

EAD:06 DESIGNsystemEVOLUTION

Title: Seeing and Seeing Through the Crisis of the Artificial

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Objectives of the research / Approach or method used / An indication of the nature of the main findings:

This paper stems from initial doctoral research into the potential of observational research techniques for visual communication practice. The overall objective of this ongoing research is to explore appropriate forms of communication that can adequately represent disparate types of information and ideas, prevalent in dealing with complex design situations, to various participants. This paper should be seen then as a fragment of these overarching concerns and a continuum of my earlier and ongoing research interests and publications. As such I offer no definitive conclusions in this paper that, though more speculative than concrete, is laying the foundations for the later empirical aspects of my research project. Such speculation (hypothesis?) is so far based upon the typical mix of literature reviews, design teaching and design practice.

Though I examine the potential of photo-based observation for visual communication practice in this paper, I go on to explore the implications of subjectivity in such an endeavour and finally speculate that visual communication design is potentially the most appropriate representational form for communicating complexity in design situations. In this sense I am not making an argument that designers don't already use a range of visualisation techniques in their practice, rather that there is room for the further development and greater understanding of them and that, in visual communication design at least, such techniques are largely outcome focused and not research focused.

Abstract:

Alexander (1964) and Jones (1992) argued that design-by-drawing was not up to the task of dealing with complex design 'problems'. In a similar vein Lawson (1980, p18) argued that 'problems' which aren't visible tend not to come to the design-by-drawers attention. To overcome this Alexander developed a 'language' of representation, based on mathematics, to help eliminate this subjective bias of designers in determining the key issues and relationships in complex design settings. Design Methods promoted a rational procedure of analysis / synthesis as the natural order of design to replace the intuitive model that dominated. On this basis Design Methods

has long been regarded as flawed, however I would argue that the question of representation that Alexander in particular, and Jones implicitly, addressed was correct, though it remains unresolved.

Previously I have defined the “crisis of the artificial” as being the challenge that critical theory has mounted to the still commonplace view of design, as a largely natural and intuitive process, by examining the ideologically constructed nature of the design process (Roxburgh 2004). In this paper I will outline an expanded definition of this term that proposes that this crisis is also a result of design still not having a suitable ‘language’ through which to communicate, to ourselves, our perceptions and experiences of the complex world we live in and shape as designers. Using my ongoing experience of the potential of observational photography as a key research method for design, I will argue that a reflective, phenomenological perspective should inform the development of such a ‘language’. In this sense I am making a counter claim to Design Methods; that is that subjectivity is a necessary component for success in any design / research enterprise; and that visual communication design could play a central role in the development of appropriate forms of ‘language’ to represent complex design situations, despite the earlier perceived problems of drawing. This research is part of a continuing inquiry that asks the question ‘Can we see what we know first, in order to reveal what we don’t know?’

THE CRISIS OF THE ARTIFICIAL REVISITED

“The occurrence of interest in methodology in a certain field is usually a sign of crisis within that field...”

Rittel (1972) qtd in Downton (2003, p45)

On the basis of Rittel’s observation clearly design, the field of the artificial, has been in crisis for some time. This crisis has not been precipitated solely by critical theory but more significantly was precipitated from within, as signalled by the Design Methods movement. Those in the movement correctly diagnosed the ‘problem’ of design as being that practice as it was then (and still largely is) conceived, was not up to the task of designing in increasingly complex settings and on an ever-expanding scale. On this basis my earlier definition of the ‘crisis of the artificial’ holds true; given this diagnosis, one of the key objectives of the movement was to criticise the inadequacies of the intuitive design approach and argue instead for an analytically and methodologically explicit design process. That this crisis has persisted for so long is indicative that the ‘solution’ proposed by Design Methods to the diagnosed ‘problem’ was flawed, though the logic of its conception was sound. These flaws are not surprising in hindsight and there is no shortage of commentary on the failings of Design Methods, which I have little interest in recapping in detail here.¹ Of more interest to me is the nature and persistence of the ‘problem’, and the logic behind some of the ‘solutions’.² I will briefly refer to the work of Alexander (1964) and Jones (1992) to pursue these interests.

