We will begin with a brief analysis of some terms and debates; then proceed to some examples of the development of a research economy in art and design education which has accompanied the expansion of what have come to be termed (amongst other things) 'practice based PhDs'. In conclusion, we will touch on the issue of research degrees training and the centrality of the 'artefact debate' to the successful negotiation of the 'practice-based' research degree.

At the core of the question that gives this conference its title – What is the role of the artefact in art and design research? – are two pairs of contrasts. The first pair marks a difference between explicit and transferable knowledge on the one hand, and embodied and inalienable (ineffable, even) knowledge on the other. The former is generally perceived to pertain to scientific research; the latter to artistic practice. Our second contrast is that which separates the objective from the subjective in the research process. Generally speaking, Science is viewed as a systematic process of discovery delivering objective knowledge (the genetic code of the fruit-fly, the molecular structure of water) independent of any subjective considerations. Art and design, on the other hand, are seen to deliver – to invent – products that are dependent on the specific character of the maker (Picasso's Demoiselles; Eames' Chair) to such an extent that their existence as transferable knowledge is fatally compromised.

Our intention in this paper is to work through these sets of differences using the concept of construction. The 'discovery' of construction, of the possibilities of an artefact made of distinct and separable parts, is a defining characteristic of the last hundred and fifty years of practice in art and design. The concept of construction also situates the artefact as, first and foremost, an object that exists 'under the sign of thought' before it is seen as the product of a unique creative personality. The dominance of thought is retained, whether or not a thought process is systematised and regularised in the form of a research investigation. Thus a respectable art historian like Michael Baxandall can discuss the Forth Bridge and Picasso's portrait of Kahnweiler within the same conceptual framework, in
which the finished artefact is seen as the outcome of ‘a problem of which [the] . . . product is a finished and concrete solution’, using a process of assembly from diverse parts, and employing a selection of elements drawn from available resources (Baxandall, 1985:14-15). It is also the reason why, following the recent fire at a Momart storage facility in London which consumed many works of art including the Chapman Brothers' tableau Hell, Dinos Chapman was able to remark “It's only art, we'll make it again” (The Telegraph: 26 May 2004). Whether this is bravado or not, at the core of Dinos Chapman's statement is a definition of the artefact as a 'machine' that can be re-assembled according to a plan, independently of the individual characteristics of its makers. This is not to argue that the Chapmans' Hell is a piece of research, but rather that its mode of manufacture, and the patterns of thought and intention that it embodies, provide a platform for the practice of research, in a way that the modes of manufacture for a painting of hell by Hieronymus Bosch do not. This has nothing to do with the difference between the artefact that is built and that which is painted, since a modernist painting such as Manet's Déjeuner sur l'herbe, is as constructed as a set of boxes by Donald Judd. Rather, the key issue that we are approaching through the term 'construction' is the conception of the artefact as a set of discrete and identifiable elements that are communicable to others rather than as a single, indivisible entity; and the possibilities this opens up for the practice of research as an ordered process of inquiry, a systematic analysis of available data (and informed judgment in the absence of complete data), and a contribution to knowledge within a defined field.

There are, however, considerable obstacles and pitfalls in the transition from the constructed object to the contribution to knowledge, pitfalls that have nothing to do with the supposed intractability of the object (the so-called 'talking pot' conundrum), and which have everything to do with the economies of the object in the gallery system, as well as those which govern the development of design products for mass manufacture. The nexus of the problem of the transition from artefact to knowledge is the issue of the validation of construction as anything other than a new way of making art, architecture and design. One can argue, for example, that during a particular short period in the early twentieth century, Pablo Picasso and Georges Braque constructed artefacts in order to pursue a systematic inquiry into the condition of pictorial space. However, the audience for the pictures and the audience for the inquiry into pictorial space cannot be assumed to be the same thing. To see Cubism as a contribution to knowledge requires that we take construction seriously as a mode of thinking, and as a mode of distinguishing a process of assembly from the personality of the maker.

When one analyses extant and current debates in art and design research, an entirely predictable pattern of allegiances can be traced, which revolve around the contrasts between transmissible and embodied knowledge, and objective and subjective practices, that we introduced at the start of this paper. The assumptions that these distinctions generate, mean that 'hard-nosed' advocates of scientific probity, who speak against the whole idea of research in art and design, find common cause with those practitioners who favour the notion of art and design practice as inalienable, embodied knowledge; the latter frequently, if unwittingly, using this as a reason for collapsing research and practice into the domain of practice and insisting upon an unarticulated 'practice qua research' correspondence. The common theme here is that art (as art practice) is one thing, and research (including the nascent forms of 'practice-based' research in art and design) is quite another, and that anyone who thinks differently is misleading either themselves, or the legions of new postgraduate students who are obliged to speak the new vocabulary of question, context and method. For the word 'art' substitute any other discipline – medicine, electrical engineering, psychology – and the distinction between the practice of a discipline
and research into, through, or for that discipline becomes clear (see Frayling, 1993:5 for an early outline of modes of research in art and design).

