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ARCHITECTURAL DESIGN AND THE PROBLEM OF PRACTICE-BASED RESEARCH

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ABSTRACT

This article considers the existence of a sub-group of academic research that is particular to areas of design practice: practice-based research [PbR]. This sub-group is widely recognized in Europe but is less well recognized elsewhere. PbR has raised a number of discussions about the best way of approaching the outcomes that are considered, within the dominant models of academic research, to be non-traditional. One question that is debated asks whether academic research in areas of design practice is in some way different from the existent models of academic research. This is a matter of the understanding that a community has about traditional research criteria in terms of their potential for satisfying the needs that are expressed in the areas of design practice. It is also a matter of the nature of design practice and the particular concepts that are adopted in these areas. The context in which PbR finds grounds for these discussions is one in which the needs and requirements of the academy are pervasive. The article therefore presents the concepts of academic research and design practice in order to introduce the problem that PbR represents. This problem is discussed in terms of contextual understandings that are specific to different nations and academic communities.

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1 ACADEMIC RESEARCH AND DESIGN PRACTICE

Research funding bodies and higher level education institutes with an interest in academic research strive to define what research in design areas is, and how it can be identified and evaluated. It is common that the academic community adopt a traditional definition of research, usually one that has its origins in the scientific model of research. This means that the traditional scientific model of research is generally regarded as the received or dominant one in the academic arena. However, it can be anticipated that a scientific model might not offer the ideal structure for defining what is research in the humanities (cf. Gibbons et al, 1994).

The AHRC (Arts and Humanities Research Council) is a British funding agency that finances academic research in the humanities and the arts. The Council adopts a definition that considers research primarily in terms of its processes rather than in terms of its results (AHRC, 2006). This definition of academic research was constructed around three key aspects and any bid application should respond to all three integrally if it is to be considered eligible for funding from this agency. First, the research proposal should define a series of questions, themes or problems that will be considered throughout the study. The proposal should also define aims and objectives that seek to improve knowledge and understanding on these questions, themes or problems that are being considered (AHRC, 2006: 19). Second, the research proposal should specify a research context in which the questions, themes or problems will be approached. The researcher should specify why it is important that these questions, themes or problems be considered; other studies or research that are being or have been developed in the area; and the particular contribution that the project will bring to the advancement of creativity, insight, knowledge and understanding in the area (AHRC, 2006: 19). Third, the research proposal should specify methods that will be used for studying and responding to the questions, themes or problems. It should be declared how, in the course of the project, the researcher intends to respond to the questions, themes or problems. The reason for the choice in method should also be explained and why this method will offer the most appropriate means of analysing the questions, themes and problems of the study (AHRC, 2006: 19).

This definition of research introduces a distinction between academic research and design practice which becomes explicit when the research results and processes are considered.

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Outcomes of design practice may be produced or the practice activity may be developed as an integral stage of the academic research process as defined above. The AHRC would expect, however, that this professional practice be accompanied by some form of documentation of the research process as well as by some form of textual analysis or explanation that supports the theoretical position that was taken and demonstrated critical reflection. Conversely, professional design practice might not involve this reflective process in which case the research proposal would be ineligible for AHRC academic research funding.

This model of research published by the AHRC is essentially a process-model that the Council uses to differentiate research that is eligible for its funding from that which is ineligible. Although this process-model presents many advantages, in particular the separation between research format and research content, it still receives considerable criticism from the academic community in areas of design practice. The separation between research format and content that the AHRC process-model suggests has been defended (Biggs, 2000), however it suggests the need for further investigation of the traditional formats that are adopted in the dominant models of academic research thus problematizing the fundamental characteristics of academic research in areas of design practice. The use of the scientific method or communication of research outcomes through the traditional text-based thesis seen as indicators of valid research inhibits the exploration of new and alternative formats. Focusing on the process, such as on the systematic and rigorous implementation of an appropriate method, allows the researcher to ask about the appropriateness of that method instead of the appropriateness of the format in which the results are communicated (Biggs, 2005).