Justifiably much of the criticism of the Design Methods movement is levelled at the overly analytical and objective model of design it proposed. Though Jones argued for analytical clarity in the design process as a way of dealing with the complexity of higher order design ‘problems’, as opposed to relying solely on intuition, he also argued that human subjectivity and intuition were an inescapable and desirable part of design as he was reconceiving it. This aspect of Jones’ work doesn’t feature in much of the criticism levelled at it and I would contend that his greatest failing was not that he was an absolute rationalist, he wasn’t, rather that he failed to propose any methods that adequately embraced subjectivity and intuition. Jones’ recognition of the importance of subjectivity is a crucial though overlooked aspect of his work and it is an issue that will re-appear throughout this paper. I will resist dealing with the implications of subjectivity, as it arises, instead dealing with it in a more coherent manner towards the end of this paper.

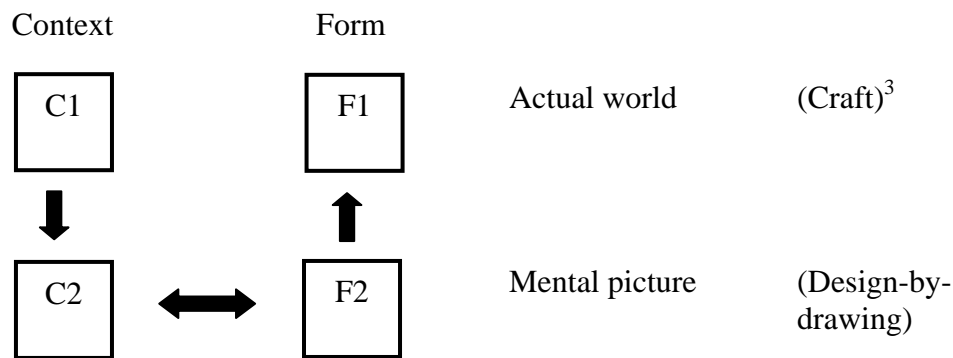
The other crucial point that Jones makes, is that design-by-drawing, the representation and modification of possible design ‘solutions’, was not up to the task of dealing with the increased complexity of higher order design ‘problems’ (Jones 1992, pp27 & 41). In outlining its limitations, Jones acknowledged that by abandoning drawing, the system designer “has no medium in which to communicate the essence of the mental imagery with which he could conceive of a tentative solution...” (Jones 1992, p42). This ‘problem’ Alexander had earlier set out to address. More-so than Jones, the criticism levelled at Alexander is largely justified for though he recognised that subjectivity would play some part in Design Methods he seemed intent on eradicating

¹ For more detailed critiques see for example Downton 2003, pp39-47; Hillier 1996, pp10-19; Lawson 1980 pp18-19 & 55-58; Rowe 1987, p110-111.

² I have placed these terms in inverted commas as I have no time for the problem solution metaphor for design yet am using them to reflect something of the language and thinking of Design Methods.

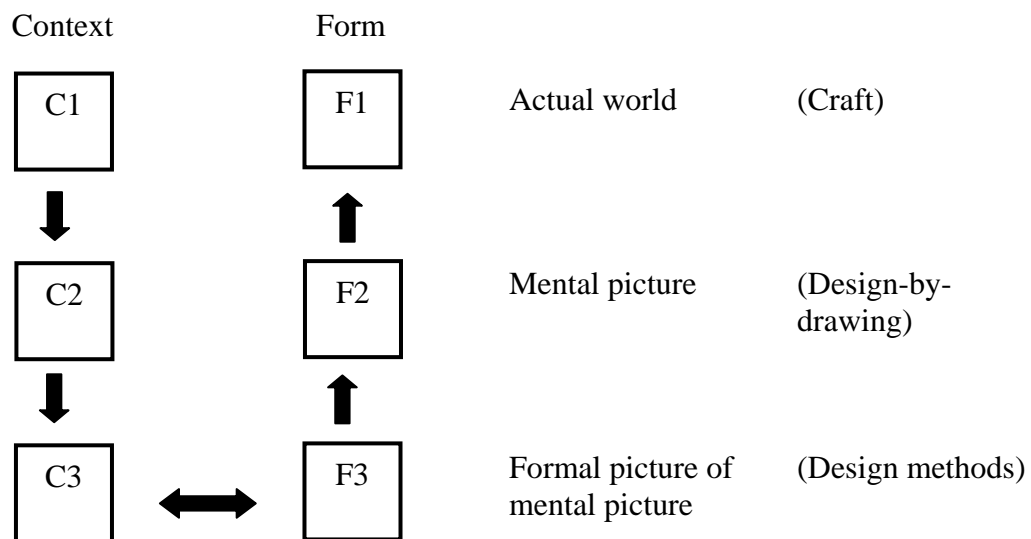
it. Like Jones, Alexander argued that design-by-drawing was redundant. His attempt to eliminate subjectivity and overcome the limitations of design-by-drawing was to turn to mathematical representation as a vehicle for communicating the relationship between components of complex ‘problems’. His rationale for doing this was that he believed that design-by-drawing, as represented in level 2 of figure 1 (Alexander 1964, p76), operated at a level of abstraction from the reality of the actual design situation (level 1) and was full of the designer’s bias.

