I R I D E S C E N T

FACING THE FUTURE: POSTGRADUATE RESEARCH IN COMMUNICATION DESIGN

Repositioning the graphic designer as researcher

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Abstract

In academic terms, the discipline of graphic design is relatively young. Consequently the position of the discipline within academic territory, and the role of the designer, continue to be debated. In part, these debates have been a product of attempts to define and defend the discipline's borders from within, in order to establish a sense of the role of graphic design and the graphic designer as commensurate with other disciplines both within and beyond art and design. In recent years graphic designers have variously been defined as 'authors', 'producers' and 'readers', yet none of these definitions seem to have provided any kind of productive or lasting impact within the academy. This paper suggests that rather than continue to seek territorial definitions and positions from within, it could be more productive to look beyond the confines of the discipline. Gaining a broader, interdisciplinary perspective on, and understanding of, qualitative research methods from other disciplines may enable the graphic designer to more fully position his or her practice within the wider academy. Such a perspective could help facilitate the repositioning and redefinition of the graphic designer as 'researcher'—a move that would be productive in relation to the future development of postgraduate research within the discipline.

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Introduction

The first known use of the term graphic design was recorded in 1922 (Livingston & Livingston 1992: 59) and the notion of graphic design as a profession was not fully established until the middle of the twentieth century (Hollis 1994: 8). In the United Kingdom graphic design degree courses were first offered in Polytechnics from the mid 1960s, with validation by the Council for National Academic Awards (CNAA). In academic terms, therefore, graphic design does not have the established credentials or research territory of many other subjects. Indeed, for many graphic designers, there is a perceived separation between theory and practice. Design writer and critic Rick Poynor (2003: 10) suggests that graphic design has 'long had an aversion to theory', whilst Ellen Lupton (2009: 6) has stated that whilst 'theory is all about the question 'why'? The process of becoming a designer is focused largely on 'how'.' For educator/designers

Ian Noble & Russell Bestley (2001: 14), this aversion to, or lack of, theoretical engagement is 'symptomatic of the immaturity of the developing discipline'. However, debates within academia about the nature of the discipline, and in particular the nature of research within the discipline, continue to unfold—particularly those relating to research involving design practice. Though this may also be true of other design disciplines, this paper focuses solely on graphic design.

Since the early 1990s, the role of the graphic designer has been described in ways that attempt to challenge the notion that it is 'merely' a service-led profession. Perhaps the most well known of these is the phrase 'designer as author', which came to prominence in the mid to late 1990s. Often attributed to Michael Rock in 1996, but previously coined by Rick Poynor (1991), the definition was not without its problems, and in 1998 Ellen Lupton (2011) sought to replace the notion of the 'author' with that of the 'producer'. This was followed by Gerard Mermoz (Mau & Mermoz 2004) who replaced the term 'author' with 'reader'. The three definitions clearly relate to each other, drawing on ideas of meaning in relation to both production and communication, and striving to position the role of the designer as engaging in practice in ways that are more complex and productive than perhaps previously interpreted. However, to date, the phrase 'designer as author' has more often than not been misinterpreted and the ideas of 'producer' and 'reader' have had little impact within education or industry. Meanwhile, graphic design programmes within higher education continue to increase in numbers and expand their intake throughout the world. Graduates seeking to further develop their fledgling portfolios ~~further~~ in order to gain an edge in a very competitive employment market increasingly undertake a Masters programme (Shaughnessy 2009: 102), but there remains little sense of an established postgraduate progression to PhD. Yet, contemporary graphic design has recently been described as becoming 'a knowledge-intensive multi-disciplinary discipline' and designers acknowledged to have a range of skills that would underpin the practice of research well (van der Velden 2011: 16). Perhaps it is not only the definition of the role of the graphic designer that is important, but also an understanding of the possibilities and potential of research and the PhD that needs addressing. In adopting van der Velden's (2011) view of graphic design, whilst drawing on elements from the three previous definitions, this paper proposes that a more productive notion could be that of 'graphic designer as researcher'. This is a definition, and paper, that purposefully looks beyond the territory of art and design to enable the reframing of graphic design research and practice within the wider academy.

The initial sections of the paper seek to contextualise this new proposal by revisiting and evaluating the three earlier definitions of 'author', 'producer' and 'reader' in detail. The potential of designers to act as researchers is then discussed in relation to the design process, and how this might be underpinned and strengthened by looking beyond the confine's of one's own discipline in relation to the traditions of qualitative research in the wider academy. The fruits of such an approach are then evidenced through a brief discussion of the author's doctoral research that was developed using interdisciplinary strategies drawn from graphic design and cultural geography. The paper concludes by suggesting that the potential inherent in the role of graphic designer as researcher offers a bright future for both postgraduate graphic design education and the industry.

The designer as author

The term 'designer as author' gained popularity during the late 1990s, but it was the article by Rick Poynor (1991) in the UK magazine *Blueprint* that sowed the initial seeds for a debate about the role of the graphic designer that has, according to its main proponents, more often than not been misinterpreted. Poynor's (1991) article focused on graphic designers such as Neville Brody and Jonathan Barnbrook who were using technology to the full and generating layered and complex typographic compositions that positioned the designer as 'annotating a client's message' (Lupton 2011: 59). A graphic designer's role will always carry with it the notion of subjectivity, as it is an interpretive one. However, there is a sense here that this 'annotation' was taking that further; that the designers involved were far more proactively engaging with the message in a way that was as overtly on their terms as much as those of their clients. During the same period, some graphic designers, particularly those at Cranbrook Academy of Art in the United States, began to engage with post-structuralist theoretical writing, using many of the ideas relating to the instability of meaning and language within their visual work (see Lupton & Miller 1996). This two-pronged assault on the traditions of typography, driven by technology and linguistic theory, was derided by many graphic designers and writers at the time (see Heller 1994, Kinross 1997, Rand 1997), which

served to fan the flames of debate further as it played out within the pages of magazines such as *Emigre* and *Eye*. As the founding editor of *Eye*, Poynor asked designer/writer Michael Rock to pen a follow up piece to his 1991 article. First published in 1996 in *Eye*, and in may anthologies since, it was Rock's (2002) *Designer as Author* that really cemented the phrase within the wider graphic design vocabulary.

The use of the word 'author' resonated with many graphic designers who felt that their role was perceived as a subservient one, inferior to that of artists. Rock (2005: np) suggests that 'designers aspire to be authors because we are insecure about our work', and that this insecurity is spawned because many designers feel they have a marginal role in the communication process and are simply 'called in at the end of the process to make things look good' (Lupton 2011: 59). The term began to be used in relation to 'new aspirations for the practice of graphic design', suggesting a more powerful, less passive pro-activity in relation to the creation of graphic design work (Lupton 2003: 23). The article and its notions of authorship were misinterpreted by many as a call to develop self-generated, self-expressive work (see Lupton & Miller 1996, Rock 2005). This type of authorship could be said to hinge on 'a nostalgic ideal of the writer or artist as a singular point of origin', (Lupton 2011: 13), one that has long since been revealed by Barthes (1977) as subservient to the reader. However, its ramifications still reverberate today with British writer and designer Adrian Shaughnessy (discussing graphic design education) suggesting that 'the pedagogical pendulum has swung too far towards high-minded notions of personal expression and the designer-as-author' (2009: 101).

In reality, Rock did not intend to become, as Lupton (2011: 59) describes him, an 'unwilling poster child for a designer as author epidemic'. Rather, he had intended to cast doubt on the need to develop content as the only way to contend with our anxieties about the perceived position of the graphic designer, encouraging designers instead to focus on visual techniques that construct meaning above and beyond that of the text or message. The essay was actually 'an attempt to recuperate the act of design itself as essentially linguistic—a vibrant, evocative language' (Rock 2011: 15), a call to see value in the designer's manipulation of content as much as its origination and as Bruinsma (1999) has noted 'style is content too'. It is partly this aspect of Rock's idea of authorship, this engagement with form, that lead to Ellen Lupton's attempt to redefine the role of the graphic designer.

The designer as producer

Given the spread and longevity of the notion of 'designer as author' within the discipline, it is clear that Rock's essay resonated with many who wished to redefine their practice. However, the word 'author' remained problematic, as did the misinterpretation. In 1998 Ellen Lupton attempted to rectify this with her essay *The Designer as Producer* (2011). By using the word 'producer', Lupton shifts the meaning of the definition, and associations to the word 'author', in a variety of ways. Authorship has 'more solitary and cerebral connotations' (Blauvelt & Lupton 2011: 9) and the position of the author has not only been challenged by Barthes (1977) in relation to the construction of meaning, but also by the artistic avant-garde movements of the early 1900s who critiqued the romantic ideals of art and the idea of 'unique forms' being generated from 'the depths of the interior self' (Lupton 2011: 13). In contrast, production grounds the role in the material world, encompassing 'direct modes of action in order to realise creative projects' (Blauvelt & Lupton 2011: 9).

Lupton draws on Walter Benjamin's 1934 essay *The Author as Producer*, in which he claimed that new forms of communication such as cinema and radio were blurring the boundaries between the author and the reader, and that the author should question, and ultimately control, the material form of the work. During the past twenty years of graphic design, a similar situation has been evident. The advent of the Apple Mac in the 1990s offered designers an opportunity to engage in production where previously it had been the specialist area of trained compositors and paste up artists; digital printing has made small scale publishing a feasible undertaking; and, sites like Tumblr or WordPress offer designers an opportunity to publish their work at no cost at all. The 'network of creative and economic collaborators' that Lupton (2003: 24) proposed is thriving—opportunities for self publishing in the form of providers like of blurb.com and The Newspaper Club continue to grow, small publisher fairs are held regularly worldwide and many design groups produce either occasional or regular publications alongside their client based work (see for example Wire design's *Crossfields* publications or Fuel whose publishing activity has evolved into a separate part of their business). Many graphic designers now also produce products as part of their

repertoire, for example, Experimental Jetset's range of T-shirts and Graphic Thought Facilty's *MeBox* storage system. The 'proletarianisation' of design as Lupton puts it, (2003: 25) has produced an entrepreneurial culture that shows little sign of abating (see Heller 2011).

The idea of the 'producer' also links to Rock's original ideas about using the visual, material language of graphic design as a form of content. However, it goes further, actively privileging 'things over ideas, making over imagining, practice over theory' (Lupton 2011: 13). There is perhaps a danger here that the pendulum could swing too far, and the notion could be interpreted in such a way that separates any kind of idea or theory from practice. Defining things in terms of such binary oppositions of theory or practice, style or content, form or function, seems commonplace within the discipline, yet not particularly productive. Moving beyond such simplistic dualisms and arguments in graphic design is something that designer/educator Gerard Mermoz (2004) was attempting with his definition of the 'designer as reader'.

The designer as reader

Mermoz first attempted to engage graphic designers in a more critical reflection of their practice during the same period that Rock and Lupton's definitions were developed. His articles *On Typographic Reference: Part 1* (1995) and *Deconstruction and the Typography of Books* (1998) were critical of the 'retinal' state of graphic design and looked to move debates in graphic design beyond 'surface pattern and complacent self-expression' (Mermoz 1998: 41). At this stage, Mermoz's focus was on typography, and he first raised his idea of 'designer as reader' in conversation with graphic designer Bruce Mau, seeing it as a potential way of framing graphic design practice that goes beyond that which is purely 'retinal' and works 'at the level of the text' in such a way that both form and content are used productively (Mau & Mermoz 2004: 33). The use of the term 'reader' references Barthes' (1990: 4) notion of the 'writerly' text, the goal of which is to position 'the reader no longer as a consumer but as a producer of the text'.

Mermoz developed this idea further through the project *City of Signs*, which 'set out to redefine graphic design as research, and the graphic designer as reader' (2004: 37). Based in Istanbul, the project was a collaboration between Istanbul Bilgi University and London College of Communication. Participants spent ten days in Istanbul 'observing, discussing, recording and documenting' their impressions. They sought areas outside of tourist guides that aligned to their own research interests, developed during the months previous to the residency, and used the material they gathered to 'articulate' their own 'readings' of the city (Mermoz 2004: 37). The results of the project were shown at an exhibition where viewers were invited 'to engage with the rhetoric' of the 'propositions', which were deliberately created in such a way as to avoid making definitive statements or enabling the drawing of a 'readymade conclusion'. These 'open' works required the viewer to 'extrapolate' their own conclusions (Mermoz 2006: 85).

The reversal of the roles of 'reader' and 'author' clearly repositions both graphic designer and the audience in a way that aligns with Barthes' (1977, 1990) thinking and addresses some of Lupton's issues with the original term. Although if one subscribes to the notion of research as offering 'new knowledge' then can the production of work without a 'conclusion' be considered research as such? Perhaps if the effects of this way of working were analysed further in relation to the audience and their understandings, some new insight might be gained, but it seems they were not. Therefore, this seems to be a definition of research that most academics would contest, regardless of discipline. However, this paper contends that graphic design does have the potential to contribute to academic research, and to this end suggests that by looking beyond art and design, graphic designers could develop a greater awareness and understanding of traditional qualitative research methods, enabling them to reframe and rethink their practice in a way that could redefine the graphic designer as 'researcher'[1].

[1] Research, particularly that which engages a form of design practice, is an issue that is regularly discussed and debated within design focused higher education programmes, conferences and online forums/lists. Therefore, the notion of 'research' used within the context of this paper needs to be clarified. This paper does not equate practice to research, rather it sees the idea of the graphic designer as researcher as producing practice-led research, that is '[R]esearch in which the professional and/or creative practices of art, design or architecture play an instrumental part in an inquiry' (Rust, Mottram & Till 2007: 11). See Scrivener 2000 for an account of the use of reflection in practice-led doctoral research).

Repositioning the designer as researcher: looking beyond the discipline

In *Graphic design: A user's manual*, (Shaughnessy 2009) the alphabetically ordered series of short texts moves from 'Rejection' to 'Sacking clients', with no mention of research, and historically there has been little integration between academic research and commercial graphic design, with the professional community often holding a negative view of 'academics' (Yee 2007: 2). A commonly held perception of research within graphic design is that it is purely 'information gathering', something that is undertaken at the beginning of a brief (Yee 2007: 3).

However, undergraduate students do regularly engage in qualitative research methods that go beyond simple information gathering—for example, they explore areas on foot, they take photographs and they keep research diaries. All strategies that essentially draw on ethnographic research methods. They then use their 'design process' to analyse, synthesise and evaluate their findings in order to progress their work, and these three iterative stages of a designer's process 'can also be applied to the research process' (Yee 2007: 5). Yet the majority of them do not have the language to articulate 'ethnography' as their methodology, nor do they have any real understanding of the traditions of qualitative research or research design. There is rarely any grounding in, or introduction to, any of the potential philosophical and methodological approaches of qualitative research. For doctoral students in many other disciplines, such introductions are covered at undergraduate level; within graphic design, this is rarely the case. There also seems to be little preparation for progression from MA to PhD within graphic design. Perhaps this is unsurprising, as often students now use Masters programmes to prepare them more fully for the commercial world of work (Shaughnessy 2009: 102). Yet, if we wish the research territory in the field to deepen and expand, this lack of understanding or introduction to traditional research methods will continue to leave students ill-prepared for doctoral study.