There would seem to be a difficulty in conducting academic research in areas of design practice if the AHRC definition of research is adopted exclusively. This is because the definition is general and provides a generic model of academic research in all areas, and therefore does not problematize specific areas. Such a definition does not consider, for example, the case of areas where these might be design and creative practice, where the results of research are often non-linguistic or ineffable, or do not otherwise present themselves as classic verbal discourse.

In an attempt to clarify what academic research in areas of design practice would be, the AHRC asks in its application forms: 'What contribution will your project make to improving, enhancing or developing creativity, insights, knowledge or understanding in your chosen area of study?'. This question has been systematically studied in an attempt to make it as inclusive as possible in order to accommodate the results and processes that are inherent to the areas of design practice. Biggs and Büchler (2008b) unpacked the AHRC question above and concluded that there are particularities within the areas of design practice that make it ambiguous and in need of further reflection if it is to be useful. The ambiguity in the question in terms of areas of design practice appears, for example, in regards to the need for the research to be 'creative'. There is a dimension to the 'creativity' requirement that suggests that the research be itself creative and that the researcher demonstrate creativity when defining the theme, questions, methods for analysis, etc. However, there are also issues that involve the act of being creative in design practice and, consequentially, of what is acceptable as knowledge on that 'creativity'. The confusion arises when an original solution for a design problem is presented as a sign of creativity and whether or not this creative and original outcome would represent originality and creativity as required in the academic research community.

The concept of 'knowledge' itself should be understood, within the context of academic research, as that which is transferable and communicable and not that which only benefits the investigator or commissioning agent as commonly occurs in professional design practice. Knowledge which is tacit and/or experiential and can be known but not communicated represents an original contribution to the professional but, for being tacit, only stands to benefit that professional and not the community as a whole (Biggs, 2004; Biggs & Büchler, 2008a). These are only two distinctions and incongruence between the generic definition of academic research and design practice that serve to indicated that the relationship between these two contexts and the conceptual grounding of the first should be explored in more depth.

2 THE ACADEMIC RESEARCH / DESIGN PRACTICE RELATION

In Europe, and particularly in the UK, there is an on-going debate in which it is discussed whether academic research in areas of design practice would be in some way different from

the research that is developed in other disciplines. The guiding criteria of what constituted research in the various areas was opened to discussion when in 1992 the British polytechnics were given university status and could therefore establish discipline-specific regulations that defined what was research in each area. This context opened the debate around academic production to the design practice community. Practitioners understood that the research activity that they were developing in and for their own practice would count as academic research.

The debate originated as a consequence of the move and reclassification of the British polytechnics. In 1992 the old British polytechnics, which had a technical-vocational profile, were given university status. The distinction between a university and the old polytechnic schools is that the former have individual awarding powers while for the latter this power was held by the government agency CNAA (Council for National Academic Awards). With this change, certain criteria that were seen as clear and universal in a large part of the disciplines started to be questioned in search of definitions that would encompass characteristics that are specific to design practice activities such as architecture, fine, performing and applied arts, music, design, etc. Criteria that, within the traditional model of academic research, were fixed and defined such as 'knowledge', 'creativity', 'reference', 'method', 'audience', etc, started to be scrutinized and explored. An attempt was made towards extending these concepts that are characteristic of the traditional model of research so as to include the humanities. Certain successful discussions were conducted around the hybrid concepts such as 'tacit and experiential knowledge' (Polanyi 1974), 'reflexive method' (Schön, 1991) and 'grounded theory' (Strauss & Corbin, 1990) but these still precipitate considerable debate.

The search for a redefinition occurred in a localized way, in various universities, each one responding to the demands made by their main audience (e.g. University of Coventry, U. Dundee, U. West of England, U. Arts, London). The Research Assessment Exercise (RAE) in its regulating and evaluative capacity published a set of criteria for assessing the quality of research for the panel that deals with the areas of creative and design practice, e.g. 'Panel criteria and working methods: Panel O' (RAE 2006). When evaluating the research that is produced in various areas, the RAE panels give marks that go from 1* (one star) to 4* (four star) and releases funds for the next quinquenial according to these marks. However, the qualitative distinction between these marks is not considered to be clear, especially

between 2* and 3* which are respectively described as research that demonstrates 'Quality that is internationally excellent in terms of originality, significance and rigour but which nonetheless falls short of the highest standards of excellence' and 'Quality that is recognised internationally in terms of originality, significance and rigour'. (RAE, 2006: 75).