Figure 1



He argued that a further level of abstraction from the reality of the design situation, as represented in level 3 of figure 2 (Alexander 1964, p76), was the way to eradicate this bias by retaining only the abstract structural features of the ‘problem’. This, he proposed, would eliminate from the design process “...the bias of language and experience” (Alexander 1964, p78).

Figure 2



Perhaps the greatest failing of Alexander’s work then is not just its positivist framework, but that firstly he proposed an additional layer of abstraction beyond that already created by design-by-drawing, and secondly that the abstract language he proposed to replace it with was mathematics. The great irony of this was that Alexander drew upon his own subjective context in developing his ‘solution’; he had

³ NB. Terms in brackets are my own and not part of Alexander’s original diagram.

a degree in mathematics as well as architecture. Additionally he failed to consider the context in which this 'solution' was supposed to be used; the world of design practice. The use of maths was always going to be problematic given it is a symbolic form of representation, or language, that few designers would have experience in or an inclination towards. To overcome this designers and prospective designers would need to be trained in the kind of complex maths Alexander proposed. To succeed this would have required a massive culture shift within design, one that was unlikely to occur. In choosing mathematics as the preferred form of representation Alexander produced a 'solution' to the 'problem' he diagnosed that demonstrated, in his terms, a very poor 'goodness of fit'. This is largely a consequence of trying to eliminate subjectivity and experience.

THE CRISIS OF THE ARTIFICIAL REDEFINED

Criticisms aside, the significant point of the work of Jones and Alexander is their recognition of the limits of drawing as a suitable form of representation in dealing with design in a complex world, and that alternative modes of depiction were required. That the crisis of the artificial has persisted for so long is indicative that design is still struggling to find a suitable alternative. This crisis has also been exacerbated by the competing claims upon design from the largely positivist legacy of Design Methods, best exemplified by the problem solving approach to design education popular in the 1980s and early 1990s, and in reaction to that the retreat back into the habit of intuition.

Notwithstanding the limitations of drawing, as argued by Alexander and Jones, the significance of its role in the design process has continued to pre-occupy a wide range of researchers (See for example (Henderson 1995; Oxman 1997; Suwa & Tversky 1997; Van Der Lugt 2000). This continued interest indicates that visual representation is still a critical tool in design. Searle (1983) argues that vision is crucial to human intention; that how we act within and upon the world is premised on how we see and perceive the world. Such action is bound up with intention and therefore the basis of design in the broadest sense. Given this, it is hardly surprising that representation in the form of drawing still plays such an important role in the projection of what is yet to be. This suggests two things:

- 1) That old habits die hard; almost certainly the case.

but more importantly

- 2) That the visual is the key to the kind of language design requires to 'see' what I call the ecology of the artificial, which consists of the complex relationships between our design projections of the artificial world and our experiences of it.

Now that I have revisited the crisis of the artificial I would like to redefine it. The crisis of the artificial is not just the challenge to the view of design as mysterious and intuitive thrown out by a regime of critical inquiry; it is more profound. It is the crisis of finding simple and appropriate forms of 'language' through which we can depict complexity and speak to each other of our observations and experiences of it in order that we can imagine and manage the transformation of the artificial in a complex world, to manage and transform the ecology of the artificial. This redefinition also has implications for the role of subjectivity.

LOOKING FOR REPRESENTATION

So where does this leave us? I have argued, perhaps cursorily, that:

- drawing is limited in dealing with complexity;
- maths failed as the form of representation to replace drawing;
- drawing is still a significant form of representation in the design process;
- despite this we still haven't resolved the issue of the limits of drawing in dealing with complexity;
- the crisis of the artificial, as I have redefined it, still persists;
- vision is significant in informing intention and action.