Daniel van der Velden suggests that many of the conditions that could underpin the idea of 'graphic designer as researcher' are already in place;

> Writing, agency, authorship, mobility, post-studio field work, new collaborations, strategic and theoretical activities all are transforming design into a knowledge-intensive multi-disciplinary discipline' (van der Velden 2011: 16).

The previous definitions of 'author', 'producer' and 'reader' have clearly all played their part in contributing to the development of this scenario, however, in order to fully develop the potential of 'graphic designer as researcher', this paper proposes that we need to look beyond the confines of art and design and engage in interdisciplinary work. Taking this different perspective offers both a fuller understanding of the traditions and methodologies of qualitative research that are more established in areas such as the social sciences but also a greater understanding of how many of the methods employed within the design process can be reframed as research methods. In relation to work of an interdisciplinary nature, Emma Cocker (2008) suggests that:

> Being in a different place serves to distance the familiar and the known, such that a fresh and perhaps more critical vantage point may be developed through this geographically displaced perspective.

Such a position can help identify and articulate what graphic designers are not, but also what we are, or could be—in this case, 'graphic designer as researcher'.

It would seem that graphic design is well placed to undertake such interdisciplinary work, and as James Goggin (2011: 55) has stated, graphic design is a 'distinctly in-between discipline' which enables the infiltration and use of 'the systems of other disciplines when desired and where relevant'. This type of pluralist, 'boundary-less' approach is often said to be characteristic of an art and design research methodology (Gray & Malins: 2004[2]: 72–4) and can be described as that of the bricoleur (Denzin &

[2] This text has received criticism in some quarters (see Love 2006). However, the text usefully discusses how reflection can drive the process of practice-led research.

Lincoln 2005: 4). However, this is not to suggest that it is simply a case of haphazardly 'throwing together' a set of methods, rather it is that a set of interlinked and related methods are drawn together to form a set which is developmental and coherent (Gray & Malins 2004: 72–74), so an understanding of the methods used is key. So how could such an approach work in practice? The following section discusses the author's doctoral research project that utilised this type of interdisciplinary approach.

Graphic designer as researcher: An example

Stemming from a belief that the practice of print based graphic design could offer a great deal to cultural geographic practices and theories relating to the understanding and representation of place, this practice-led doctoral research sought to develop a 'geo/graphic' design process that is interdisciplinary in nature (for more detail see Barnes 2012 and Barnes 2013). Undertaken primarily in the London borough of Hackney, the research draws on both ethnographic and design-led methods with which to understand and represent place. These included, amongst others, visual ethnography (Pink 2007), walking as a research method (Pink, Hubbard, O'Neill & Radley 2010); cultural probes (Gaver, Dunne & Pacenti 1999); auto-photography (Johnsen, May & Cloke 2008); and, participatory action research (Pedgley & Wormauld 2007). The ethnographic methods generated a range of textual and visual content about Hackney that enabled the development of a series of graphic design test projects that each centred on a particular aspect of place. The design test projects were adopted as a form of 'educative enquiry', which has similarities to participatory action research (Pedgley & Wormauld 2007: 79). In design research of this type, the designer acts as both observer and participant within the practice (Glanville 1999: 89) employing 'systematic self reflection' (Kemmis & McTaggart 2005: 563). The framing of graphic design practice as an integral part of these methods enabled reflection on its ability to contribute to the process and results of the research.

Engaging with texts from the social sciences that focus on qualitative methods, such as ethnography, enabled a fuller understanding of issues including subjectivity, rhetoric, content analysis and the construction of ethnographic narratives. So, whilst the initial intent was for the research to reveal the potential that the graphic design process might offer cultural geographers, it soon became apparent that the reverse was also true. Having such an understanding enables a clearer positioning of many methods used within graphic design practice within this wider academic territory. However, it also enables one to bring a design specific, *subject*ive approach to these methods, as the intent of such interdisciplinary work is not for the graphic designer to become an ethnographer, for example, but rather for the designer to be able to frame, and further develop, their practice within this new understanding, benefiting from the dialectical nature of this type of 'methodological synthesis' (Kincheloe 2001: 685). In order to illustrate this, the paper focuses on one test project, and in particular the process of prototyping as a form of analysis through graphic design practice.

The small, experimental book[3] *Stuff* (fig. 1) was inspired by answers to the question 'What makes your house a home?' that was included within cultural probe packs. Many of the answers to the question listed items that related to memories and to the process of one's life unfolding over time. As Blunt & Dowling (2006: 114) have stated, many people's homes are 'sites of memory, filled with objects to remind them of family and events'. Things like photographs, travel souvenirs and childhood toys become autobiographical objects and form a spatial representation of identity—an autotopography, a 'physical map of memory, history and belief' (Gonzalez 1995: 133–4). Integral to who we are is a sense of our past and such possessions act as mnemonic devices that can reconstruct the past within the present (Gonzalez 1995: 136). Each item has a very particular, and more importantly, personal code of signification—a tatty childhood suitcase redolent with memories and remembered images for its owner, is another person's rubbish.

[3] The term 'experimental book' is drawn from the idea of a 'livre d'avant garde', which challenges the conventions of the book in order to challenge both art and life (Arnar, 2011: 2).

Fig. 1: *Stuff* is traditionally bound and covered with buckram cloth. 140 x 180mm

The book contains four different texts; an academic essay written about ‘stuff’; a participant’s life story written in relation to their ‘stuff habit’; segments of conversation between researcher and participants about their ‘stuff’; and, a range of memories and photographs of particular items referred to in participants’ probe pack answers. The graphic and typographic interventions within the pages and format engage with ideas of the processual, open-ended nature of place, montage writing, temporality, multi-sensorality, and interactivity in such a way as to offer the reader a three-dimensional space that demands physical engagement with a multi-linear narrative. Here the knowledge and understanding drawn from cultural geography and ethnography is utilised *subject*ively, and brought to life through the communicative potential of graphic design and typography.

The design of *Stuff* was an integral part of the research process and it was not executed solely for the sake of visual representation. A geographer’s central aim is not just to represent place, but to explore, understand, and make sense of the ongoing complex and relational production of place. The geo/graphic design process is therefore holistic, synthesising both form and content in order to facilitate both representation and understanding. It is this focus on understanding that elevates the practice of the graphic designer to that of graphic designer as researcher. Prototyping played a key role in developing this understanding, and this phase of the design process reveals comparisons with the use of walking as a research method. Walking is said to create ‘embodied ways of knowing’ (Pink et al 2010) and slows one down, effectively forcing the researcher 'to perceive actively, to make connections, to articulate thoughts and feelings which would otherwise remain at a pre-reflective or practical level of consciousness' (Tilley 2004: 223-4). Prototyping works in a similar way, the process of making slows one down and creates a physical form that enables a point of reflection and analysis within the design process. For example, various design interventions were developed during the prototyping phase. These enable the reader to get a greater understanding of; the private space of the home (fig. 2); how academic theories relating to collecting and personal possessions are practiced within everyday life (fig 3); how memories are often triggered by tangible artifacts (fig 4); how smell and touch can play a part in the recollection of places (figs. 5 & 6) and how these memories and meanings are more often than not hidden from view for anyone other than the owner (fig 7). They also all engage the reader with the form and materials of the book, encouraging them to touch, to explore and to interact, as they could in a real home.

Fig. 2: On ‘entering’ the book, a reader encounters end pages made of brightly patterned wallpaper. Contrasting with the front cover, they emphasise the move from the external public face of the ‘street’, to the internal personal space of the ‘hallway’.

Fig. 3: Throughout the book the participant’s life story is type set at a 90° angle. Readers must turn the book 90° to read this text. This physical act suggests readers literally move away from the other text, re-orienting themselves through this new information—perhaps like turning a map round so it is pointing in the same way one is going.

Fig. 4: Bound within *Stuff* are items that function as another page of the book, and create separate places of exploration, discovery and imagination. Envelopes containing used stamps, cigarette cards, letters, old photographs and slides—purchased from second hand shops in Hackney—are included, allowing the reader to draw out the contents. This physical engagement triggers a reader's memories of their own childhood hobbies, family holidays, or the experience of looking through drawers and cupboards in family homes that contain such collections. The book becomes interactive and, with the readers at the heart of the process, enables them to bring thoughts of their own to the experience that reinforce the possibility that each reading of the book will become an individual journey.

Figs. 5 & 6: Glassine paper interleaves some of the pages that contain images, and perfumed drawer liners create other pages The use of these materials draw the reader's imagination to sites and objects they may have experienced previously: homes of older relatives or old family photographs in a traditional album collected through generations. This prompts the reader to frame their own understandings and memories of such items within the context and content of the book.

Fig. 7: The texts that explain the particular significance of many of the items contained within the book are hidden within the French folds, behind the image they refer to. This intervention engages with the fact that one's precious possessions are often meaningless to others. By positioning the captions in this way, the reader sees an old chair at first, with no sense of why it is meaningful, and what significant memories might be associated with it. By going beyond the face value of the image, by literally looking behind the surface of the page and discovering the captions, the chair becomes a gateway to memories of moving to, and falling in love with, a new city.

However, this interaction with the material form of the work is not only productive for the reader, it effectively re-sites the researcher in place—in this case Hackney and the participant's homes—and offers a further opportunity to reflect on one's experience. The geo/graphic design process in a sense, therefore, functions as an analytical tool for exploring the making of place through the making of the work. This can also be seen as a similar process to writing, which has been described as a deepening of 'analytical endeavour' (Coffey & Atkinson 1996: 109) and as a 'method of inquiry' rather than just a 'mode of telling' (Richardson 2000: 923).

> Writing is also a way of 'knowing'—a method of discovery and analysis. By writing in different ways, we discover new aspects of our topic and our relationship to it. Form and content are inseparable (Richardson 2000: 923).

The practice of design has been likened to writing (Burdick 1995: np, Bruinsma 2001: 1) and if one were to substitute the word 'writing' with the word 'design' in Laurel Richardson's quote, the statement would not only make sense, but would sum up well the approach of this type of practice-led research.

This analysis enables the test projects to reveal theories about particular aspects of place and therefore work developed through this interdisciplinary approach could be defined as 'research through design' (Frayling 1993) or as Sevaldson (2010) suggests, 'research by design'. In this type of work, the designer as researcher takes on both the role of author and producer, yet this is not the kind of authorship or production that is driven by personal style or neglects theory. Here the authorial role is driven by the broader aims and articulation of the research itself, and the production is an analytical process within that research. Such an approach enables graphic designers to contribute beyond their discipline and it repositions the practice of graphic design to 'an instrument for the production and communication of knowledge (Mermoz 2006: 77). This is not to suggest that graphic designers strive to become social scientists for example, but that by engaging with other disciplines and research traditions they may discover parallels with, and particularities within, their own practice. Finding such parallels should not be seen as in some way diminishing what is, or could be, particular about graphic design, rather it should be seen as confirmation that the process can be rigorous and uses the type of methods which are commonly used in research (see McNiff & Whitehead 2006: 8).

Conclusion

Repositioning the 'graphic designer as researcher' builds on, and draws together, aspects of the previous definitions of 'author', 'producer' and 'reader'. Given its multi-faceted, integrative nature, the practice of graphic design would seem well placed to undertake a greater role in relation to research both within and beyond art and design. This bodes well for the future of postgraduate research within the discipline, though there is some work to do in enabling undergraduate graphic designers to recognize and articulate their research methods, and in developing further scaffolding between Masters programmes and doctoral research in relation to a greater understanding of research design and research methods. Perhaps there is also a need to develop aspirations in relation to this progression, not only in terms of thinking about doctoral research in relation to an academic career, but also in relation to the positive impact it could have within an industry that often holds a negative view of 'academics' (Yee 2007: 2).

In *Graphic design: A user's manual*, in the section 'Knowledge', Shaughnessy (2009: 172–3) asserts that graphic designers need a wide understanding of the world in order to engage fully with the diversity of projects they are likely to work on. He suggests that to accumulate it

> we need to speak to people from other disciplines; we need to watch and study; and once we've done all these things we need to keep doing them.

This would suggest that, again because of its integrative nature, graphic designer practitioners need interdisciplinary understandings. Don Norman (2011: np) has recently suggested that all designers these days are likely to work in multidisciplinary teams and Friedman (2000: 10–11) has suggested that the very

nature of design places it at the intersection of six very large fields; natural sciences, humanities and liberal arts, social and behavioural sciences, human professions and services, creative and applied arts, and technology and engineering. Therefore, having an understanding of methods and approaches from outside of the discipline can only help in this instance, and being able to understand another's position and articulate one's own will surely lead to more productive collaboration. Repositioning the 'graphic designer as researcher' will facilitate the development of critically aware, articulate practitioners whose contextual understanding and reasoning can stand up to the clients' questioning and who, by inextricably linking theory with practice, can make work that not only looks good, but also answers the client's brief.

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FACING THE FUTURE: POSTGRADUATE RESEARCH IN COMMUNICATION DESIGN

METASCIENCE: A PARADIGM FOR POSTGRADUATE COMMUNICATION DESIGN RESEARCH

SHEILA PONTIS

ABSTRACT

Communication design research is becoming an essential component in solving current design problems and tackling new design challenges. However, the notion of a scientific approach to communication design is still an object of discussion. The scientific research scenario in communication design is almost opposed to that of other design fields, such as engineering and product design. While the later fields have well-defined research structures and strong communication channels, the former is still facing foundational problems. The current state of communication design research is described by a lack of a scientific rationale and ambiguous research process structures, frameworks for developing methodologies and strategies to narrow the gap between academia and professional practice.

This paper proposes the adoption of a holistic approach – metascience – to enhance and structure postgraduate communication design research. Through the adoption of key aspects of robust scientific disciplines, less experienced disciplines could improve and develop further. To identify those aspects, more experienced design fields were investigated through secondary research from books, papers and PhD thesis, and open questionnaires were sent to six key informants from the experimental sciences.

As the result of analysing collected data sets, five areas in which communication design research may benefit from a metascientific approach were outlined: research structure, assessment criteria, type of research approaches, communication channels and community links, and the gap between theory and practice. The paper discusses five particular case studies that could be seen as ways of adopting metascience to address each identified area.

FULL PAPER

Introduction

Disciplines like chemistry and biology have a robust history of academic research and their value is unquestionable (Shadish et al., 2002). Design research[1] has a long history as well. but it is not very robust in all design fields (Owen, 1998). Although doctoral degrees in most design fields are awarded worldwide (e.g. by the Royal College of Arts and Reading University in the UK and by Delft University in The Netherlands) and design research centres are increasingly emerging (e.g. the Simplification Centre in London), postgraduate design research structures appear to have evolved unevenly through the different design fields. Engineering and product design have developed a substantial research structure and rich communication channels. In contrast, design fields more related to the Arts & Crafts (now often referred to as communication design fields—e.g. graphic and information design) are steps behind in the process of scientific research development (Owen, 1998).