In an article published in The Observer in 2002, Lewis Wolpert (Wolpert, 2002) argued forcefully against what he saw as the epistemological error of collaborations between artists and scientists, in reference to the Sci-Art Project funded by the Wellcome Trust. Wolpert placed particular emphasis on the question of peer-review, claiming that there is no way to apply criteria to art, judge it and suggest revisions, as there is for a paper submitted to a scientific journal. Unless the process of critical review of publicly exhibited works of art, leading to reflection and development in artistic practice, is taken to be equivalent to the process of peer-review in research (mistakenly in our view), Wolpert is correct insofar as he maintains his specific distinction between art and science; we would assert, however, that the activity of formal research in art and design, along the lines herein argued as a mode of construction subject to the rigours of peer-review, revision and examination, does have parallels with the advancement of other fields of research inquiry, including science. Consequently, the collapse of research in art and design into the public practice of art and design causes untold problems, especially for the advocates of equivalence.

For a proper overview of the debate, Wolpert's comments on the impossibility of proper peer-review procedures in art should be compared with those of Jon Thompson, in his speech to the 'Research and the Artist' conference at the Ruskin School in 1999 (Thompson in Payne, 2000:36-7). Thompson claimed that research in art is hamstrung by the fact that its field of inquiry is art practice itself, and that therefore advances in knowledge were congruent with advanced practice, which isn't 'knowledge' at all. According to Thomson, the only criteria for deciding whether or not an artist is fit to undertake a PhD is whether or not they are already established in the economy of the gallery system. Unfortunately, within this gallery system, 'construction' becomes a term which is either in or out of fashion, and research is doomed to remain confined to the gathering of data as a resource for the making of an artwork, as was shown in the human assemblage of Jeremy Deller's Battle of Orgreave project, in which the more-or-less accurate reconstruction of an historical event as a work of art raised more questions than it answered. In the case of The Battle of Orgreave, its existence as an assemblage allowed for various categories and levels of data to be introduced, but its destination in circulation within the worlds of art and the media did not allow for knowledge as an outcome.

This distinction between practice and knowledge, however, is elided in the most important measure of research activity, the Research Assessment Exercise. The RAE, intended both to measure the quality of research within the Unit of Assessment, and to ensure parity with the quality of research in other disciplines, is the single greatest determinant in the funding of research activity in academia and, by extension, to the sustainability of a research culture in art and design. As has been argued (Mottram, 2004), one of the largest categories of submission to the RAE in 'practice-based' art is the exhibition of artefacts in galleries, without commonly agreed or objective, published criteria for the rating of research outputs based on the site of their dissemination. It follows that the quality of research is measured by the esteem of the venue, and not by any demonstrable contribution to knowledge in the discipline. It could be argued, therefore, that the rating (and subsequent financial support) of art and design research is subject to the conventions of practice, the idiosyncrasies of the gallery system, and the whims of taste; and that it might be financially and strategically preferable, to produce research of questionable quality or relevance that is well exhibited rather than important research that reaches a specialist, but limited, audience.
How is it possible to make the transition from the constructed artefact to the contribution to knowledge? We might begin by taking our cue from Richard Wentworth, who, in his address to the Ruskin School conference in 1999 (Wentworth in Payne, 2000), reminded the audience of a comment that a journalist had made about the crowd at the private view Saatchi gallery in Boundary Road, namely ‘who are they, where do they come from, and what is their economy?’ When we can begin to ask the same questions about the art and design researcher, and distinguish their economy from that of the gallery scene, the fashion magazine and the shop front, we can begin to make useful and valid connections between the construction of artefacts and the production of new knowledge. For this to happen, it is vital that research students and academics in the art and design field maintain communication with each other, in order that the hegemony of the gallery or the showroom does not overshadow the particularity of their activity.

If the cards are currently stacked against self-declared, autonomous researchers in the field of art and design, how is it possible to make the transition from the constructed artefact to the contribution to knowledge? With that purpose in mind, we would like to introduce some models of research in art and design education, that establish some of the elements of a research economy which is related to, but distinct from, those that link the studio to the gallery and the museum. Our examples are drawn from fine art and design for performance.

A particularly relevant example to consider in the context of the role of the artefact in art and design research is the case of a first-year PhD candidate at Wimbledon School of Art who has engaged with the problems of formal research from a background as a practitioner – a producer of artefacts – and teacher. Faced with the challenge we have described, of attempting to negotiate the transition from constructed artefact to contribution to knowledge, the candidate, who we shall refer to as 'L', has outlined a programme of research and developed a model of practice-based inquiry which addresses directly the concept of construction as a determinant in the production of the knowledge-bearing artefact, while avoiding the problems of practice qua research, or appealing to the authority of the gallery-situated artefact as the measure of the contribution to knowledge. In short, the candidate has understood and developed a practice of research that admits the authority of the research degree, with its ineluctable epistemological requirements, over the authority of the art world.