Downton makes the argument that design knowledge has lived in the shadows of scientific knowledge (Downton 2003, pp35-47). The Design Methods movement's adoption of a quasi-scientific approach to design is a consequence of the background of many of the scholars involved in it and insecurity in design's intuitive aspects. Perhaps when Design Methods emerged, rejecting drawing, the basis of much design activity, as a way of dealing with complexity made sense when considering the context in which complex design 'problems' were addressed. This context included teams of people, many from non-design backgrounds, working on the same project. The rejection of drawing and the search for more 'objective' forms of modelling can be seen as an attempt to develop a common language of communication across such teams and a consequence of trying to get design to conform to a more 'professional' and less 'artistic' mode of behaviour. It also indicates insecurity in two of design's attributes, subjectivity, in the guise of intuitive thinking, and making the unknown visible through visual modes of representation. In today's context such insecurity is misplaced and design, if anything, should be more secure in these attributes as there has been a renewed interest in the both subjectivity and the visual across a range of academic and professional activities. This renewed interest has occurred in no small measure as a consequence of the saturation of the developed world with visual imagery. Necessarily this has implications for the human subject as the visual implies a seeing knowing subject. Clearly this is at odds with the objective inclinations of Design Methods.

Stafford (1997), for example, makes the argument that vision plays a critical role in knowledge production and provides an overview of a range of seemingly conventional disciplines that are increasingly engaged with an emerging visual epistemology. These include philosophy, diagnostic medical imaging, astronomy, cognitive sciences, neurobiology, artificial intelligence, and genetics, to name a few (Stafford 1997, pp8-9 & 23-25). There has been renewed interest in photo-based forms of inquiry and communication in phenomenological ethnography that involves theorisation of the relationship between subjects, vision, experience and knowledge (Ball & Smith 1992; Banks 1998; Prosser 1998a). Education is another field that has embraced the visual as a means of inquiry, communication and knowing (Mitchell & Weber 1998; Wetton & McWhirter 1998). Visual culture is an growing field of study that is informed by a wide range of humanities sub-disciplines and similarly is concerned with the role of the visual in communication and knowing (Elkins 2003; Walker & Chaplin 1997).

Perhaps we are most familiar with the renewed interest in the visual in the form of the application of linguistic semiotics to visual imagery. The best example of this, and

one of the most comprehensive proposals for a “grammar of visual communication”, is the work of Kress and Van Leeuwen (1996). They have developed such a grammar on the basis that visual communication and, by extension, visual knowing are increasingly dominating our lives. The extent to which this view has become mainstream can be seen in the NSW secondary English curriculum which encompasses the analysis of film, television and still images in its literacy program. Given these developments and recognising that the context in which much design is conceived, functions, and is experienced, is grounded in the visual, the key to overcoming the limits of drawing is not to reject it but to supplement it with other means of visual representation and inquiry. I am making the argument that visual forms of representation, and as importantly investigation, beyond drawing, are the most suitable tools for designers in dealing with complexity.

Let us for a moment though, return to the limits of drawing in dealing with complexity. Lawson notes that “the disadvantage with drawing is that problems which are not visually apparent tend not to come to the designer’s attention” (Lawson 1980, p18). This is the situation when design is characterised as a largely aesthetic activity, as is the case in design conceived as an intuitive, artistic enterprise; the sources of information investigated will largely be visual. This was the fundamental premise upon which Alexander based his search for an alternative form of representation, to bring non-visual issues into the metaphoric field of view of the designer. So the issue of representation in complex settings then, is not simply concerned with representing what might be, the possible ‘solution’. Nor is it limited to representing the visible manifestations of what is known or experienced, the visually apparent aspects of the ‘problem’. The most significant aspect of representation, in relationship to complexity, is the ability or not of any medium to represent those issues or concerns that have no visible manifestation.

In summary, in working with complex design situations the realms of representation required are:

Realm (1): What can be seen – representation of visibly manifest concerns, issues, and experiences. The realm of the f/actual.

Realm (2): What can’t be seen – representation of invisible and intangible concerns, issues, and experiences. The realm of the anecdotal.

Realm (3): What could be seen - representation of the situation as transformed. The conjectural or what Downton (2003, p60) calls the counterfactual, the realm of design.