1. The term "design research" is often used to referred to design studies; design experiments; development/developmental research; formative research; formative evaluation; engineering research (van den Akker et al., 2006:4), among others. In this paper, the term "design research" refers to research work and projects conducted with a scientific approach as part of the design discipline.

In communication design research frameworks and models are still blurred (Cross, 2002) and official standards for assessing "the worth of a finalised programme" have not been defined sharply (Phillips in van den Akker et al., 2006). In addition, although knowledge is generated for application in professional practice (Owen, 1998), the contribution of communication design research to professional practice (industry) is still being questioned. In other words, there seems to be a permanent gap between communication design theory and practice (Sloan in van den Akker et al., 2006:19).

The aims of this paper are to identify and provide enlightenment on what and how communication design can learn and adopt from more experienced academic research disciplines (i.e. engineering and product design, but also from experimental sciences) in order to enhance its scientific approach. These goals are reached through the concept of metascience (Bunge, 1959, 2000), a paradigm to improve academic communication design research education. The metascientific approach is proposed here as a way to integrate key scientific aspects to strengthen communication design research. Key areas of more experienced scientific and design disciplines such as research structure, assessment criteria, research approaches, communication channels, communities, theoretical models and professional practice are looked to for guidance and to develop more robust communication design research structures.

The design research review presented here is written to shed light on communication design research (which is the area of knowledge and expertise of the author), and to assist and orient researchers, examiners, PhD candidates and other members of the design community to understand the components of design-science research education.

Research aims and methodology

Aims and objectives

In order to address the points described above, this paper aims:

- To present a brief overview of the development of communication design and its current state.
- To identify key aspects, dimensions and components of communication design research which could be defined more precisely.
- To introduce metascience as an approach to improve postgraduate communication design research.
- To highlight aspects of more experienced scientific and design disciplines that could be adopted to strengthen communication design research by a metascientific approach.

The term metascience is used here to refer to a holistic approach, through which less experienced disciplines can improve the quality of their outcomes and define clearer structures by adopting key aspects of more robust scientific disciplines. Although more experienced disciplines could also benefit from this approach, this side will not be discussed in this paper.

Throughout this paper, the term 'design' is used as a generic word to refer to the broad design discipline. When design is used to refer to particular design fields, it is indicated.

Methodology

Secondary research from books, papers and PhD thesis of the last 30 years has been conducted to gather design research information. This review evidenced that literature which discusses scientific communication design research is scarce (e.g. Frayling, 1993/1994; Frascara, 2002; Harland, 2009); the existing literature does not explore a holistic research approach nor does it give a clear overview of the current research situation. In contrast, vast literature can be found for design research in general (e.g. Cross, 2007; Bonsiepe, 2007), and for user-centred, engineering and product design research (e.g. Owen, 1991; Cross, 2000, 2002; Bruseberg & McDonagh, 2000; Hevner, 2007).

In addition, literature review was used to collect general scientific-based information, and key informants approach (Marshall, 1996) was used to gather more specific scientific insights. While key informants approach does not represent 'the majority view of those individuals in their community' (Marshall, 1996), this approach has been used to complement the literature review and to add in-depth views and expert quality data. Six key informants were interviewed for this study, which responded to the five criteria of eligibility (Marshall, 1996): role in the community, knowledge, willingness, communicability and impartiality. The first eligibility criterion is the only one that can be confidently determined in advance. Once key informants are selected, the remaining four criteria should be taken into account in order to ensure valid and pertinent insights (Marshall, 1996). For this study, scientists, who were deemed as experts by colleagues and peers, and hold a position of responsibility and influence in their working places, were contacted by email through third parties but they did not have any previous relationship with the author of this paper. An open questionnaire based upon the literature review was sent to the six selected scientists via email.

Five case studies are used to illustrate the areas in which the metascientific approach may benefit communication design research. When possible case studies from communication design investigations (graphic or information design) are discussed, however, some case studies have been taken from human centre and education design when no valid cases from communication design were found.

Design as a research discipline

In Europe during the late 19th century, especially in the United Kingdom, the Industrial Revolution movement began to separate design from fine art. Design officially became a disciplinary field in 1836, when it was considered a field of study independent from that of art (Frayling, 1993/1994; Pontis, 2011a). In other words, design should not be confused with art as it has "its own purposes, values, measures and procedures" (Owen, 1998). Nonetheless, now, more than 100 years later, the disciplinary condition of design is still the subject of debate (Poggenpohl, 1979; Harland, 2009; Triggs, 2011, Pontis, 2012). Design has the key

elements to be considered a disciplinary field, although it lacks well-developed internal structures and an understanding of its methodologies and strategies (Owen, 1998)..For example, design is currently a particular body of knowledge in which its professionalization has increasingly become "the product of education rather than experience alone and responsibility [has] shifted to institutions of higher learning including universities" (Erlhoff and Marshall, 2008:132-133).

Throughout the modern history of design, three major causes have been identified as having contributed to design being less established as a discipline (Triggs, 2011) and almost being removed from professional school curricula (Sloane in van den Akker et al., 2006). Firstly, design is described as a "young" and "slow learner" discipline (Owen, 1991; 1998). This has meant that its problem-solving approaches were initially defined as "intuitive, informal and cookbooky", instead of seeking for academic respectability like the disciplines of medicine or astronomy (Sloane in van den Akker et al., 2006:28-29). Secondly, after World War II (1939-1945), the higher education industry experienced a time of prosperity as demand for professionals such as scientists and engineers rapidly grew. In most jobs, newly educated professionals replaced others without academic degrees, such as technicians (Sloane in van den Akker et al., 2006). Consequently, "the number of sites where competent work in the areas of design and engineering was being performed increased dramatically" (Sloane in van den Akker et al., 2006:29). The position of universities as privileged institutions in which to acquire specialised knowledge was debilitated in these areas. Finally, in order to have a "more respectable" view and expect "larger, direct economic rewards", key design domains, the technical, social and managerial were moved to the industrial sector, while they were previously developed at higher education institutions (Sloane, in van den Akker et al., 2006). On this basis, design evolution has been characterised as a search for place and recognition in practice, education and academia.

Design practice: growing demand

The beginning of the 20th century and the development of design in this period can be summarised as: unsettled conditions, exploration of unknown areas and adoption of new tools. In Europe, social, political, cultural, and economic changes radically altered several aspects of societies. These changes were complemented by scientific and technological developments, such as the invention of colour photography by the Lumiere brothers (Meggs, 2006). In addition, the outbreak of World War I (1914-1919) changed the way life was seen and understood in Western civilisations (Pontis, 2011a,b). In this context, "graphic forms of communication experienced a series of creative revolutions that questioned their values, their approach to the organisation of space and its role in society" (Meggs, 2006:231). The term "design" started to be used to distinguish a sense of responsibility for society in the creation of visual communications instead of personal expression, like art-based objects (Meggs, 2006).

Mass production of graphic communication artwork tended to replace the initial enthusiasm generated at the end of the previous century with the Victorian era, Belle Époque and Art Nouveau among

other European movements. Avant-garde movements, such as futurism and Dadaism, grew to express society's discontent and designers' rejection of the past and traditions (Meggs, 2006).

The 1920s were characterised by an increasing interest in researching the problem-solving process behind artefacts, from products to graphic communication objects. This interest led to the development of rational methods, which can be seen as an attempt to "scientise" design (Cross, 2007:119). Some avantgarde movements, such as De Stijl and constructivism, presented ways of understanding design based on systematic approaches. For example, at the German design school, the Bauhaus, ideas from all advanced art and design movements were explored, combined and applied to create a functional and rational idea of design (Hollis, 2002; Meggs, 2006). Both in Europe and in the United States, artists and craftsmen "began to work with industrialists and to commit their talents to the design of industrial products" (Owen, 1991). Particularly in the United States, graphic and industrial designers started working as consultants in engineering and marketing departments (Owen, 1991).

New ideas and an increasing desire to work with different media and technology led to the investigation of unexplored areas of the growing discipline of design. Moreover, the invention of the first large-scale computers after the 1940s had an irreversible impact on design practice and industry (Kopplin, 2002; Owen, 1991; Conley, 2004; Pontis, 2007, 2011b). Progressively, computers made it possible to start testing and experimenting with an assortment of visual techniques and languages, opening up new possibilities for designers and becoming invaluable working tools to enrich outcomes and industrialise production. In addition, "computer-supported design" dramatically reduced production times. Consequently, new paradigms arose, which led to new uncertainties and generated an interest in pursuing studies related to more theoretical approaches to design, such as finding ways of improving communication by understanding the design process and methodologies (Pontis, 2011b).

Understanding the theory

A minimalist style emerged during the post World War II years. This movement, at its strongest during the late 1960s and early 1970s, mainly originated as a response to the war chaos, which resulted in the emigration of European designers to the US. In Europe, Dieter Rams's industrial product designs for the Braun Company showed the simplicity and function-driven style of this movement (Meggs, 2006). At the same time, a deep concern for defining analytical and teachable theories about the design process grew among professional designers and architects. In order to understand how they could improve the development of design solutions, professionals like John Chris Jones, Bruce Archer and Christopher Alexander followed systematic steps that supported their ideas and structured the decision-making processes (Pontis, 2011b). The term "design method" became commonplace and was defined as a type of procedure, technique or tool for designing, which aimed to increase designers' capabilities, helping them generate more considerations than they could do alone (Gregory, 1966; Cross, 2000; Pontis, 2011b). Back

then, all manner of things from check-lists and theoretical exercises to mathematical equations were referred to as design methods (Owen, 1991).

During this period, creativity, quality and production diversity diminished as a possible consequence of the strong rational emphasis and the increasing but uncontrolled use of technological advances. Although designers' initial good appetite for learning and exploration seemed to freeze, new channels of communication were created to share fresh ideas. Design research journals emerged during these decades, including Design Issues (1984), Research in Engineering Design (1989) and Design Journal(1997).

The new role of designers

Throughout the modern history of design, concerns have moved from being merely about selling a product, a service or creating artefacts to being more related to the development of strategies and making sense of situations (Owen, 1991). Progressively, "design has been recognised as a critical factor for business success" (Owen, 1998). Creativity, it seems, has changed from being understood as "change, innovation, invention, new ideas and new alternatives" (de Bono, 1999:111) to being defined as the "effective application of old ideas" (Pontis, 2011b). Nowadays, solutions are more and more concerned with solving a problem than with being new or developing ultimate design artefacts. "Effectiveness rather than novelty" tends to be the new motto (Pontis, 2011b).

Visocky O'Grady and Visocky O'Grady (2008) state that the current age presents issues that are different from those of previous periods. The massive amount of information and the overproduction of cluttered visual messages generate demand for more appropriate design tools to cope with them. Similarly, Cross (2000) adds that new problem-solving strategies are required to cope with the increasing complexity of design problems. This scenario generates new interests and the search for unfamiliar types of solving strategies. As an example, both areas of design specialty and sets of skills not exclusively related to the visual aspect of the discipline are needed to find solutions for the current design problems (Pontis, 2011b). Therefore, an essential requisite to deal with the current scenario is for us to have "high-quality designers and equip them with high quality design tools: theory, methods and processes" (Owen, 1998:10). Accordingly, the role of designers has changed and adapted. A varied range of design fields has emerged in the last 10 years, including those populated by information designers, service designers, communication designers, surface designers, information systems designers, environmental designers, human computer interaction designers, among others (Chartered Society of Designers; Purao et al., 2008). Some of these fields have evolved further than others, having clearer defined boundaries, aims and objectives. In all cases, the role of designers is gradually developing from creators of design objects to facilitators of dialogue, management, collaboration and understanding (Pontis, 2011b). Design skills have become tools to help other professionals perceive the meaning of situations by mapping complexity, drawing meaning from data and thus making sense.

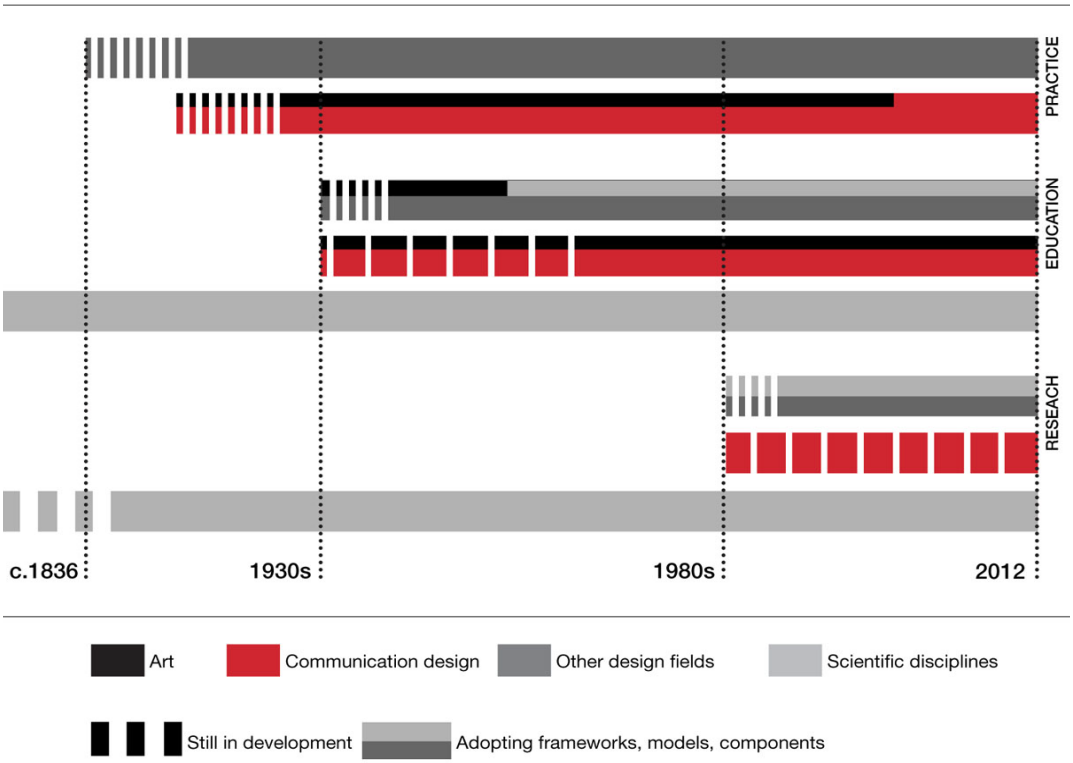

Figure 1: Evolution overview of practice, education and research contexts of communication design, scientific and other design disciplines. Links and influences between the three and art are indicated to visualise their current state in the three contexts.

The next sections discuss the scientific approach to research and give an overview of postgraduate scientific and communication design research current structures.

