design form and develop structure. This represents the acts of forming or making. Dialogue, on the left, supports the practitioner to think a language, it allows for discursive actions. These are the interpretive acts and promote agency through discussion. Debate, at the base, encourages the practitioner to think in a situation. These are critical acts. The transformative experience, in the centre of the framework, depends, to varying degrees, upon the other supporting practices. It is by means of these theoretical acts that transformation occurs; they are onsite activities, which are both relational and reflective [Sullivan 2010:153].

The inquiry that takes place through the core practice is, "an approach to understanding that occurs at all levels of human inquiry and involves creative action and critical reflection"[Sullivan 2005:125]. As such, it is supported by and includes the other practices; it operates not solely in design, conversation or critique, but onsite, at experiential, or daily scale, whereby existing situations are changed into different ones.

According to Sullivan, "visual arts research comprises practices that are theoretically robust, idea based, process rich, purposeful, and strategic, and make use of adaptive methods and inventive forms whose uniqueness is best seen as connected to, yet also distinct from, traditional systems of inquiry"[Sullivan 2006:225]. Since inquiry takes place through the theoretical practices, it differs to traditional modes of research, "Rather than seeing inquiry as a linear procedure or an enclosing process, research acts can also be interactive and reflexive whereby imaginative insight is constructed from a creative and critical practice." [Sullivan 2006:19-20]

This would seem to suggest that the core theoretical acts are situated in a space of open-ended, reflective and imaginative inquiry, which is both responsive and insightful. In turn, they are supported by thoughts in design, conversation and context.

Research output

When it comes to considering the output of research through design, questions arise as to the appropriate balance between artefacts and text. Given that, "practice is the principal research

activity"[Haseman, 2006: 7], it may be argued that a logical outcome of research through design could be the object of practice, the artefact itself. However, since knowledge ought to be communicable and artefacts in themselves are open to interpretation, to restrict research output to an artefact, could limit the dissemination of ideas and knowledge. As such, it would seem that both artefacts and text are preferred. In turn, the object of practice may be used to generate and develop ideas, whereas text can support this process by documenting and discussing practice, say by means of reflective practice techniques.

The degree and balance of the research output of practice-led research has been discussed by a number of different researchers:

- Hockey and Allen-Collinson [2000] suggest that text and artefact should reflect each other and be inter-related. This means both the text and the artefact are freestanding, that neither depends upon the other, however, they may compliment each other.
- Candlin [2000a, 2000b] claims that words ought not be necessary in order to describe an artefact, that practice can be self-explanatory.
- In turn, Evans and LeGrice [2001] propose that practice defines its own language independent of text. They cite the example of mathematics, which has its own language. However, as Friedman [2006] has argued, the language of mathematics is not open to free interpretation, it is unambiguous and formal. It would be difficult to imagine that practice based research could devise a language that was so explicit.
- Mäkelä [2005] suggests that practice could be employed as a problem solving strategy. In this way, practice could become a research tool aimed at examining predetermined concerns or issues via practical techniques, such as the design and development of an artefact. This approach suggests that the output of practice led research would be the physical testing of ideas in response to a particular research problem.
- In turn, Scrivner [2002] proposes that the knowledge associated with the artefact is of greater importance than the artefact itself.

[For a fuller overview of each of these points see the report: 'AHRC Research Review Practice-Led Research in Art, Design and Architecture'. Rust et al., 2010: 10 <May, 2013>]

These different approaches to research output seem to support Cross' proposition that knowledge can be produced in three ways through design, that it lies in the person, the process and also the product. [Cross, 1999: 6] However, there can be different weighting and emphasis placed onto these different modes of production.

Transdisciplinary

Sullivan's framework demonstrates how practice-led research is unlike more established qualitative and quantitative methods. Indeed, Sullivan has argued that practice-led research differs from traditional methods since it is both, "purposeful yet open-ended

and clear sighted yet exploratory." [Sullivan, 2009: 49] Rather than being a pursuit of a formula or a hypothesis, it involves negotiating a course of action between sometimes seemingly disparate objectives. The method seeks to work between tensions, not necessarily to solve them.