FROM THE F/ACTUAL TO THE ANECDOTAL

My key interest at this point is the relationship between Realms (1) and (2) and the potential for phenomenologically informed photo-observation to be used as a medium to capture and represent Realm (1) and to act as a bridge into Realm (2).

Despite the interest over the past 30 odd years in developing a more explicit understanding of the design process, much design practice has continued to rely on a largely intuitive approach and focus on designerly intention and outcomes. Human experience of the material (and artificial) world, and the visual deluge mentioned earlier, in which these outcomes emerge has to a large degree been overlooked as an

important source of design information. Photographic observation is well placed to capture the traces of such experiences.

In the interests of developing an explicit design process such a regime of observation needs a framing theory. Perhaps the most dominant framing theory of photographic imagery over the past few decades has been semiotic analysis but it is a theory of reading signs, developed from literary theory, which privileges the viewer in the contest of meaning. As the focus of design is shifting to valuing experience and it is a practice of configuration, semiotics is not very useful and a framework that values lived human experience is more appropriate. This suggests a return to phenomenology and there is a rich and growing body of ethnographic photo-based observation framed from such a perspective that I have referred to earlier. Research in this field is not concerned with developing an objective and authoritative account of what is seen; rather it is a kind of dialogue about a set of experiences in which photographs are an interpretation of 'reality' (the f/actual) as opposed to a reflection of it (Harper 1998, p35; Prosser 1998b, p105). Dialogue and experience also implicate subjectivity.

The range of photographic techniques that can be used are standard observational fare; participant observation, fixed camera observation, subject self-photographic observation, photo surveys / questionnaires, archival photographic sources and so on. Each technique has its own advantages and disadvantages and must be chosen dependent on the research setting. However, the advantages photographic observation has over drawing as a means of recording an observed 'reality', Realm (1), are its rapidity of execution, its proximity to the 'real', and its ubiquitous nature. Rapidity is important because significant amounts of visual imagery can be recorded fairly quickly ensuring good coverage of a particular setting or event. Photography's ubiquity means that many participants likely to be observed, make their own photographs, or speak about photographs, are familiar and comfortable with it as a form of communication. Photography's proximity to the 'real' though, is certainly not something we can take for granted in this day and age. A significant body of literature exists that challenges the common assumption that photography is simply a window onto the world and that photographs document an objective truth (see for example (Ball & Smith 1992, pp16-20; Winston 1998, pp60-62). Photographs, like any other medium of representation, are framed by the subjective intent of those making them and can certainly be faked to portray something as real that does not exist or did not happen. But such manipulation can occur in any media or research project and if we reject photography on this basis we should reject all other forms of representation. This would be folly. Instead we rely on the integrity of researchers and the explicitness of their research account and framing theories to guide us in accepting or rejecting the authenticity and relevance of their work. It is generally agreed though, notwithstanding the assault on photographic 'truth', that photographs do document an aspect of an observed 'actuality' as framed by the subjective intent and bias of the photographer (Ball & Smith 1992, pp16-20; Harper 1998, p29; Prosser & Schwartz 1998, p116).

Photo observation then, is well suited to documenting and representing the f/actual nature of Realm (1), visually manifest issues and experiences, albeit in the context of subjective intent. It has been used for this purpose particularly in architectural design that is informed by an environment-behaviour paradigm (see for example (Sanoff 1991; Zeisel 1984). This approach draws on visual inquiry from structuralist social

science and though engaged, to a degree, with the notion of lived experience it functions less on an interpretive framework and more on a quasi-scientific objective one. The problem with this approach is that the subjectivity of either observed or observer is rarely accounted for and the emphasis on multiple methods, to make the data appear more 'objective', comes at the expense of a more interactive, dialectical and collaborative approach to knowing (Prosser 1998b, p104). This results in an "experience distant" or etic view of the world as opposed to the "experience near" or emic view that phenomenological based inquiry strives for (Ball & Smith 1992, p56). As a consequence this kind of photo-observation is unable to adequately penetrate Realm (2). To get to the heart of Realm (2) requires access to the anecdotes of actual experience. Photographs, though not the experiences themselves, are powerful prompt tools for eliciting anecdotes and can be used as a bridge from Realm (1) into Realm (2). To outline but a few bridging devices, photographs can be used in photo-elicited interviews; form part of a subject generated reflective account combining words and images; and be integrated into questionnaire formats (see for example (Ball & Smith 1992; Banks 2001; Collier & Collier 1986; Prosser 1998a; Wagner 1979). Such devices all elicit accounts of actual experience documented in or prompted by the photographs, providing access to many issues that are not visually apparent.