Defining science-based research

The emergence of modern science dates from the 17th century, with the first scientific journal "Philosophical Transactions of the Royal Society," published in 1665 (Lewis, 2002). The journal presented the growing amount of academic experimental scientific research being conducted (Lewis, 2002; Shadish et al., 2002). Works dated as early as those of William Gilbert's (1600) On the Loadstone and Magnetic Bodies and Galileo's (1612) Bodies that Stay Atop Water, or Move in It evidence scientific discoveries (Shadish et al., 2002). Consequently, disciplines like chemistry and astronomy have more robust histories of inquiry, scholarship and research experience than that of design (Owen, 1991,1998; Cross, 2002; Sloane in van den Akker et al., 2006). Three milestones played a major role in the scientific revolution, starting with the transition from the use of passive to systematic observation to correct errors in theory, followed by the use of planned and systematic observation to document the effects produced by experiments[2]. Finally, the use of external equipment to control or minimise the risk of bias observation added rigour and credibility to findings and results (Shadish et al., 2002).

Not all research study is necessarily of a scientific character, and

2. An experiment is defined as an act, a procedure, or "test under controlled conditions that is made to demonstrate a known truth, examine the validity of a hypothesis, or determine the efficacy of something previously untried" (Shadish et al., 2002).

not all disciplines that conduct research are scientific disciplines. This leads to the question: how is "scientific" defined? The main difference between non-scientific and scientific disciplines is that the latter bases its aims, goals, and methodologies on objective results, while the former defines those same elements in terms of self-evident experiences, without looking for understanding or improvement. A scientific discipline must have a solid corpus of concepts, theories and tools used by its research community in their contribution to a progressive development of the specialty (Schneider, 2007:212). Scientific disciplines define standards that are applied to measure each aspect and phase involved in a research process (IUBMB, 2011).

The main concern of science is not to gather data, but how data is processed into theories and evaluated through objective methods. The goal of scientific research is to formulate, demonstrate, prove or verify (confirm or infirm) hypotheses (Bunge, 2008). However, scientific knowledge cannot be an object of universal agreement; it can contradict established theories and may benefit some researchers but not all of them. The central point of scientific research is its verifiability (Reyna in ED466791, 2002). In other words, if other researchers follow the same set of procedures, under the same circumstances, they should arrive at similar conclusions. Therefore, a researcher from any discipline should detail and explain the specific parameters followed to achieve that result; this should make those procedures verifiable in an objective way.

In short, the essence of scientific research is systematic observation, measurement and experimental work, or alternative methods that could ensure similar levels of objectivity and rigour.

Postgraduate science-based education structure

Research structure

In science-based research, PhD candidates' subject of study must fit into the director of studies' area of expertise and be part of one of the research projects conducted at his/her research group or centre. Furthermore, the active presence of the director of studies as well as other members of a research group during PhD candidates' initial and training years is a key point. The director of studies initiates his/her PhD candidates into the research activity, guiding them at each step of the journey (Feuer and Towne in ED466791, 2002). Novice researchers learn skills, methodologies and problem-solving strategies from their director of studies and other members of the group. The definition of the action plan to start working with during the first year, including specific objectives, is the initial step, followed by the definition of research questions to be responded throughout experimental work.

Methodology and scientific attitude

Laboratory work is an intrinsic area of scientific research. Experimental work conducted in laboratories is essential for acquiring the necessary practice and knowledge to achieve valid and robust results. The "lab" becomes the place for learning, making mistakes and sharing stories. Experiments are repeated independently at least three times, and each time more tests are carried out to minimise and balance experimental errors and biological samples. Results are analysed statistically. Another

key point is to incorporate the necessary controls to avoid or minimise the risk of false conclusions. Methodology and rigour are essential to execute lab tasks and obtain valid results.

Communication channels
The sense of belonging to a research community is another key aspect of science-based research education. Research group discussions help develop initial questions to further stages (Feuer and Towne in ED466791, 2002). Group members discuss each other's work, contributing with ideas and constructive criticism. Group discussions open up new paradigms; generate new questions, new hypotheses, new experiments and tests.

Research progress is actively shared through different communication channels. In addition to international conferences, internal seminars and journal club presentations are highly common and mandatory in science based research education (IUBMB, 2011). Each research group member is obligated to present his/her work and progress weekly, as a way of both acquiring presentational skills and obtaining feedback and criticism at each stage of his/her investigation. The sharing of discoveries and findings happens in internal seminars, and then key points and results are communicated to peers in international conferences and through peer review publications.

The scientific approach to design
Scientific research is often associated with sciences like mathematics and chemistry, and less with humanistic ones like design. However, it can be conducted for investigation in any academic field. Scientific principles are common across all disciplines and fields, but what is intrinsic to each discipline is the forms of questions, answers and decisions, as they are based on each discipline's basic values and not on their contents (Reyna in ED466791, 2002; Feuer and Towne in ED466791, 2002). In this sense, Owen (1998) stresses that "ways of building knowledge" should respond to the needs and the "way design is studied and practiced."

Initially, design research was conducted by psychologists, sociologists and computer scientists, as design practitioners used to consider academic research as an "alien concept" for a practice-led discipline (Poggenpohl, 1979). Nevertheless, as mentioned previously in this paper, the interest in the scientific approach to design has been a constant concern throughout the modern history of design, often referred to by different authors, including Owen (1998), Cross (2000, 2002), Schneider (2007), Bonsiepe (2007) ,as "scientific design", "design science", or "design research."

This approach to design is concerned with the recognition of the laws of design and its activities, and the development of rules and guidelines (Cross, 2002). Poggenpohl (1979:353) explains that understanding the structure of the design activity would benefit professionals in the sense that they would be able to modify rules and control the problem-solving process, rather than "blindly following an unquestioned tradition." In addition, design research may bring some clarity to educational aspects and learning processes by discovering the connections that establish their

characteristics, functioning and outcomes (Sloane in van den Akker et al., 2006:20). This research approach also aims to improve understanding of design and its intended users through systematic methods and the study of practices, theories and designer's thinking and working procedures (Laurel, 2003). Thus it takes into consideration reflection on the nature of design knowledge and the contribution to the professional practice. This research approach also improves both designers' decision-making and solution-strategy processes by encouraging them to adopt rational procedures (Cross, 2007:45). Design research outcomes vary from tools, methods and systems to improve conceptual design and decision-making to theoretical frameworks and models (Purao et al., 2008).

In other words, a scientific research approach implies "systematic design", which means the procedures of designing being organised in a rational way (Cross, 2002), documenting data and a mixed understanding of problem-solving which combines institution and rationality.

Postgraduate communication design education structure

During the 1980s, research became the centre of design environments, supported by academic institutions and communities, which set the basis for the beginning of scientific design research (Schneider, 2007). Those research communities which spread in the 1990s across European universities and colleges, started growing at the end of that decade to become academic referents. The first PhD design programmes were structured in Japan and Europe and later considered in the United States (Owen, 1998). For guidance, these nascent research communities started following models and incorporating procedures from more experienced scientific disciplines (Owen, 1998; Cross, 2007; Boomgaard in Wesseling, 2011). However, while scientific engineering and product design research developed robust frameworks and now tend to follow the scientific model described earlier, communication design research at the postgraduate level is characterized by a different scenario.

Currently, communication design researchers are still searching for new paradigms to guide, strengthen and consolidate research evolution (Laurel, 2003). The following sections examine the main problems of communication design research.

Developing postgraduate programmes

Design research has greatly influenced the broad spectrum of design. Design education was "born from the needs of an industrial economy" (Owen, 1991) and education programmes evolved to meet that demand. As stated earlier, the definition of undergraduate communication design degree programmes as independent programmes than that of art was a response to emerging needs.

Similarly, postgraduate degree programmes, such as masters and PhDs, also responded to the growing demand for more specialised knowledge, and course structures were redefined to explore deeper areas of design not approached from undergraduate programmes (Owen, 1991). While undergraduate programmes in communication design have maturated and some universities,,e.g. University of Buenos Aires,offer four- or five-year courses in which technical skills are integrated with general knowledge and critical thinking, postgraduate

programmes in those design fields still need further development. Postgraduate programme structures vary among universities and even within departments. During the initial year, some programmes include introductory weekly seminars in their curricula in which basic aspects of research are unpacked (e.g. how to write a dissertation, how to use the Harvard style), but other programmes only offer monthly tutorials and little support.

In addition, the learning journey in communication design research differs to that of science or other design fields in the sense that research groups do not tend to have 'in-house' PhD candidates working together with more experienced researchers or supervisors. As a result a feeling of isolation often grows
among candidates.

Lack of structure

The research structure in communication design needs clarification. As an example, there is still "confusion and controversy" (Cross, 2002) over the nature of valid results (Hevner et al., 2004) and the definition of research methods (Owen, 1998; Phillips in van den Akker et al., 2006). In terms of the research process, obscure areas include selecting appropriate methodical approaches and then rigorously following them, adopting documenting strategies, and applying analytical and critical thinking throughout each research phase. Another common problem is that PhD candidates often prioritise the final phase of the research cycle, i.e. prototyping and testing the hypothesis, which results in the "oversimplification of scientifically-oriented research" (Phillips in van den Akker et al., 2006). Phillips (in van den Akker et al., 2006) stresses that through this "oversimplification" the "context of discovery" is being neglected. In other words, earlier stages, research, analyses and efforts undertaken to design a solution that is worthy of testing are not taken into account or valued.

Communication design often borrows social sciences models and methodologies (e,g. grounded theory, ethnography, observation, interviews, questionnaires, surveys, and video recordings among others) to understand and make sense of insights, and draw conclusions. However, to design investigations in which the human factor is not involved (or it is not the main component) but, for example, the aim is to examine a specific design outcome, those methods will not be a suitable approach. This fact evidences the need in communication design to develop its own set of methodologies.

Disperse research community and developing communication channels

The design research community is highly varied (Owen, 1998). Sloane (in van den Akker et al., 2006) explains that as a result, "design knowledge appears to be fragmented and dispersed", illustrating a difference from more established research communities. On the one hand, although both science-based and non-communication design research communities have established communication channels, local, national and international conferences and regular meetings, and supportive communities of scholars, communication design is still working on developing appropriate platforms for sharing knowledge.

On the other hand, even though technology has evolved enough to facilitate almost all type of dialogues, there still seems to be a lack of communication among designers from different cultures and countries (Pontis, 2012). In terms of communication design research, South American countries are a step behind Europe. Language could be pointed to as one possible barrier, as many scientific books, journals and books of proceedings are only written in English (IUBMB, 2011). However, the communication in these design fields among European, North American and Middle Eastern countries is not as fluid as it could be for a globalised age.

Gap between theory and practice

Almost 20 years ago, Owen (1991) predicted that "at the PhD level" design skills acquired during undergraduate courses "will be employed to help create the body of knowledge that will be used in industry and taught in the masters' and bachelors' programmes of the future". Nevertheless, in terms of communication design, there is a "persistent relevance gap between theory and practice" (Sloane in van den Akker et al., 2006:19); that is, between academia and industry. Despite Owen's (2001) prediction that design researchers would find opportunities for leadership, some communication designers face difficulties finding an adequate postgraduate academic position and a place in industry.

Communication design practice seems to have been greatly influenced by the nature of design education that, excluding engineering and architectural design, has followed the fine arts model in which personal exploration replaces research (Owen, 1991). Consequently, communication design practitioners tend to use more intuitive than rational procedures (Cross, 2007; Bruseberg and Mc-Donagh-Philip, 2000), and those who complement their decision-making with scientific theories, experiments or rational methodologies are rare.

Metascience: an integrative paradigm to scientific communication design research

As previously stated, Glanville (1998), Owen (1998) and Cross (2002) accentuate the need to look at more consolidated and robust scientific disciplines where appropriate to strengthen key aspects of design research. Meanwhile, Cross (2002) states that design "needs to develop its intellectual independence, whilst seeking to emulate other disciplines in standards of rigor in scholarship and research". Following Cross's idea and inspired by the concept of metascience (Bunge, 1959, 2000), this paper proposes an integrative approach to communication design research, stressing the adoption of key aspects of scientific research from more experienced disciplines ,e.g. engineering and product design, biology, chemistry, to consolidate its scientific approach, conducting pure communication design investigations. That is, in which the primary aim of a research study is to contribute to the communication design community (Laurel, 2003).

"Metascience", in imitation of metalanguage and metalogic, suggests that communication design would benefit from a relationship with more experienced research disciplines. This approach bridges different types of

sciences because "it studies the foundations and procedures of all sectors of verifiable knowledge" (Bunge, 1959:19). It is worth explaining that the benefits of the metascientific approach to communication design are the areas to be examined here, those to more experienced research disciplines being out of the remit of this paper. For that, an exhaustive study of scientific and other design fields needs may be required to identify gaps or areas in which communication design aspects could be of value.

This metascientific approach emboldens the adoption of scientific aspects that would enrich the structure of communication design research and bring scientific rationale (e.g. methodologies, techniques and philosophies) closer to novice communication design researchers. This integration does not imply that communication design has to turn into an imitation of science, but to acknowledge that by appropriating structures and parameters from more experienced research disciplines, communication design could bring some clarity into, for example, the context of doctoral education (Owen, 1991, 1998; Cross, 2002; Hevner, 2007).

Metascience in postgraduate communication design research

Design research education in the fields of design engineering (Owen, 1998, 2001), user centred design (Bruseberg and McDonagh-Philp, 2000) and human computer interaction design (Hevner et al., 2004) has a more robust trajectory than that of graphic and information design (Owen, 1998). This reflects on the structure of their postgraduate courses, which tend to be more organised and clearly defined. Research undertaken in communication design faces a more diffuse scenario, which may benefit from this metascientific approach. The integration of scientific aspects to communication design is not to add laboratory work to the postgraduate curricula. Instead, a possible alternative would be to encourage and provide a scientific attitude in the design community.

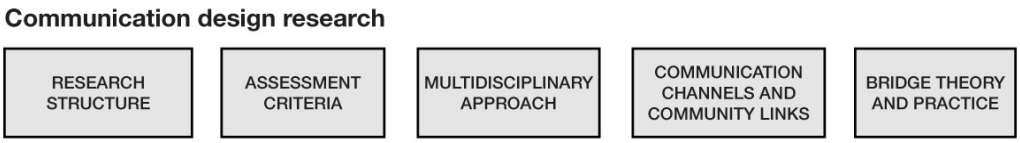

Figure 2: Postgraduate communication design research areas that may benefit from a metascientific approach.

Five areas (Figure 2) in which this approach may benefit communication design research are discussed in the following sections.

Towards a well-defined research structure

As in science-based research, the definition of an action plan is the first step in communication design research. This plan includes the following phases: approaching a problem, posing questions, building a theoretical model, defining methodologies, testing hypotheses and contributing to knowledge. An increasing number of design research models have been defined to give clarity and structure to academic design research (e.g. Owen, 1998; Bannan-Ritland, 2003). Mostly, they present ways

and frameworks in which scientific aspects can be adjusted from a design point of view. Adopting and adapting a research model based on scientific standards may be an attempt to reduce the risk of misjudging communication design research and give each phase its appropriate value. The following is an example of a research framework that could be used to structure communication design investigations.

Case study 1: Research framework

This model emerged from the integration of educational design and learning processes. Bannan-Ritland (2003:21) merged design stages, research phases and learning structures to define a framework which aimed to provide guidance to design research. She emphasises three necessary research components: "research questions, data and methods, and the need for researchers to design artefacts, processes and analyses at earlier stages in their research that can then be profitably used in later stages." The framework is the result of overlapping those components with that of the design process—informed information, enactment and evaluations (local and broader impacts) (Figure 3).