This has involved a significant process of re-conceptualising the status of the artefact, and indeed the attributes of artefactuality, within a research framework, distinct from the models of validation commonly ascribed to practice. As a departure from the conventions of practice, the challenge is considerable enough within the activities of a PhD candidate who remains a practicing artist and teacher; but when the subject of doctoral research is considered, the achievement of negotiating a successful route through identification of field, development of research questions, and construction of a methodological strategy suited to the purpose is notable.

The subject of candidate 'L's doctoral research is the representation of pathology in the context of fine art drawing, something which the literature survey has revealed as being without direct previous exemplars, except in the parallel but distinct field of anatomy; this makes for a complex set of relations across disciplines but particularly, within the context of this paper, requires reconsideration of the role of the artefact in art and design research. This can be demonstrated by initial field research by the candidate that situates the drawn pathology specimen within the loci of medical illustration, medical imaging and the cognate
field of anatomy. These categories are unsuited to the development of an art, let alone a project of research, of pathology drawing; equally unsuited, however, is the literal transposition of artefacts from one discipline to another, even if research and medical ethics were to remain unconsidered.

In making an intervention into the territory stumbled upon by Lewis Wolpert, to which we referred earlier, 'L' has recognised the problems inherent in ascribing value to the views of an authority in one field when transplanted indiscriminately to another; and in the mode of a researcher, rather than an offended artist, has used the literature review to inform the design of the doctoral project in a way which necessarily is informed by conventions and practices in fine art and pathology, while constructing new models for the production of the artefact that place the research knowledge in a domain outside its parent disciplines. It can be expected that one of the outcomes of this project will be an approach to the artefact as an instrument of research that will be transferable across the various disciplines with which this project has been engaged.

Another example of how routes from the artefact towards transferable, transparent knowledge are being pursued is a recent project studying collaborative design for performance across dispersed networks, conceived and realised by Michael Pavelka and David Gale at Wimbledon School of Art. This project, run at the end of 2003 in collaboration with Ryerson University, Toronto, aimed to disclose a set of interactive structures and functions, and knowledge exchange procedures, underlying the practice of collaborative design for performance. Here the issue was not simply whether the artefact is viewed as an assemblage or a single, indivisible entity, but how the process of constructing theatre objects in digital space could produce research knowledge that could be transferred to more traditional domains of practice.

At the core of the project was a close analysis of the practice and allocation of roles within digital collaboration itself, working from the initial hypothesis that, in a virtual domain, a performer in Toronto might make as much contribution to the construction of a theatre environment as a designer in London who, conversely, may be engaged in manipulating the movements of the actor. In their report on this project, Pavelka and Gale noted that one of the crucial research outcomes of this procedure of critical reflection on the elements of a performance, was the possibility of evolving more precise and data-rich feedback mechanisms for the study of director-performer and performer-environment interactions. Thus, the construction of an artefact serves a research project on the nature of collaboration in digital space; in turn, the outcomes of this research serve practitioners of live performance.

Finally, it is our contention that practitioners must have access to a set of core research values and a transparent research vocabulary, in order that the labour of research does not become simply another contribution to practice, rather than a contribution to knowledge. This is where the cold, cruel word 'training' comes in, (a term recently 'softened' by the QAA and changed to 'research skills development'). For those who subscribe to the notion of inalienable, embodied knowledge secreted in unique and indivisible artefacts, the idea of training artists and designers to become researchers will be anathema. A scientist, on the other hand, will tell you that with the correct training in the relevant methodologies of scientific research, any competent investigator could find out the structure of the human genome, or the chemical formula of water.

We contend that it is entirely feasible, and indeed desirable, to provide training for research degree students in art and design based on the premise that, firstly, research is a
viable mode of art and design practice, as it is for the practices of the engineer or the doctor; and that secondly, to move from practice to research depends on the potential for conceiving the artefact as divisible into an ordered arrangement of parts that can be articulated as elements of a research process, whose primary outcome is knowledge. The need to understand that practice and research entail differences in terms of approach, outcome and constituency is as important for supervisors as it is for research degree candidates themselves. In an institutional environment in which the modernist concept of the object as an assemblage is a cliché, and within which we all pay lip service to the idea of research process, transferable knowledge is the last taboo. Knowledge transfer is taboo because it seems to violate the terms of the art and design artefact, in a way that radical design practice and conceptual art could never do. Moving beyond this taboo requires us to think of new forms of causality, economy and teleology for the art and design artefact, within an economy of research.

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