The concern that phenomenologically oriented image-based ethnographers have with structuralist paradigms of social research is not simply limited to its "experience distant" and objectifying tendencies. The concern is also based in their belief that "the social world is in part a seen world, available to most of its participants via the medium of vision" (Ball & Smith 1992, p1). On this basis they argue that the dominant mode of knowledge dissemination in social science, the written account, does not do justice to the richness of information available through fieldwork (Prosser 1998b, pp102-103; Stasz 1979, p127). This results in "language doing the work of the eyes" (Tyler qtd in Ball p6). To counter this, image-based ethnographers have developed a variety of integrative approaches to communicate the knowledge they have developed through their research that combine disparate sources of information. Typically this takes the form of image / word integrated ethnographic accounts (Goffman cited in Ball & Smith 1992, pp14-15; Harper 1992); but other approaches used are the montage of words and images (Seremetakis cited in Harper 1998, p32); and encompassing sound and interactivity in an online environment (Walker & Lewis 1998). This suggests that for design, integrated approaches to the representation of Realm 2 are more likely to succeed than any singular media, such as drawing or mathematics. I will return to this issue shortly.

REPRESENTING THE SELF

I have postponed a discussion about the importance of subjectivity for too long now so I will briefly reiterate the contexts in which it has appeared so far. No doubt subjectivity is touched upon elsewhere in this paper but these are the main moments it is visible.

- I mentioned it when first talking about why Design Methods might have failed. I implied that it was because the proponents of Design Methods did not take into consideration either their own subjective experience or that of the design community.

- I touched upon it when redefining the crisis of the artificial. There the implication being that subjectivity is bound up in any effort to communicate to each other about what we see and experience.
- In passing I made reference to design's insecurity about subjectivity in the guise of intuitive thinking.
- I skirted around it when I talked about the renewed interest in a kind of visual epistemology that implies a seeing, knowing subject.
- And finally when I suggested that phenomenological photo-based inquiry might hold some promise for design I stated that the idea of dialogue and experience, explicitly valued in such a framework, had subjectivity at its core.

Design Methods general distrust with subjective experience was symptomatic of a wider distrust with it in many academic fields at the time and an overwhelmingly rationalist view of the world. Implicit in an objective, rationalist approach to design is the marginalisation of human idiosyncrasy, choice and experience in the process of change. The problem with this approach is that it invests its faith in what I call the myth of technical rationalism; faith in a future delivered by technological progress and objective, unemotional decisions based upon hard data in a context where human experience is marginal (Roxburgh & Bremner 1999). The binary opposite of this is a subjectively dominant understanding of design. This is typified by what I have called elsewhere the 'myth of creativity' (Roxburgh 2004); the view of design as a purely intuitive and artistic process where the designer is genius and solely responsible for design change, where individual experience is all. The fallacy of this view lies in the investment of faith in a future delivered by the unbridled imagination of a gifted few (Roxburgh & Bremner 1999).

In calling these binary conceptions into question I'm not suggesting that either objective or subjective viewpoints are necessarily bad, just that in isolation and in extreme they are. This is not an argument that rejects entirely the notion of an external reality that exists independent of human experience; for example the sun will rise and set with or without the existence of the human species. Rather it is an argument that such a reality is perceived, understood, mediated, measured and represented through subjective human experience. The awareness of this and the ideological implications attached to it are the legacy of critical theory. This knowledge restores the balance between the artificial binary split of object and subject. In theories of the sociology of technology, objects and subjects are seen as actors within a network of relationships in which they act upon each other (Law 1992). The restoration of this balance is the kind of framework in which I propose phenomenological photo-based observation should be implemented. This suggests that reflexivity is a necessary component of such a design inquiry, so that the subjective experience of the design researcher is accounted for and valued. Both our experience as designers and our experience of the artificial world are valid sources of information in this context. Reflexivity also allows us to identify our prejudice and bias so that we can take these into account when making decisions. To date this has not been a feature of design because where technical rationalism can't account for and depict subjectivity because it doesn't want to see it, intuitive creativity cannot account for and depict it because it is so deeply imbedded in it that it can't see it. I am arguing then that instead of trying to eliminate

something that we cannot, we should acknowledge and embrace "...the bias of language and experience" (Alexander 1964, p78).