Some critics have suggested that a separation between 'practice-led' research and the traditional model of research in art and design doctoral research be made (Scrivener, 2004). This separation corresponds to the different routes to research that various institutions (e.g. Coventry, Dundee, Oxford Brookes, etc.) propose in order to award the same title: the PhD in areas of design practice. Other institutions (such as the Kent Institute) have modified the traditional requirements for theses that are presented, demanding only an argument or deciding in favour of the mere documentation of the design process. The documentation of the process is widely preferred in the performance areas such as dance where PARIP (Practice as Research in Performance) proposes that dance performance be taken as research. Some institutes have changed their requirements from the conventional thesis to the possibility of presenting an argument in non-text formats or documentation of the design process.

As a result of this questioning of what would constitute research as such, many diverse and alternative concepts of quality and understanding of the previously fixed requirements for academic research arose. Today in the UK there are many models of PhD thesis that include the traditional bound document and the possibility of submitting only a work of art or presenting an exhibit around which theoretical points are discussed at doctoral level (UKCGE, 2003: §5.3). The problem that this situation creates is that of the inexistence of clear criteria of what is academic research in areas of design practice. For this reason, the authors have been working collaboratively on the development of a criterion-based approach to defining and evaluating research in the creative and performing arts (Biggs & Büchler, 2008a).

In the structure of architectural higher education in Brazil there is a division between disciplines that deal with theoretical and fundamental issues of architecture, with technical and productive aspects and with design practice. FAUUSP (Faculty of Architecture and Urbanism of the University of São Paulo) is a case in point where this division is reflected in the faculty department names: AUH (Department of Architectural and Design Aesthetics

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History), AUT (Department of Architectural Technology) and AUP (Department of Architectural Project Design). In the case of the AUH and AUT departments, there is a direct connection between the content of the graduate modules and the research that is conducted in each department. For example, research that is conducted in the AUH can make a critical analysis of an architectural work and in AUT it is possible to evaluate buildings, materials and production processes. It is common that research that is developed in the AUP department adopts the same methods or investigates the same questions as the other two departments. It is therefore difficult to consider the contribution of the design activity to research or issues that are relevant to that practice through the use of these conventional methods.

A relevant question is therefore whether there are, in academic research in areas of design practice, issues that are fundamentally different from those that are successfully contemplated through use of the dominant models of research. It was possible to visualize this question when, in the UK, the polytechnics restructured their syllabus. Within these new academic structures each discipline had its own academic research counterpart and it then was possible to identify a gap in the description of academic research that would be developed in the departments that taught design practice.

Another particularity of the Brazilian situation on academic research in areas of design practice is that usually the same professionals that practice the architectural design activity also conduct academic research. Perrone (2001) explored the bipolarity between research and architectural practice and explained that the appearance of expressions such as 'design thesis' (*projeto tese*) demonstrate this issue in the context of the Brazilian architect-researcher. The architect-researcher archetype describes that professional who designs, lectures and develops academic research at the same time because of the particular economic situation that presents itself in Brazil. All these professional activities are developed concurrently within the concept of the Brazilian architect-researcher. Nevertheless, the impact of one on the other is not clear. It is not clear whether the architect's practice is benefited by the academic research that she develops or whether the practitioner contributes in an original and unique way to the academic research that he develops in his area of expertise. Regardless, it is evident that the current model that defines academic production makes a distinction between the practical and research result.