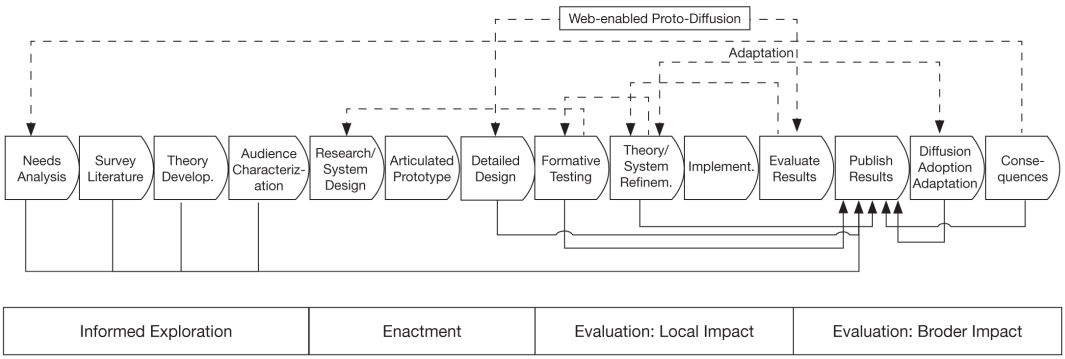

Figure 3: Integrative learning design framework by Bannan-Ritland (2003)

Defining assessment criteria

As previously stated, some research phases are not sharply defined in postgraduate communication design curricula. Equivalents to scientific method, and measures and criteria to assess the quality of communication design research remain questionable (Owen, 1998; Kelly, 2004; Phillips in van den Akker et al., 2006). In this sense, official postgraduate communication design research standards have not been defined (Kelly, 2004), despite the attempt of the Bologna Plan launched in 2005 (Bologna Process, 2005). This plan aimed to "create a European Higher Education Area (EHEA) based on international cooperation and academic exchange," establishing common education criteria for higher education (EHEA, 2005). On this matter, postgraduate research on experimental sciences is one step further ahead. The IUBMB report (2011) provides strong evidence of the current state of experimental scientific research in terms of research education, in particular for doctoral degrees. The Committee on Education of the IUBMB (2011) has set standards and criteria for postgraduate education in which each phase relevant for a scientific investigation is strictly defined and assessed. Standards described in this report cover all parties involved in the learning process

for becoming a scientist, including assessment criteria, research into candidate's and supervisor's responsibilities, and the components necessary to achieve satisfactory results. Kelly's (2004), Edelson's (in van den Akker et al., 2006) and Plomp's (in Plomp & Nieveen, 2007) studies give further analysis in this area, suggesting key points on which attention should be focused in order to evaluate the quality of design research. This evidences the diverse nature of frameworks or criteria for assessing postgraduate design education, which in fact appears to add confusion instead of clarity (Phillips in van den Akker et al., 2006).

As the result of combining aspects highlighted by existing frameworks the award of a communication design doctoral degree would respond to the education and training of "competent, reliable, and selfdirected individuals who have a strong sense of scientific integrity" (IUBMB, 2011:5). In addition, the graduate would have to demonstrate "the ability to pursue a problem to a meaningful conclusion" (IUBMB, 2011). The following case study presents a set of guidelines that could be used in communication design as a way to assess the quality of an investigation.

Case study 2: Guidelines for assessment

The work of Hevner et al. (2004) resents a set of seven guidelines that can be followed to structure and assess design research. Although these guidelines are not rigid or mandatory, "each of them should be addressed in some manner for design-science research to be complete", state Hevner et al. They may be combined with "creative skills and judgment to determine when, where, and how to apply each of the guidelines in a specific research project" (Hevner et al., 2004:82) (Table 1).

Guideline 1: Design as an Artifact	Design-science research must produce a viable artifact in the form of a construct, a model, a method, or an instantiation (a theory, a concept).
Guideline 2: Problem Relevance	The objective of design-science research is to develop technology-based solutions to important and relevant business problems.
Guideline 3: Design Evaluation	The utility, quality, and efficacy of a design artifact must be rigorously demonstrated via well-executed evaluation methods.
Guideline 4: Research Contributions	Effective design-science research must provide clear and verifiable contributions in the areas of the design artifact, design foundations, and/or design methodologies.
Guideline 5: Research Rigor	Design-science research relies upon the application of rigorous methods in both the construction and evaluation of the design artifact.
Guideline 6: Design as a Search Process	The search for an effective artifact requires utilizing available means to reach desired ends while satisfying laws in the problem environment.
Guideline 7: Communication of Research	Design-science research must be presented effectively both to technology-oriented as well as management-oriented audiences.

Table 1: Set of guidelines to measure design research quality (from Hevner et al., 2004)

Adopting a multidisciplinary approach

Currently in communication design practice, professionals' approach to problems is changing from a monodisciplinary one to a multidisciplinary one (Frascara, 2002; Purao et al., 2008). Therefore, professionals from different disciplines—e.g. marketing, engineering, technology, social sciences and communication—are frequently involved in planning and development stages, becoming indispensable components of the

modern problem-solving process. Likewise, researchers from different background disciplines appear to be combining expert knowledge to find the most appropriate action plan and set of methodologies, as generally a multidisciplinary approach tends to increase the success and quality of research studies (Kelly, 2004).

In communication design research a scientific attitude which would facilitate collaboration and dialogue with researchers from other areas of expertise, helping forward the development of multidisciplinary research work (Kelly, 2004) is still in its early days. Although in some research projects links with the social sciences are gradually being strengthened, the majority of postgraduate investigations tend to be conducted with little interaction or contributions from other disciplines. A metascientific approach would greatly benefit this particular aspect in communication design. Similarly, Owen (1998) and Purao et al. (2008) emphasise the need to strengthen relationships with research experts from other disciplines related to design, which are more established in terms of research than communication fields. Those experts would be familiar with the aims and nature of design, bringing pertinent attitudes and procedures, adding research guidance to the least consolidated design fields.

The multidisciplinary project conducted in collaboration between the College of Medicine and the College of Design, Architecture, Art and Planning (University of Cincinnati) (Zender and Crutcher, 2007) illustrates the benefits of disciplines working together.

Case study 3: Scientific information design

The ultimate aim of the multidisciplinary research collaboration between the University of Cincinnati's College of Medicine and College of Design, Architecture, Art and Planning (Zender and Crutcher, 2007) was to develop visual language techniques capable of revealing patterns and conceptual connections in the development of interactive displays that can be used for any discipline with a finite vocabulary. However, the broader objective was to show a scientific approach to information design and the benefits of visual communication to science.

A digital designer and a biomedical scientist composed the team of this project. The starting point was to use 40 published papers about Alzheimer's disease as the study sample. From the sample, they extracted 20 statements that express key concepts. Then, the designer of the group translated the scientific-based data into a visual object system (composed of icons, signs, glyphs and combinations of the first three objects) which displayed the most representative medical concepts extracted from the sample of study. Those concepts were used to develop the visual language techniques.

Strengthening communication channels and research community links

In particular, expansion and consolidation of a communication network for design knowledge may be a step towards drawing communication design researchers together. Communication design conferences and research centres are spread in Europe, US and Latin America, however their production and communication channels would benefit from stronger links among each other. The IUBMB report (2011) strongly recommends researchers' active participation and positive attitude to

"present and defend their research plans, to discuss their results and interpretations, to evaluate and comment on the work of others, and to participate in discussions on technical and scientific issues."

In other words, broader research training—e.g. peer network, preparation of proposals, discussion groups, methodological courses—and an increase in funding for a larger number of projects would undoubtedly contribute towards a fruitful evolution (Miller, 1981; Owen, 1998; Phillips in van den Akker et al., 2006) of communication design research. The following case gives an overview of the activities that are carried out in one of the few information design research centres in the UK.

Case study 4: Centre for Information Design Research (CDIR)
The CDIR, based in the University of Reading (UK), is focused on theory and practice of designing complex information. It is also an active platform with strong links with the Information Design Association (IDA), which annually organises international conferences on the field and is increasingly organising meetings in different institutions of London (e.g. Royal College of Art, Greenwich University). In addition, CDIR member's work is published in the peer-reviewed information design journal, spreading findings and new knowledge throughout the community.

Bridging theory and practice
As a way to bridge theory and practice, scientific rationale—i.e. analytical and critical thinking, and methodical procedures—has started to be applied to problem-solving strategies in communication design professional practice (Cross, 2002). In this respect, projects in which earlier phases have been thoroughly planned increase their chances of success and of having great impact in communication design practice (Owen, 1998; Laurel, 2003; Purao et al., 2008).

Communication design research could contribute to narrow the gap if its outcomes have "high external validity but are also teachable, learnable, and actionable by practitioners" (Sloane in van den Akker et al., 2006). This disposition would broaden both communication design researchers' and professionals' conception about the discipline, training them to notice what aspects of other fields could be beneficial for them.

The following case study introduces a practice-led information design investigation, which findings may have direct implications for professional practice.

Case study 5: Recommendations for professional practice
Combining visual content analysis (of 209 diagrams), graphic syntax theory (Engelhardt, 2002) and qualitative methods (semi-structured interviews and phenomenographic analysis) Mølhave's (2011:309) investigation presents a set of recommendations which 'aim at improving the effectiveness of visual output in future design practice in educational publishing'. The methodological strategy and inductive path followed throughout the research process indicated a way to bridge theory and practice. In other words, this investigation evidences how 'practitioners might use information design theory and descriptive models of the design process to review their practice, and use the findings to enhance it' (2011:348).

Conclusion

The full potential of design science has not yet been achieved in all design fields. While some fields—e.g. industrial, engineering and product design—do have robust research structures and strong communication channels, other fields—e.g. graphic and information design, referred to as communication design—are several steps behind. Currently, the communication design research community appears to be still asking questions about its boundaries and goals and borrowing methodologies from social sciences instead of focusing on developing its own research framework and tools. This scenario could be seen as a consequence of the way the different design fields have evolved. Unlike product and engineering design, communication design has followed the Arts & Crafts education model, which has been mostly led by self-expression and intuition and less concerned with understanding processes and following methodologies. This could be one of the reasons why communication design still seems to be facing difficulty in developing well-defined research frameworks, and connecting and adopting components provided by other disciplines (Frascara, 2002) such as methodologies, scientific rationale, rigour, assessment criteria and research process structures.

A metascientific approach was discussed here as an attempt to contribute to the evolution of the scientific approach to communication design. This metascientifc approach proposes the integration of aspects from experienced research academic disciplines into communication design research. This is presented as a dynamic collaboration in which the integration of aspects from scientific disciplines (i.e. rationale, analytical thinking, education programme structures) and from more experienced design disciplines (i.e. communication channels, methodologies, multidisciplinary approaches, design process models) has the potential of enhancing academic and industry success for all parties involved (Bunge, 2002) (Figure 4). This paper, however, has only focused on the benefits of this approach to communication design, hoping to have alert academics, students and professionals from different disciplines of its potential.

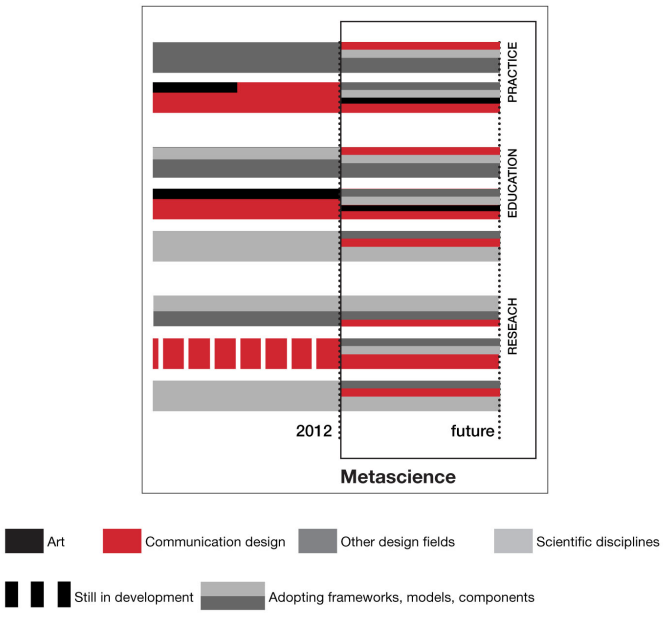

Figure 4: Hypothetical structure of design fields and scientific disciplines after adopting a metascientific approach.

A metascientific approach in communication design research may facilitate the creation of a body of knowledge, the development of more transparent pedagogical techniques, the strengthening of communication channels, and the building of bridges with allied disciplines and with industry; all requirements previously pointed out as fundamental requisites to move towards the consolidation of scientific research (Owen, 1991; Laurel, 2003; Purao et al., 2008). In addition, this approach would add clarity to the research structure, and to roles and tasks of all parties involved—candidates, supervisors and peers—in communication design research education. The integration of rigour and analytical thinking to communication design problem-solving would also lead to the definition of unambiguous action plans and research goals, which would aid in the formulation of questions and methodology, and enhance professional practice outcomes.

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Sheila Pontis was born in Buenos Aires, Argentina where she completed a five-year BA(Hons) course in Graphic Design at the University of Buenos Aires (UBA, FADU). When she finished her BA studies, she moved to Barcelona to complete a Postgraduate degree in Editorial Techniques and a Master of Advanced Studies degree (DEA diploma) in Information Graphics both at the University of Barcelona. In 2008 her passion for complex diagrams and information design brought her to London to complete her PhD at the London College of Communication, University of the Arts London.

Her academic and research experience includes guest lectures at the University of the Arts London (LCC,CCA), University of Leeds, University of Barcelona, Elisava School of Design (Spain), at international conferences (NCCR Iconic Criticism, IADIS, Bauhaus-Universität Weimar), and as keynote speaker at CIDAG (2010), DESIGNA (2011) and Malofiej (2012). Her work and research interests are oriented towards the conceptual aspects of information design, the creation of diagrams and design research education. Sheila's teaching experience started back at the University of Buenos Aires (Argentina) and now is a sessional lecturer at Ravensbourne College of Design, where she teaches information design and design thinking in the Masters of Design. Sheila has over 10 years of professional experience in information and editorial design working internationally. Since the beginning of 2011, Sheila is the co-founder of MapCI, a small information design company which focuses on research, consultancy and training. She has worked for 2CV Marketing Research Agency, Uscreates Social Design, Mind the Ad, Pelagos Consulting, Baalbaki Group, Elsevier Health Division and Que Fem-La Vanguardia Newspaper, among other companies.