REPRESENTING THE ANECDOTAL

Earlier I conceived of Realm (2), the anecdotal, in a way that implied it was concerned with the 'stories' of the invisible and intangible issues and experiences of subjects that were being observed. If we adopt a self-reflexive approach to design that embraces the bias and experience of the designer then the anecdotes that must be pictured would also include those of the observer. This is necessary because our entry into and observation of 'the field' immediately becomes part of the 'issues and experiences' of it. This is known as reactivity. Though these anecdotes may take the form of various theories they are nonetheless anecdotal and conjectural because in a discipline that is not amenable to Cartesian validation, such as design, theory is unprovable in isolation; its 'validity' is dependent upon its relation to the ecology of design theory as a whole (Love 2000, pp 302 & 307-308).

If photography, as I have argued, can be used as a prompt to provide a bridge into the realm of the anecdotal, then the next question that arises is how best to represent that information once we have gotten to it? Downton (2003, p33) argues that when dealing with complex information that "the form in which the information is presented will largely dictate if it is used by designers". As I am talking about strategies for design research then this is a highly pertinent issue and touches upon the earlier problems associated with the uptake of Alexander's maths as a form of representation. It is in Realm 2 that I am now making a claim for a kind of double act of design. That act is the ability of a designer to transform this anecdotal realm, in whatever form it comes in (be it photographic, statistical, conversational, textual, reflective etc) into a simple and coherent set of 'pictures' that can be readily communicated to all participants in the design process, prior to working on a series of tentative design proposals, the work of Realm 3. Importantly, because of this need to depict the realm of the anecdotal in order to make design projections, Realm (2) is also the realm of design for (of?) design. On the basis that the most appropriate 'language' to communicate our understanding of these anecdotes is largely visual then I am making a claim for the field of visual communication, and more specifically information design, to play a central role in representing complexity, regardless of the proposed design outcome in the realm of the conjectural, Realm (3).

CONCLUSION

The persistence of the crisis of the artificial indicates that we still don't know how to depict what we know but can't see, the anecdotal (Realm 2). As a consequence we cannot reliably depict what we don't know, the conjectural (Realm 3). Given that drawing is still the dominant lexicon in the language of design, then visual communication will bring to that language a wider vocabulary to depict both the anecdotal and the conjectural, and perhaps make us feel more confident in dealing with complexity in design. Design-by-drawing, as taught through the studio model of education, promulgates the designer as the driver of the concept; designers translate their own concepts into pictures. In proposing that visual communication might be an appropriate language for the representation of the anecdotal, and given that this involves the design for (of?) design then this requires both a different approach to design education and a changed role for such a designer. This kind of designer

translates the concepts of others into pictures, through their subjective prism, requiring a model of design education based on research and collaboration.⁴

The aim of my research is to search for methods to be able to 'do design better'. Though I have argued that visual communication should be a central feature of the language of design so that we can begin to see and transform the ecology of the artificial, my contribution is not yet in developing this language but rather it is in identifying the questions through which to explore it. That exploration and the development of this language is the basis of my ongoing research.

⁴ Though these claims appear anecdotal, on the basis of playing with these ideas through undergraduate design projects for the past 6 years, the evidence that this approach works is promising. Space does not permit me to outline these projects in detail, clearly the subject for further papers, though I have touched upon aspects of them in other papers (Roxburgh & Bremner 2001; Roxburgh 2004; Roxburgh & Lorber-Kasunic 2004).

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Biography:

Mark Roxburgh is a Senior Lecturer and the Course Director of Visual Communication at the University of Technology, Sydney. He holds a BA Visual Arts (UNSW) and an MA in Communication and Cultural Studies (UWS). With a background in photography he has been exploring the application of observational research techniques to design research and practice for the past 7 years. This interest has formed the basis of his current Doctoral studies at the University of Canberra, as well as much of the undergraduate and post-graduate teaching he has been engaged with during that time. He has published a number of articles on this topic as well as more general articles concerning issues of visual practice and representation. In addition to this Mark has worked as an image maker and photographer for some of Australia's leading publications and design firms including Rolling Stone, Juice, Social Change Media, HQ, and The Good Weekend. He has recently been appointed Joint-Managing Editor of the Australian Graphic Design Association's peer reviewed online Design Research Journal.