Under the Lattes platform [1] for example, the output of design practice should be listed as technical rather than academic production. This creates restrictions for research funding. The professional who does not have sufficient academic production to merit research funding, will have to resort to other sources of financial support. In this situation, it is probable and common that the professional will tend to develop research that presents a more practical outcome or outcomes that have commercial applications. This professional whose research is being funded by non-academic research funding agencies may be unable to develop theoretical and fundamental research which is the type of research that helps to build critical mass in an academic community (Friedman, 2004). Therefore, despite arising due to different reasons, both in the UK and in Brazil it is still valid to ask the same question about the relationship between academic research and design practice, i.e. is it different in some way from academic research that is developed in other areas.

3 THE PRACTICE-BASED RESEARCH PROBLEM

This question has, in the UK, given rise to the term 'Practice-based Research' (PbR), a term that in itself provokes a series of misunderstandings and disagreements. It is not clear, for example, what proportion or contribution from practice to academic research would characterize this research sub-group. The converse concept, that academic research would not have a practice aspect, is also not persuasive.

Even academic research that is developed within the traditional scientific disciplines contains practical elements such as experimentation, data collection, observation and interviewing, for example. The historic context of PbR has been summarized by Bird (2000). Various critical articles that express diverse positions about this sub-group of research have also been disseminated by the NCAD (National College of Art and Design) in Dublin, Ireland. In Europe PbR is recognized and currently discussed, however in Brazil, although this modality of research exists, it is not clearly demarcated.

[1] The Brazilian national database of research institutions and individuals in science and technology: http://lattes.cnpq.br/index.htm

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In the Latin American Schools and Faculties of Architecture conference, Perrone (2001) discussed the question of academic research in the area of architectural design. He stated that there is a concern in understanding the relationship between research and design and presented two current opinions on academic research in areas of architectural design. The first perspective is visible in debates that are conducted in the disciplines of architecture, design and urbanism where a large number of academics take research work as that which 'contains a method and/or a systematic treatment that is capable of establishing reflections and conclusions about some objects of study'[2] (Perrone, 2001: 1). The other perspective that comes from the architectural design practitioners defends 'the design activities as research activities'[3] (Perrone, 2001: 1).

It is possible to infer from the first group of academics that their argument would defend that various other disciplines could contribute to research on architectural design. Alternatively, the advocates of the second argument would maintain that because architectural design is the object of study in academic research in this area, it can only be known and therefore investigated effectively by the architect herself. If the investigation is conducted by a researcher from a different area, one runs the same risk as when 'we try to conduct an economic interpretation without being economists, a sociological interpretation without being sociologists and so forth'[4] (Sanovicz, 1990: 111). On this debate about the relationship between research and practice, Perrone (2001) concluded that it reflects the uncertainties about the production of knowledge that exists in higher education architectural institutes.

The contribution of design practice to academic research can best be described as a spectrum that is composed of two extreme poles and a long and variable range of possible combinations between the two. For clarity, three ways in which design practice can contribute to academic research will be explained here: the two extreme poles of (1)

[2] 'possuam um método e/ou um tratamento sistemáticos capazes de estabelecer reflexões ou conclusões acerca de alguns objetos de estudo'

[3] 'as atividades de projeto como atividades de pesquisa'

[4] 'tentamos fazer uma interpretação econômica sem sermos economistas, tentamos fazer uma interpretação sociológica, sem sermos sociólogos, e assim por diante.'

exploratory practice within traditional models of academic research and (2) practice as a generator of relevant questions that are explored within the structure provided by traditional models of academic research, and (3) the problematic relationship that occupies the central position on the practice/research spectrum which states that design practice *is* academic research.

The first relationship between design practice and academic research exists within traditional, namely positivist and post-positivist, models of academic research where the role of practice is exploratory. In this type of relationship hypotheses are created and ways of investigating these possibilities through experiments, models, interviews, representations, observations, etc., are considered. The other pole of the practice/research relationship exists within design practice. In this scenario, during the creative process, the practitioner surrounds herself with information that is deemed relevant for the specific design problem in the hopes of reaching an insightful solution. Within this model, design practice contributes to academic research as a means of generating the questions that are considered important in the practice context and that should then be investigated within the dominant template of academic research.