I R I D E S C E N T

FACING THE FUTURE: POSTGRADUATE RESEARCH IN COMMUNICATION DESIGN

Reframing the Conversation about Doctoral Education: Professionalization and the Critical Role of Abstract Knowledge

Kate LaMere, Ph.D. 10 December 2012

Abstract

Within the community of visual communication design, there is debate concerning the utility of doctoral education to the profession. The outcomes of doctoral education as well as the academics themselves are frequently measured by their ability to directly affect practice. This theoretical paper reframes the conversation through the application of sociologist Andrew Abbott's (1988) model of the system of professions. Abbott's model of professionalization is explored and applied to the current state of visual communication design practice and education. In particular, the functions Abbott describes as abstract knowledge—contrary to practical professional knowledge—are used to explain the need for a tandem development of the professional doctorate (Doctorate of Design, D.Des.) and doctorate of philosophy in design (Ph.D. in design) degrees. Abstract knowledge and its counterparts—the academics—help contribute to the profession's power and prestige, which in turn support practice and thus allow the profession to maintain professional jurisdiction and control over its work. Using this theoretical framework, the nature, structure, and roles of professional and philosophical doctorates are described within the context of visual communication design, using examples of published research to illustrate the differences between knowledge created through practice (D.Des. study) and abstract knowledge created through philosophical enquiry (Ph.D. study). In applying Abbott's theory, it is evident that without the continued development of both types of doctoral degrees, especially increased support for the Ph.D. in design, visual communication design's abstract knowledge will suffer, putting the profession's status and control over its work in jeopardy.

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Introduction

In the 'art and design' design fields such as visual communication design, the brief history of graduate study that began with the Master of Arts, followed by the Master of Fine Arts, and most recently the Doctorate of Philosophy or Doctorate of Design, has led many to question the nature, purpose, and use of doctoral study (c.f. Biggs, 2000; Margolin, 2010; Friedman, 2011; Parker, 2011; Popov, 2011; Sless,

2011). Across doctoral programs in visual communication design there are a variety of approaches to plans of study and coursework. Within the international community, the use and application of doctoral research and study is frequently questioned [1]. The conversations about doctoral visual communication design education tend to pit one approach against another. Frequently the outcomes of doctoral study (e.g. knowledge generated and presented in dissertations, papers, books, etc.) are measured in terms of their direct utility to the profession. In other words, practitioners and researchers wonder how well study and research help visual communication designers better perform their jobs, work with clients, and solve design problems. As a result, within the visual communication design community debates about doctoral education generally fail to consider how different approaches to doctoral study—research through practice, traditional models of doctoral study, and any hybrid in between—produce distinctive types of knowledge about, and for, visual communication design. Further, the roles of these different types of knowledge are seldom mentioned, perhaps because they are not well understood and have not been explored within the context of visual communication design.

In this theoretical paper, sociologist Andrew Abbott's model of the system of professions (1988) is used as a framework for understanding the various types of doctoral study possible within visual communication design. Other design researchers have demonstrated the utility of Abbott's theory in understanding the interior design profession, defining its body of knowledge, and identifying different types of knowledge at play within interior design (Guerin & Martin, 2010; Guerin & Martin, 2004; Martin & Guerin, 2005). Building upon this precedent, Abbott's definition of different types of knowledge, how these types of knowledge operate and function within a profession, and each knowledge types' importance and roles in professionalization—or, the system of professions—is applied to visual communication design. While focused on the context of visual communication design doctoral study in the United States, this paper draws upon international examples of research to illustrate various types of knowledge in action within the profession. Abbott's (1988) theory provides a new means for understanding how visual communication design knowledge created through methods other than practice—and which may not be directly applicable to practice—not only supports and contributes meaningfully to the profession but also is critical to its growth and survival. This paper shifts the discussion about doctoral education toward a theory-based approach that supports plurality in methods for doctoral study in visual communication design.

Abbott's System of Professions and Abstract Knowledge

Abbott's theory of professions (1988), unlike other theories on professionalization (16–17), identifies a messy, complex, expansive system, depicting professions and work as a constantly changing landscape, rather than a set of discrete steps necessary to achieve the goal of professionalization. According to Abbott, professions exist in a system, wherein jurisdiction, or control over work, defines if, when, and how occupations become professions (2–9). Within the system professions are constantly in flux, wherein the boundaries between occupations are continually negotiated and contested. Jurisdiction—control over work—is a delicate balance amongst interconnected parts (2–9), and determines if, when, and for how long an occupation becomes a profession. The type of work performed, claims to jurisdiction, the effectiveness of a discipline's work addressing the problems over which it claims control, and a discipline's abstract knowledge affect jurisdiction (9). To use a phrase familiar in the design disciplines, Abbott's approach elucidates the wicked complexity of professions, identifying the myriad settings in which professionalization is negotiated (in the public's eyes, amongst other professions, in the law, etc.), the seemingly contradictory roles of different types of profession-based knowledge, and the constant battles that shift professional boundaries. While each part of this system must function properly to achieve professionalization, it is the definition and roles Abbott ascribes to abstract knowledge that are relevant to visual communication design doctoral education.

1 See the online discussion thread titled "Are PhDs a Threat to Design Education?" on the PhD-Design listserv found archived through the JISCMAIL service at http://tinyurl.com/8cxata4.

In the simplest terms, abstract knowledge is the formal academic ordering of knowledge needed to do the work of a profession (Abbott, 1988:54–57). Abbott defines abstract knowledge as hyper-rationalized, disassembled practical professional knowledge that is reorganized in a fashion that belies the complexity of actual work (54–57). Abstract knowledge is contrasted against practical professional knowledge; where abstract knowledge is organized, structured, and rationalized in the academy, practical professional knowledge is messy, resides in the workplace(s), and is tied to the tangible demands of clients and tasks. Almost as if in another world, abstract knowledge generally resides in the academy where it is developed and advanced by faculty, researchers, and the like. It is used to prepare aspiring professionals, and as such has been divided into teachable components that attempt to replicate the complexities of practice but do not. Academics dissect, scrutinize, hypothesize, and theorize about practice, creating abstract knowledge that is oftentimes converted into a form that is unrecognizable as knowledge applicable to the practical demands of work. In this process, the craft—skills, techniques, and processes—of practice is transformed into abstract knowledge. Practical professional knowledge is tied to particular objects, clients, or tasks, while abstract knowledge simplifies the contexts and issues of practice and can be disassociated from the realities of practice. Both practical professional and abstract knowledge are tied to their discipline and its work, but are separate and differ in their nature, structure, function, and role.

Abstract knowledge organizes the messy work of professional practice, making the work appear both more complex and at the same time more rational than it is in practice. Only in the academy do students and instructors work in the arbitrarily complete system of abstract knowledge that exists in textbooks, lectures, and projects (Abbott, 1988:56). For example, visual communication design students and instructors regularly remark on the dissimilarity between course projects and “real world” client work. In the classroom, design projects occur on a different type and length of schedule, oftentimes without a client, and lack the ramifications of professional work (e.g. having work declined by a client, projects that escalate beyond original parameters, receiving compensation for work, etc.). In the classroom the oftentimes messy, quick, and erratic nature of professional visual communication design work has been deconstructed to its most basic components and transformed to meet the demands of higher education teaching and learning (course schedules, the length of terms, the demands of outside commitments on students and faculty). The oftentimes highly rational schedule of class projects, the clarity of a design brief provided by an instructor, and cycles of critique and feedback belie the complexities of professional work while at the same time mobilizing abstract knowledge in visual communication design teaching and learning. Due to the fact that abstract knowledge dwells primarily in the academy, its most apparent role is preparing future professionals. However, abstract knowledge and its counterpart—academics—play other important roles within the system of professions.

Beyond its use in educating aspiring professionals, abstract knowledge legitimizes a profession by tracing its foundations to cultural values (e.g. rationality, logic, science) and through research it develops new ways of treating and diagnosing the problems/clients of professional practice (Abbott, 1988:56–57). Because of its distance from the contexts of practice, abstract knowledge provides opportunities for innovation. It allows comparisons or connections that seems illogical in professional practice and is unencumbered by the constraints of clients and the day-to-day demands of practice (55). Further, effective abstract knowledge creates a full and fully-rational system, leads to similar conclusions for the practical application of knowledge, is complete in its classification of the problems of practice, and defines the borders of professional jurisdiction with clarity (56–57). While separate and different from professional knowledge, abstract academic knowledge nonetheless augments, grows, complements, and defines the limits of professional knowledge and practice.

Importantly, a profession’s ability to retain jurisdiction, and therefore remain a profession, lies partly in the power and prestige of its academic knowledge. Abbott (1988:102) states that professional work without formalization—abstract knowledge—is perceived as craft. Clients—the public—will not treat skills that seem obvious as professional skill. As a result, abstract knowledge is more symbolic than practical (54). Abstract knowledge symbolizes professional work by formally organizing it, but by existing and thriving within the academy abstract knowledge becomes something different than—but still connected to—professional work. The public mistakenly believes that abstract knowledge is the same as practical professional knowledge (54). For the public, prestigious abstract knowledge implies effective professional

work, even if this is not the reality. Abstract knowledge, as visible in the academy, establishes and maintains the profession's prestige. Academics, those who primarily develop and advance abstract knowledge, play a critical role for professions. To quote Abbott, "Academic professionals demonstrate the rigor, the clarity, and the scientifically logical character of professional work, thereby legitimating that work in the context of larger values (1988:54)." The public views academics as the exemplars of professional knowledge. Academics that create, organize, and grow abstract knowledge contribute to the perceived level of professionalization, even though they might not actually do the practical work of the profession. The public's perception of a discipline is one arena in which a profession can make claims to its work and thus retain, gain, or lose jurisdiction (60–62). Therefore the prestige of a profession's academics as the public models of professional work, as well as the profession's standing within the academy, contribute to the maintenance of a profession's status.

Most importantly, "Knowledge is the currency of competition (Abbott, 1988:102)". In the system of professions there is constant competition from related, supporting, and adjacent occupations and professions. Too little abstraction—work perceived as craft—can make a jurisdiction weak. As interior design researchers Martin and Guerin (2010) state, "Abstract knowledge is the specialized knowledge that is required to practice and defines the interior design profession's jurisdictional boundaries through the development and maintenance of knowledge (2010:E2–E3)." Within visual communication design, maintenance of abstract knowledge is equally important to the protection of work. Competition from fields such as interaction (or interactive) design, service design, and others is apparent. Illustrating the design fields' situations, Margolin (2010:74) pointed out that the work of design research is often done by those trained in other disciplines such as anthropology, computer science, and psychology. Visual communication design is in a position to either develop its abstract knowledge and retain jurisdiction, or risk losing control to another profession.

Abstract knowledge is one of many facets that affect a profession's jurisdiction. This type of knowledge is based upon practical professional knowledge and work, but is different in its nature, structure, and function. Dwelling primarily in the academy, abstract knowledge is used to prepare future professionals, trace the profession to cultural values (rationality, science), and provide opportunities for innovation. Abstract knowledge is essential to professions because it demonstrates to the public (and other professions) that the profession's work is expert rather than craft, in other words—professional. This occurs because the knowledge of practice has been transformed, systematized, flattened, and hyper-rationalized in the academy. Knowledge that might initially seem simple is made to appear complex through abstraction. Academics play an important role, as the visible exemplars of their profession. The power and prestige of abstract knowledge and the profession's academics affect how and if the public perceives an occupation as a profession. Thus, the development of abstract knowledge is essential to the growth of a profession and the control of its jurisdiction, as it ultimately affects if, when, and how an occupation becomes a profession. The role of abstract knowledge and academics defined by Abbott (1988) provides a new lens for evaluating the role and significance of doctoral education in visual communication design.

Abstract Knowledge and Higher Education in Visual Communication Design

For young professions in the field of visual communication design, Abbott's (1988) definition of abstract knowledge is particularly significant and useful in understanding the roles and functions of doctoral visual communication design education. In the modern history of work and professions, the design disciplines are young. Despite the fact that the act of designing references humankind's earliest construction of tools, and design work is rooted in the long history of the apprentice, master, and atelier traditions, *professional* design work only dates to the early twentieth century (Friedman, 1997:54–55; Margolin, 2010:73–74). With such brief professional roots, visual communication design might be the youngest of the design professions. Not surprisingly, the development of visual communication design programs in higher education, particularly at the graduate level, is ongoing. In the United States, where doctoral study is nascent and has yet to gain momentum, the studio-based Master of Fine Arts (or Master of Graphic Design) is still the degree of choice for those pursuing graduate education. Few are aware of the

possibility of doctoral study, much less the differences between masters and doctoral study, and even fewer the differences between various types of doctoral studies and programs (Davis, 2008a).

As visual communication design—and other design disciplines—develops, conversations about higher education for design are ongoing, with voices from all sides expressing their positions. Debates about design higher education on the PhD-Design listserv sparked by an online essay about undergraduate design education (Norman, 2011) illustrate both an interest in departing from the craft-based or art school-based roots of design education, as well as the many concerns with doing so. Within visual communication design the issue of naming the discipline (graphic design versus visual communication design) demonstrates ongoing interest in the evolving nature of the profession (c.f. ICOGRADA, 2007; Poynor, 2011). Further, AIGA's Designer of 2015 project (AIGA, n.d.) and the related work of noted visual communication design educator Meredith Davis (2008a; 2008b) show the impulse to examine and reconsider design higher education in the United States. In spite of the desire to more closely examine visual communication education, especially graduate education, current discussions tend to be superficial, contrasting one approach against another.

As these conversations continue, it is critical that dialogues are grounded in relevant theory, rather than in opinion, anecdote, or experience. By applying Abbott's theory of professions (1988) to visual communication design, we can begin to see how graduate education functions within the complex system of professions. This permits a better appreciation of the contributions graduate education, the academy, and academics make to the profession beyond educating the next generation of designers. In visual communication design, however, there is confusion about the types of doctoral education possible and few understand the important differences between professional and philosophical doctoral degrees (c.f. Biggs, 2000; Davis, 2008a). It is critical to understand these two dominant traditions of doctoral education, applying Abbott's theory to understanding the roles and functions of different approaches to doctoral study.

For a variety of professions there are two types of doctoral education leading to terminal degrees. In education and psychology, for example, there are the doctorate of education (Ed.D.) and the doctorate of philosophy in education (Ph.D. in education), and the doctorate of psychology (Psy.D.) and the doctorate of philosophy in psychology (Ph.D. in psychology). The doctorates in education, psychology, or even design, are focused on the problems and situations of practice. Historically, these types of degrees, called professional doctorates, include more professional training with less emphasis on research (Biggs, 2000). In comparison, doctorates of philosophy degrees (Ph.D. in psychology, education, or design) focus on building a profession's body of knowledge. This occurs through the study of the discipline's philosophy, considering issues such as knowledge creation and production, among others. The doctorate of philosophy is generally removed from the everyday contexts, clients, and issues of practice, which allows this type of research and study to focus on building abstract knowledge.