Once it is clear that practice-led research does not necessarily try to compartmentalise or simplify issues, then it is also apparent that its breadth and scope can be great, "The expression, 'practice-led', does not describe a single set of ideas about research. Its meaning varies with discipline, location and person and it varies with the questions that are investigated." [Rust et al., 2007: 10] Understanding practice-led research as a means of negotiating a course of action between tensions, without necessarily hoping to solve them, gives an indication of the type of knowledge that can be developed. This knowledge may be described as Mode 2 [Gibbons et al. 1994] and is linked to the concept of transdisciplinary research, which, has, in turn, been used by Johan Verbeke [2008: 4], of the European Association for Architectural Education to describe the emerging culture of doctoral research in architecture and design.

The difference between Mode 1 and 2 knowledge production has been outlined by Gibbons et al. [1994] as such: "Mode 1: The complex of ideas, methods, values and norms that has grown up to control the diffusion of the Newtonian model of science to more and more fields of inquiry and ensure its compliance with what is considered sound scientific practice. Mode 2: Knowledge production carried out in the context of application and marked by its: transdisciplinarity; heterogeneity; organisational hierarchy and transience; social accountability and reflexivity; and quality control, which emphasises context and use-dependence. Results from the parallel expansion of knowledge producers and users in society" [p. 167].

Practice-led research in architecture can be described as Mode 2 knowledge production since, architecture as a discipline has a complex relationship with the world in which we live. It deals with a wide range of issues from the personal, to the societal, to the structural. Within the discipline there are many, practical forms of knowledge, "Not only does architecture allegedly balance between the two most extreme ends of the spectrum of knowledge production, namely arts and science; it also balances between individual agency... and work for a client" [Doucet & Janssens, 2011: 2].

Given that architecture develops knowledge in the spectrum between arts and science, it is understandable why it has been called 'relational'. Tony Fry [2011] has described the concept of relational knowledge as being: "Informed by Alfred North Whitehead's notion of relatedness; the rhizomatic complexity of Gilles Deleuze's thought; the plural and political ecologies of Félix Guattari, Paul Virilio and Isabelle Stengers; and the diverse inter-relational networks explored by Bruno Latour and Manuel Castells, "relational knowledge" strives to draw on and displace the placement of these discourses as they get specifically deposited in particular disciplines. The claim here is not one of attainment, but rather of a work in progress" [p.20].

As such, the relational knowledge, developed through transdisciplinary architectural research, seeks to explore

relationships across a broad field. This field spans not only multiple disciplines, but also works within the real world and with society. Given the complexity and breadth of the field, the knowledge developed does not relate to answers, per say, but to an understanding of connections and relationships.

Conclusion

This paper has sought to give an overview of practice-led research as an emerging trend in architectural research. Practice-led research may be seen as a performative response to inquiry that moves beyond the traditional limits of quantitative and qualitative research. Research through design is a designerly response to practice-led research, through which knowledge can be developed via the person, the process and or the product.

The field in which architects and designers work is complex, as such, research through design does not necessarily seek solutions, but is a means of both investigating and navigating tensions, which resist simplification.

Practice-led research can take place across a broad scale of practices, methods and intentions. In turn, it can be useful to consider it as a core practice, which is framed by varying degrees of structure, agency and action.

Where structure and agency can provide research through design with form and narrative, an understanding context is key to giving confidence to actions. This allows relationships to be discovered, produced and/or prompted. In turn, the core practice of research can be supported by design and conversation in context, in a open-ended, reflective and imaginative space, which is transformed through the experiences it generates.

Given the open-endedness of inquiry, it is clear that practice-led research can be applied to any number of subject fields, it is not a single set of ideas, but an investigative approach. It works between tensions, disciplines, society and context. As such, the relational knowledge developed through performative research and research by design has many possible for now and the future.

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