The problematic relationship between design practice and academic research appears when the original knowledge that results from design practice *in itself* contributes to the advancement of that community. Above it was explained how the definitions of academic research that are offered by research funding bodies highlight the contribution of the new knowledge to the community as being a defining characteristic of academic research. It would therefore be a logical assumption that design practice that contributed to the area in this way would be academic research. Following this model, design practice would be the same as academic research and would mean, for instance, the design of Brasília would have awarded Lúcio Costa a PhD and Picasso could have equally received the doctoral title for his painting “Demoiselles D’Avignon”.

Two arguments can be put forth to explain this particular position that design practice occupies in academic research in these areas. Perrone (2001) defended that what would distinguish this particular research sub-group would be the non-conformist education of the practitioner that would make her resist systematization that is a necessary condition of academic research. This argument would classify the area of design practice as distinct in

some way and deserving of certain concessions. This perspective would suggest that academic research that is developed in these areas should enjoy special privileges because the area would be in some way special. Biggs (2000) preferred the argument that suggests the opposite opinion: that these areas are not different from the other disciplines where academic research is conducted and for that reason, if the design practitioners require different criteria (such as the architectural design as thesis) they should make a persuasive argument that defends the use of alternative conceptualizations and not the suspension of the established criteria. This perspective suggests that academic research in areas of design practice would be different but equal.

A reconciliatory position between these two perspectives would defend that the academic research defining criteria should be unpacked so that the conceptual essence of these criteria can be reconsidered in light of the particularities of design practice. It would be necessary to take relevant concepts that are accepted in the design practice community into consideration when rebuilding more inclusive academic research criteria (Biggs & Büchler, 2008a). The direct acceptance of practice as research creates objective problems. One aspect that makes the recognition of this type of research as academic production potentially problematic is the non-traditional nature of its results. Another problem is in the specificity of the many concepts that are used in design practice.

There are exclusive understandings of concepts such as 'knowledge', 'rigour' and 'artefact' in areas of design practice, to name a few. Notions of 'knowledge' in its various forms and manifestations have been discussed by Newbury (1996), in the second Research into Practice conference and its selected papers that were disseminated in the on-line journal *Working Papers on Art and Design*[5] (2002), and by the British project "non-traditional knowledge and communication" (NtKC[6]). The question of academic 'rigour' in research that is developed in design practice areas has been discussed by Wood (2000) and Biggs and Büchler (2007) in the few texts that specifically treat this question in this academic area. Government agencies that regulate the quality of graduate and post-graduate courses such as the British QAA (Quality Assurance Agency) demand that rigour be observed in all

[5] http://sitem.herts.ac.uk/artdes_research/papers/wpades/index.html

[6] http://r2p.herts.ac.uk/ntkc

academic activities (understood as education and research) however do not supply a clear definition of the term. The role of the 'artefact' in academic research was the theme of the 2004 Research into Practice conference at the University of Hertfordshire[7].

Today in Europe there are collections of self-professed practice-based PhDs and research that are financed by research funding bodies. However, even in the UK where PbR has been recognized for longer, there is still considerable disagreement about what constitutes PbR as well as what constitutes indicators of excellence in academic research in general. Evidence of this situation can be seen in the disagreements amongst peer groups in the quinquenial British Research Assessment Exercise (RAE) in art and design about the role of design practice and in the various debates on academic discussion lists such as PhD Design[8] and Practice-led Research[9].

The existence of these discussions around so-called PbR suggests that the European community may gain competitive academic advantage if they can formalize and conduct research under this new label. However, this matter cannot be responded to directly due to the inbuilt disagreement about criteria. Without clarifying the criteria, the question of PbR is circular. Criteria, or the necessity of domains of recognition, must have the stability and transparency needed to sustain recursive use, but also the disputability that allows modification owing to the needs felt by the practice community as well as the academic community. For example, the statistical data on PbR PhDs do not give a account of whether or not these PhDs respond to a group of criteria (be they expanded and more inclusive) that is compatible with (and comparable to) those held in traditional models of academic research.