Within visual communication design there are a variety of approaches to doctoral study, however there is little clarity regarding the differences amongst them. Distinctions between the Ed.D. and Ph.D. in Education, or the Psy.D. and Ph.D. in psychology, are clear when compared to visual communication design's messy landscape of Master's of Fine Arts (MFA), Master's of Graphic Design (MGD), Ph.D. in Design, and Doctorate of Design (D.Des.) degrees. Using existing academic tradition and Abbott's theory as guides, the roles and functions of professional and philosophical doctorates in visual communication design can become well defined. Professional doctoral degrees, such the Doctorate in Design—as the name suggests—should focus on research through practice. This type of degree allows those interested in the advanced study of the problems, contexts, and issues of visual communication design practice to interrogate, study, and build professional knowledge. This knowledge production is key to retaining visual communication design's ties to the problems and contexts of its work. An example of this is the research of Neal Haslem (2011). In a recent publication, Haslem articulately described his practice-led research, using Schön's (1983) theory of reflective practice as a framework for understanding designing a business system (2011:1–2). This scholarly research, complete with a theoretical framework and engaging visual explanation of the design process, focuses on a specific problem related to a client and design practice. Halsem's scholarship is representative of a corpus of research through practice that can be found

sprinkled throughout peer-reviewed design journals (e.g. *Iridescent, Visible Language, Design Issues, Visual Communication, International Journal of Design*).

To complement intense study of professional work, the Ph.D. focuses on the philosophical underpinnings of the discipline and the development of abstract knowledge. While professions across the academy approach Ph.D. training and study differently, an emphasis on investigating philosophical underpinnings binds them together. It is in this common act that each discipline traces its roots to core cultural values, thus supporting the profession. This type of doctoral study and research can involve engaging theory and methods from other disciplines as well as exploring issues of philosophy—ontology and epistemology—of visual communication design. Research of this nature can also involve meta-analysis of the nature of the discipline that asks broad questions about visual communication design practice and knowledge. An example of this is the work of Teena Clerke. She explored the application of phenomenological theory to understanding women visual communication designers' lived experiences (2009:32–33) as design professionals. While focused on the practice of visual communication design, Clerke's research considers larger questions about what it means to be a woman practicing design. Through the application of theory from outside visual communication design, Clerke helps trace the discipline to established paradigms of scientific enquiry, even if her research method interrogates the conventions of research and academic knowledge production (2009:37). As Clerke points out, this work concentrates on underlying epistemological suppositions in the field of visual communication design. As such, Clerke's research is an example of the development of abstract knowledge.

The coexistence—and growth of—professional and philosophical doctorates for visual communication design can, as considered through the lens of Abbott's theory, contribute meaningfully to the profession. Both types of doctoral study support the profession by increasing its power and prestige. The professional Doctorate of Design could continue the practice-based research commonly undertaken with the MFA or MGD so common in the United States. Scholarly enquiry focused on the contexts, issues, and tasks of practice is critical—as Abbott points out—to innovation within the profession as well as developing new diagnoses (solutions, resolutions) for the specific and complex issues of clients (design problems, issues, domains). As such, the professional doctorate clearly contributes to professional practice. However, the philosophical doctorate must be advanced alongside the professional doctorate precisely because it contributes in different ways to the profession—and may not directly feed advancements in professional practice.

The Ph.D. in design should trace the foundations of visual communication design to the core cultural vales of rationality and scientific enquiry. The Ph.D. permits visual communication design researchers to step away from the contexts of practice, question assumptions, ask how and why particularly phenomena occur, and interrogate the nature of the profession on a philosophical level. As with the professional doctoral, the Ph.D. has the potential to develop new innovations related to practice. However, the Ph.D.—due to its nature and structure—has the unique ability to build and advance abstract knowledge. And, without the continued growth and development of abstract knowledge, visual communication design risks losing its status as a profession. Lack of abstract knowledge will lead the public to mistakenly believe that visual communication design work is craft-based, rather than expert. Further, without abstract knowledge and visual communication design's continued growth within the academy, the profession risks weakening its status in the eyes of the public—and within the academy itself. To continue as a profession, visual communication design must retain its jurisdiction, fending off competition from related disciplines.

It is essential that both pathways for doctoral education in visual communication design be advanced. As Margolin (2010) has noted, the work of design research (in general) is already being poached by other disciplines. Visual communication design must resist this occupation by building its abstract knowledge. While reflective conversations about graduate education in visual communication will inevitably continue, if opinion-based debates prevent action and forward movement the risks to the profession are real. Abstract knowledge production will fail to advance, visual communication design research will be done by academics in other professions, and visual communication design work will be perceived solely as craft-based rather than expert work. The status of the profession will diminish because graduate education, as well as the state of visual communication design researchers and educators, will not keep up with the rest

of the academy. Without continued growth, visual communication design academics will lose any prestige and power they have attained in the eyes of the public. Therefore, critiques of the philosophical doctorate must be reframed and rooted in theory. By applying Abbott's system of professions to visual communication design graduate education, we can understand the important role of abstract knowledge, visual communication design within the academy, and visual communication design educators and researchers. While supporting the profession directly by preparing future professions, these facets of the profession support visual communication design by contributing to it status and prestige, which in turn helps the profession retain its jurisdiction.

Moving Forward

To advance, visual communication design must be vigilant. Meta research about the design professions that moves beyond the acts and artifacts of design practice is essential to controlling and building an abstract body of knowledge. When this type of research is criticized because it may not directly feed back into practice, it must be remembered—and vocally declared—that this is not the role of the doctorate of philosophy, nor the sole role of academic researchers or abstract knowledge. Together, visual communication design's abstract knowledge, its academics, and its presence within the academy, help secure its status as a profession. By increasing the visibility of visual communication design within the academy, the profession's power and prestige are supported, which directly supports every designer within the profession. For, if the public does not view the work of visual communication designers as expert, practitioners will face increasing challenges in the workplace. They risk being perceived as the purveyors of an easily understood craft, and might ultimately lose control over their work.

The path forward is through the dual growth of the Doctorate of Design and the Doctorate of Philosophy in design. In particular, visual communication design must focus on building its body of knowledge, especially its abstract knowledge. In visual communication design, academic writing largely takes the form of professional commentary, essays, and reflection. Abbott's theory can be seen as a call to develop a better system of disseminating abstract academic knowledge. A panel of design researchers at the 2010 New Contexts/New Practices AIGA Design Educators' Conference (Raleigh, North Carolina, US) discussed this very issue and highlighted the need to develop more peer-reviewed venues for visual communication design research (Lasky, 2010). This is important because the public will not perceive academic work that is published in the trade press as abstract knowledge. Moreover, as emphasized throughout this paper, it will take a system of doctoral study, peer review, publishing, and research dissemination focused on building abstract knowledge to strengthen visual communication design's jurisdiction.

While there is a small cadre of design philosophers and theorists, visual communication design needs more Ph.D. study focused on building abstract knowledge. Without the development of a body of abstract knowledge, design work runs the risk of being easily grasped by clients and the public, viewed as mechanical, and thus perceived as craft rather than professional work (Abbott, 1988:103). And, while there is value in craft, craft—as seen through the lens of Abbott's theory—will never be elevated to the level of professional work without the support of abstract knowledge. Moreover, the ability to relate design knowledge to philosophical underpinnings, theory and methods from across academic disciplines is necessary to legitimize visual communication design research and professional work within the academy.

In tandem with the development of Ph.D. programs in visual communication design, the professional doctorate must be supported. The differences between the two degrees should be clearly articulated within design education communities, as well as amongst practitioners. Doctoral programs in visual communication design have the responsibility to coherently communicate types of degrees offered as effectively as the differences between professional doctorates and doctorates of philosophy. Potential students should be able to fully grasp the difference between research through practice (the D.Des.) versus research that builds abstract knowledge (the Ph.D.). This can be achieved through better communication of the nature and roles of different types of doctoral studies, as well as better articulation amongst institutions and programs.

In addition to clarifying communication about doctoral programs, accreditation bodies and professional organizations must participate by developing and articulating standards for different types of doctoral study. In the United States, too little attention is paid to doctorate degrees in graphic design by the National Association of Schools of Art and Design, the accrediting body for higher education, and the AIGA (AIGA & NASAD n.d.:4). And while the number of doctoral programs in graphic design in the US is small (fewer than a dozen exist), better communication of the differences between degree paths and amongst existing programs in the US is essential. In the international doctoral education community, there needs to be a clear discussion about doctoral degree goals and directions. The development and application of international standards for doctoral study would aid students, faculty, and professionals in navigating the oftentimes-confusing world of doctoral study. Visual communication design, as a global community, has the responsibility to articulate the nature, functions, and roles of different types of doctoral degrees.

As visual communication design in higher education continues to transform and expand, conversations about different types of graduate study must move beyond opinion and find root in theory. Abbott's theory of professions (1988), especially the functions and roles he ascribes abstract knowledge, are one method of reframing these debates. Abstract knowledge, as opposed to the messy complexity of practical professional knowledge, is highly structured and organized. It is used to teach aspiring professionals, provides opportunities for innovation, and is not bound to the demands, tasks, and clients of practice. Academics, alongside abstract knowledge, contribute to visual communication design by maintaining the profession's power and prestige within the academy and within the eyes of the public. However, without the continued growth and advancement of abstract knowledge, visual communication design faces many challenges. The way forward is through the dual growth of both professional and philosophical doctorates. By supporting both routes to higher education in visual communication design the profession can retain direct ties to practice (via the D.Des.) as well as improve its abstract knowledge (via the Ph.D. in design). Academics and practitioners alike must work together to support both routes for doctoral study. Better understanding about these complementary degrees can be achieved through clear communication of the differences between them, their roles and functions within the profession, and the differences amongst programs and institutions. Furthermore, venues for peer-review and dissemination of research must be expanded and improved. Faculty, researchers, accrediting bodies, and professional organizations must work together to create a unified voice and vision that reinforces the roles and functions of professional and philosophical doctorates. If abstract knowledge within visual communication design is not cultivated, its production will be colonized by other disciplines. As a result, status and prestige may suffer and all those involved with the profession—practitioners, educators, and researchers—will feel the effects of losing jurisdiction, or control over their work.

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IRIDESCENT

DESIGN EDUCATION

Towards an integrated pedagogy of graphics in the United Kingdom

Robert Harland, 3 November 2012

Abstract

In this discussion paper, graphic design, graphic science and graphic art are acknowledged, substantiating the need for benefits associated with a wider perspective on how students learn *graphics* in the United Kingdom. A case is presented for the adoption of a single word descriptor (compared to the many variants that have developed in the higher education sector) by discussing: the historical development of art and design in the United Kingdom; the widespread use of the term graphics; an emphasis on research neglect in a field that has diversified and expanded to become one of the largest groups of students in an enlarged university sector; a lack of national professional representation that has neglected the opportunity to link practice, pedagogy and research in a growing field. The inquiry begins with an overview, of the historical context, before an exploration into the recent expansion of a category of closely related words that originate from the same etymological source. Finally, consideration is given to the scope of influences that may form the basis of research into graphic method as a logical development of first-order design principles. The paper calls for renewed efforts, by graphics educators in the UK, to establish their own professional body to consolidate shared interest in graphics pedagogy between disciplinary perspectives.

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Introduction

This paper brings together observations made after more than a decade of teaching graphic design, since 2001, in three contrasting university settings in the United Kingdom (UK) that are either teaching or research focused. Each university positioned undergraduate graphic design education in one of three ways: as a programme alongside other specialist programmes, for example, illustration and digital media; as an all encompassing graphic design degree, open and inclusive of a wide range of specialisms; and as a module in a programme called graphic communication. Such observations are inevitably tarnished with personal bias from a deep-rooted engagement with graphic design preceded by a fifteen-year period in professional practice. However, the paper attempts to balance and test opinions against empirical evidence, supported by the use of references, that substantiate the views expressed here and offer opportunity for further reading. Consequently, there is an interweaving of speculative argumentation, with factual evidence that seeks to establish relationships between a fragmented and complex set of relationships, that it may be better united under a single term: *graphics*. In this sense it is an transdisciplinary scoping study, that aspires to build a foundation for

future research collaboration, in what is a fast changing UK higher education landscape, and further afield.

Some historical context

Much of the following discussion will benefit from a basic introduction to recent historical factors in the UK art and design higher education system. In the UK, graphic design now resides as a distinct discipline, but has been separate from university education until recently. The expansion of the university sector in the UK, during the two decades following 1992, has resulted in a closer proximity of some subjects, fields and disciplines that had never before been taught in the same institutional setting. Consequently, traditional art and design education is now also found in research-intensive universities such as Loughborough University, or the University of Dundee in Scotland, broadening the need to reclassify knowledge. The multidimensional nature of how knowledge has been categorized precedes an infusion of learning and teaching methods from 'artists' and 'designers' that have since added new approaches to those developed by the 'physical scientists' or 'literary intellectuals' that are said to reside at two 'poles' (Snow, 1964:4), often characterized as hard and soft disciplines. The physical sciences and engineering or history and languages (Donald, 1986:269–270), provide specific examples of this. These poles represent a perceived dilemma between science and art that depend on a 'systematic search' or 'intuitive creativity'. Some have looked to reconcile this quandary through design (Eder, 1995:127), but it is seldom acknowledged that design has been a fundamental aspect of formal 'art school' education predating many now established disciplines in academia.

Formal design education in the UK dates back to 1837 in London, and has evolved into the many schools of art and design now present in the University sector. This happened ten years after the formation of a University College in London, and predates the establishment of the Bartlett School of Architecture at University College London in 1841 (Rust et al., 2007:15). For most of the time since, art and design (from this point onwards referred to as a single disciplinary category) further developed independent of the university sector and its now mature research agenda. Over a similar period of time, art and design developed a mature studio practice culture with a distinct pedagogy, distinguished by a transformation, through what Thierry de Duve (1985:19–31) refers to as the traditional talent-métier-imitation (academic) model, towards the modern creativity-medium-invention (Bauhaus) model. During the nineteenth century art and design gradually established itself across the UK, and by the latter part of the century most large towns and cities had a school of art and design (ADM-HEA and NESTA, 2007:7), pre-dating many of the now well-established UK universities. According to Wayman and Brown (ADM-HEA and NESTA, 2007:8), these schools fostered a highly distinctive educational process that contributed to establishing the UK as a world-leader in innovation and creativity. They go on to say that art and design education in this form remained independent, as regional art colleges, until the late 1960s and early 1970s when most were amalgamated with new polytechnics. Polytechnics in turn became new universities in 1992, bringing the majority of formal art and design education into an expanded university sector, not seen before in the UK. This also exposed art and design to a different funding regime (national, rather than local authority controlled) and research performance reviews, every seven years, to determine additional government funding for research. Unsurprisingly, art and design research in the UK has since been in its infancy; however, the 2008 research assessment exercise (RAE) demonstrated positive signs in the development of a research culture suited to the specific nature of learning in the subject, and the forthcoming research excellence framework (REF) is much anticipated. How art and design research culture now integrates, with the longer established research community, is arguably the next important stage for art and design education. This paper attempts to contribute to this process by outlining some arguments that point the way towards sharing pedagogical perspectives in what might be better referred to using the abbreviated term 'graphics'. Before further justification for this shortened form, further consideration of the importance of graphic design in art and design education is necessary.