The criteria that were developed to cater to this sub-group of research (that is developed in the areas of design practice) would have to be different to those that are normally applied to the scientific model of academic research in order to account for the particular and specific notions of design practice. What this means in practical terms is that if a world

[7] http://sitem.herts.ac.uk/artdes_research/res2prac/r2ppast.html

[8] http://www.jiscmail.ac.uk/lists/phd-design.html

[9] http://www.jiscmail.ac.uk/lists/AHRC-PL-REVIEW.html

mapping of PbR according to the traditional criteria of academic research that are used today, it is likely that not a single example of PbR would be found. This is because PbR by definition and in principle deviates from the central criteria that are commonly used to qualify academic research as such.

In this sense, a project about the issue of PbR would have to problematize the notion of this sub-group of academic research. Such a study would also have to verify whether the extension of criteria so as to incorporate conceptual understandings that are held by this sub-group would bring some advantage to the academic community, or whether it would merely dilute high quality academic research. Research that is recognized as academic in this area is essential so that the disciplines that involve an element of design practice gain credibility. There is, however, a problem in that research that is recognized as academic is that which meets the traditional norms of research.

In 2003 the UKCGE (UK Council for Graduate Education) commissioned a report on PbR which presented a final argument for the relevance of studying PbR as a means of improving the academic industry's competitive advantage. The report identified three main principles of doctoral research: 'contribution to knowledge and understanding', 'critical knowledge of the research methods' and '[be] subject to an oral examination by appropriate assessors' (UKCGE, 2003: §2.2).

This analysis fits the re-evaluation of the aim of the PhD in the UK which was done as a consequence of the expansion of the university disciplines to include non-traditional areas such as art and design. The re-evaluation aimed to differentiate the fundamental content of research from the format in which it was being delivered, i.e. the textual thesis. The analysis aimed to facilitate the identification of qualities that could be demonstrated in a non-textual or practice-based way. As a result, many contentious areas were identified and the conclusion that was reached was that:

> What is needed is a set of nationally agreed definitions of standards for the award of doctorates (see below) framed in such a way that they are sufficiently rigorous to secure demonstration of the qualities outlined at 3.2 above, but sufficiently inclusive to allow all subjects to find expression within them. (UKCGE, 2003: §4.3)

The UKCGE report also identified how this could be accomplished:

> This inclusive model would involve either demonstrating/accepting that the activities and outcomes outlined in earlier sections could reasonably be seen as consistent with a traditional scientific model, or broadening the model so as to encompass the entire continuum from scientific to practice-based research. This would entail re-defining the former in general terms of, for instance, the acquisition of relevant data, the exercise of critical and analytical skills, sustained and coherent argumentation, and clarity and (relative) permanence in presentation, rather than in the narrower terms of formation and testing of hypotheses. Such shifts, which have occurred already in the system across all manner of disciplines, perhaps need to be formally acknowledged and embraced. It would follow from this approach that the creative process involved in practice-based doctorates can be seen as a form of research in its own right and, as such, as equivalent to scientific research. Thus, the product and associated creative process presented as part of the doctoral submission can be viewed as demonstrating the defining competences of doctorateness [sic] in the 'same way' as in a traditional research based submission. (UKCGE, 2003: §4.4)

In this recommendation that resulted from the examination of PbR it is suggested that there would be a benefit in studying PbR however this would not be a sub-group but rather an approach to academic research as is the scientific approach to research. In the report it was also highlighted that there are a large number of projects in the humanities in general that, strictly speaking, do not fit the traditional and/or scientific model of research. These studies that are being developed in various areas of the humanities (and not only in areas of the design practice) are evolving in the direction of the model that is proposed for PbR.

It can therefore be concluded that the systematic unpacking of concepts from the traditional model of academic research in order to rebuild a model of research that is more in line with the needs of the areas of design practice is a worthwhile pursuit. There is also great potential for the increase in competitive advantage for the academic community that is involved in the structuring of such a model.

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5 KEYWORDS

Practice-based Research, criteria, criterion-based approach, visibility, definition