From the perspective of art and design, the provision of graphic design, in various guises, has remained robust through this recent period of integration, even though increased student numbers, due to expansion of the sector, has had a significant impact on the delivery of the subject. Graphic design has been able to accommodate much of this expansion through diversification into sub-specialties and the rise of alternative degree award titles, for example, illustration, digital media, graphic communication, visual communication and others (Harland, 2007:5). This was actively

encouraged by a review panel of graphic design studies in polytechnics and colleges prior to the change from polytechnic to university status (CNAA, 1990:41). However, there have been signs that this process is slowing and returning to something resembling what went before. Reasons for this might be that some schools of art and design are recognizing a loss of a diagnostic experience that traditional graphic design programmes provided. Also, the recognition that staffing small specialist provision, in subject areas that historically evolved around studio-based learning, is proving to be expensive by comparison to the traditional lecture-based learning and teaching methods that universities have utilized. A predicted drop in student numbers in 2012, due to demographic changes and economic factors due to increased student fees, are also having an impact, and programmes are regrouping through consolidation exercises that bring academic expertise back together. For example, in some institutions the sub-specialities that developed in the 1990s are now being reformed into more cohesive programmes, often with conjoined titles such as graphic design and illustration. To some who think of graphic design education as a diagnostic transdisciplinary experience this may appear as a misnomer.

Attempting to reflect a sense of academic alignment with other emerging disciplines, such as communication studies, some graphic design programmes have forsaken *design* and replaced it with *communication* in their title. Similarly, the more generic title *visual communication* has been given prominence in a small number of institutions. To some extent this is ironic because design is said to have matured as an academic discipline (Julier, 2008:1), arguably bringing much needed academic credibility to the art and design sector, and some have forsaken the term. One example of this is a UK university who ran a very successful graphic design programme in the 1980s. In the late 1990s it diversified into separate degree programme awards into graphic design, illustration and digital media, with little integration between the three, only to regroup under the collective banner of visual communication soon after the millennium. More recently, the same institution promoted a combined undergraduate/postgraduate learning experience leading to an MDes Visual Communication from three specialist pathways in graphic design, illustration and digital media. Now, it has returned to three separate degree awards in graphic design, illustration and digital media. This may be a natural development of academic interests, but it is also an indication of how graphic design has remained ill defined for some, when it is an holistic field that has continued to prosper despite the attempt of specialisms to develop independently. In 1990, the CNAA review team could not define graphic design as much more than a convenient way to group specialisms:

> … the generic title ‘graphic design’ is understood to apply to the broad range of specialism’s contributing to visual design for communication media, whether printed or electronic, static or time-based. The media include print (e.g. books, magazines and promotional material) and electronic media (e.g. computer graphics and video). The technical specialisms include illustration, typography and photography. Its applications may be informative, persuasive or recreational, and include information design, advertising design, corporate identity design, packaging design and publishing design. (CNAA, 1990:13)

It seems that, unable to define graphic design more succinctly, it has been convenient to adopt other phrases, such as visual communication. Yet visual communication is attributed to a significantly larger community of educators than reside in art and design (Harland 2011a:206–219), and the interdisciplinary diversity gains that may have been intended are yet to be seen, if current displays of work by art and design degree students is anything to go by. At the D&AD New Blood exhibition of graduate work in London, June 2012, the range of programme titles shown in Table 1 demonstrates diversity emerging from what, using the above CNAA definition, may have constituted graphic design two decades ago.

Table 1: Programme titles of exhibitors at D&AD Young Blood 2012, London

Art & Design: Graphic Design	Advertising
Art & Design (Visual Communication Design)	Advertising Design
Graphic Arts	Advertising: Creative
	Advertising and Brand Design
Graphic Design	Creative Advertising
Graphic Design/Graphic Design & Photography	Advertising Specialist
Graphic Design and Illustration	
Graphic Design and Illustration	Design for Publishing
Graphic Design & Typography	Design & Visual Arts
Graphic & 3D Digital Design	Design for Communication
Graphic & Communication Design	Design for Visual Communication
Graphic Communication Design	
Graphic Information Design	Multimedia
Graphic Communication	Graphic and Multimedia Design
Communication Design	Digital Media Production & Contemporary Arts Practice
Visual Communication	Motion Graphics
Visual Communication: Graphics and Illustration	Motion Graphics and Animation
	Interactive Media Design
Photography	
Illustration	
Illustration & Animation	
Illustration and Visual Communication	

The point being made here is that graphics, in its many guises, is clearly central to art and design in higher education, and design is one aspect of that. One possible interpretation, of recent developments, is to believe that the ambiguity associated with the term *design* (Heskett, 2005:1–7), is now being replaced with the ambiguity associated with the term *communication* (Williams, 1983:72–73). This should not be surprising as graphic design is listed as a subspecialty of visual communication and through this the subject is linked to a wider range of topics as diverse as architecture, linguistics and archaeology (Moriarty and Barnbatsis, 2005, p. xviii). The same trend is reported to be happening in Australia, where communication design is said to be replacing graphic design, but without any clear understanding about what communication design is or might be (Vaughan, 2008). The trend is supported with generalizations that graphic design has evolved to visual communication, and still further to communication design (Buchanan 2001:10). However, such claims are unsupported with factual evidence and the list above suggests this is not the case in the UK. There are clearly instances where this has happened, but these are arguably dwarfed by the establishment of new graphic design programmes worldwide, benefitting from increased access to subject literature, in countries, like Malaysia, that do not have an established tradition of art and design in higher education. Different traditions clearly exist and continue to develop, but this requires deeper research to determine how graphic design is developing worldwide, and how significantly other specialist programmes and non-specialist programmes differ.

This may be difficult to achieve, from the UK perspective, without the active presence of a professional body that can bring together the various fragments and scope of the field. This has been seriously lacking in recent decades. Whereas many subjects, studied in UK higher education, benefit from a close relationship with a professional body, society or subject association that aspire to integrate the needs of practice, education and research, at present graphic design does not. Those organizations that have aspired to demonstrate some commitment to linking practice, education and sometimes research, generally lack the breadth and depth to affect future direction of the subject. They have either failed to maintain a level of consistency and specificity (Chartered Society of Designers/CSD); are too industry focused (Design and Art Direction/D&AD) and vulnerable to expansion and contraction (see Design week, 13 August 2009); are too specialized (Association of Illustrators/AOI or the International Society of Typographic Designers/ISTD); favor a different name and emphasis (Information Design Association); or have experienced significant decline, reorganization and unfulfilled potential (The Design Education Association/DEED) as yet. Each has developed its own particular concerns, but few can be said to have galvanized an agenda for the field over time that scopes the higher education landscape. Similarly, none have been able to be influential in the way those associated with general education have, such as the National Society for Educators in Art & Design (NSEAD) or Design and Technology Association (DATA). In research, organizations, such as the Design Research Society (DRS), have been distant from day-to-day practice and education in graphic design. The International Council of Graphic Design Associations (ICOGRADA) is no longer closely associated with educational activities in the UK, since the death of significant

graphic design pioneers such as F.K. Henrion or Alan Fletcher, compared to activities in the 1970s and 1980s.

The consequence of this is that graphic design has been significantly underrepresented in recent decades, and this is disproportionate to the size and scope of the subject in higher education in the UK. It is therefore unsurprising the subject has not figured by name in research reviews across the art and design sector (Rust et al., 2007:31). Note, for example, the list of headings used to classify research degrees by subject group over the thirty year period since the mid-1970s (Fisher and Mottram, 2006:8). These include architecture, craft, design subjects, fine art, photography and film, other creative art and design, textiles and fashion, and visual communication.

Considering the popularity, scope, and potential reach of activities associated with graphic design, there is a perceived need to unite a disparate set of descriptors, activities and loose affiliations, for the benefit of a large academic community of students and educators. If art and design matures as a university discipline, the heritage associated with graphic design offers potential to cross disciplinary boundaries. However, it is hypothesized here that the fragmentation, that has come with expansion, may require graphic design to reconsider and reside within an enlarged disciplinary context, that is not called visual communication, but an abbreviated single discipline of graphics that also acknowledges design. The rest of this paper considers a case for a single word to represent a distinct, but increasingly widespread activity gaining in recognition that is already used beyond art and design. For example, Jacques Bertin used the term in the title of his book *Semiology of Graphics* (1983), though the scope of his project is limited compared to the arguments presented in this paper, being concerned only with diagrams, networks and maps.

A case for the single term graphics

Since the early 1990s, it seems we have been increasingly living in a *graphic age*, and this is set to continue. On Saturday, 8 October, 2011, a new word entered public consciousness in the UK. *The Guardian* newspaper published an article with the headline ‘Graphene: it’s thin, grey and it might just be the future*’* (Jha and Milmo, 2011:21). In the article, the Chancellor of the Exchequer for the UK, George Osborne, is quoted as saying: ‘It’s the strongest, thinnest, best conducting material known to science, to be used in everything from aircraft wings to microchips’. This is also remarkable for etymological reasons. First, little more than a decade in, the twenty-first century is predicted to benefit significantly from a substance that derives its name from the Greek *graphé*. Second, it further acknowledges a rise in prominence of dictionary words and phrases since the early 1980s, from the same source. Then, in between *grape* and *grapple*, the single word *graph* represented a number of variants (Kirkpatrick, 1983). Within a relatively long entry for *graph* could be found descriptions for 26 derivatives that include *graph’ite* (a mineral composed of carbon), *graphic formula* (chemical formula), *grapheme* (letter of the alphabet) and *graphic arts* (painting, drawing and engraving). Significantly, the incorporation of all these within the overarching *graph* represented the nature of many words that straddle science and humanities, the hard and soft academic disciplines.

In the early twenty first century the Oxford Dictionary of English (Soanes and Stevenson, 2005) deem the same words and more as worthy of independent entries, listing twenty-one words, phrases and terminals between grapevine and grapnel: graph, …-graph, …grapheme, …-grapher, …graphic, …-graphic, …graphicacy, …graphical, …graphical user interface, …graphic arts, …graphic design, …graphic equalizer, …graphic novel, …graphics, …graphics card, …graphics tablet, …graphite, …graphology, …graph paper, …graph theory, …-graphy. Further adoptions of the root word also continue in specialist academic dictionaries. For example, *graphic analysis*, *graphic individuality*, *graphic language*, *graphic rating scale*, *graphodyne*, *graphometry*, and *graphorrhoea* appear in the *Dictionary of Psychology* (2001). These many derivations suggest there has been something resembling a graphic revolution over the twenty-year period spanning the turn of the millennium, but there remain inconsistencies and subtle differences that lead to confusion. For example, *graphic arts* noted above as being about painting, drawing and engraving differs from *The Thames and Hudson Dictionary of Art and Artists* (1994:157) definition of graphic arts that dismisses painting and excludes drawing, but includes silk sceen.

The emergence of graphic design in such lists is late recognition for a subject that since the late 1960s has been taught in higher education schools of art and design, though remained relatively

unknown until the early 1990s (Barnard, 2005:1–11). Then, a specialist dictionary definition with authoritative content about the European-American development of the subject claimed it to be the integrated use of typography, illustration, photography, and printing for persuasion, information or instruction (Livingstone and Livingstone, 1992:90). This comparatively limited, but useful, definition appears to have stayed in tact as a general understanding of graphic design, more generally defined by the Oxford Dictionary of English (2005) as a noun meaning 'the art or skill of combining text and pictures in advertisements, magazines, or books'. However, in graphic design practice, the close association of subtle references that may span the process of conceiving, planning, organization, mark making, and impact continue to make graphic design a difficult term to fully qualify. It is further complicated by an attention-seeking dimension that suggests it may also 'shock', as in the way Benjamin ([1936] 2008:20) uses the word 'graphically', or in the way McLuhan and Fiore (1967) propose, that art translates culture. Karel van der Waarde's failure to discover an exact definition across the plethora of books, surveys, awards, and critical reflections on the subject substantiates this (2009:7–10).

Popular dictionary sources also refer to the stand-alone term *graphic* by relating it to visual art – drawing, engraving, lettering – as well as 'clear and vividly explicit details'. Whereas graphics is said to be the 'products of graphic arts' – in 'commercial design or illustration, or diagrams'. Clearly this can mean the kind of lithographic, etching or lino-cut outcomes that will be found in art historical contexts, where it is synonymous with image and visual artifact (Elkins, 1999:255). With the addition of design to the graphic, a further interrogation of definitions leads the debate to broaden further with design's emphasis on 'planning', and further to what has been referred to by Bruce Archer as 'modelling' [sic] (1976:12). Taken separately *graphic* and *design* may utilize a range of similar and differing modeling practices. Dictionary definitions invariably define the singular term graphics as something relating to visual art, and in the case of often complex and subtle distinctions, that span scientific as well as artistic interest; questions, therefore, continually arise about the nature of graphic design. The arguments presented here may therefore be more suitably placed within a discipline of *graphic* knowledge that distinguishes, at a basic level, between science, art and design. But, contrary to the discussion thus far, this proposition suggests there is a distinction between art and design.

Since the 1960s, in the development of design research, it has been acknowledged that the distinction between art and design may well be a matter of personal preference. For example, before settling on the term Design 'with a capital D' to name a third area in education alongside science and humanities, Bruce Archer professed 'the Arts' as an ideal name (1976:11) but claimed it was too associated with humanities. In this sense, graphics may be regarded a branch of design, perhaps thought of in the same sense that *physics* is regarded a branch of science (familiar to both general and higher education), but it may no longer be necessary to state the relationship between graphics and design, if graphics seeks to gain recognition across science, design and art. Graphics can be said to be concerned with the nature and properties of what Elkins (1999:91) calls 'writing, pictures and notation'. In this abbreviated sense graphics may best represent the specialist subjects that have developed in art and design in the UK since 1969, from a subject base known as graphic design. Then, core art and design subjects were classified as fine art, graphic design, three dimensional design, textiles and fashion (Drew et al., 2008:45). Table 1 demonstrates the diversity of graphics across the art and design sector in the UK, and the frequent use of graphic, or graphics, as a common denominator in undergraduate programme titles. It appears to have grown into a significant majority in hybrid names that students choose from (Harland, 2007). Within art and design there is an obvious link to the 'typographic' and the 'photographic'. Beyond this, it also extends to subjects as diverse as language studies and geography, through their respective use of terms such as 'graphicacy' and 'graphetics' (Harland 2011a:160–206).

It has been the intention here to understand and explicate an intricate set of relationships and propose these reside under the moniker of graphics. However, objections to the use of a single term may come from those who acknowledge the term graphics as being 'vacuous' and 'self-referential' (Stiff, 2009, p. 10). Though, such opinions are often unsubstantiated, and too often reinforce a lack of unity when the opposite may be required, to understand the wider needs of society, and the new problems that do not fit comfortably within existing disciplinary structures. This need for a holistic approach is the basis of the argument made by Richard Buchanan (2001) when he suggests:

> We possess great knowledge, but the knowledge is fragmented into so great an array of specializations that we cannot find connections and integrations that serve human

> beings either in their desire to know and understand the world or in their ability to act knowledgeably and responsibly in practical life. While many problems remain to be solved in the fields that currently characterize the old learning—and we must continue to seek better understanding through research in these areas—there are also new problems that are not well addressed by the old structure of learning and the old models of research.' (Buchanan, 2001:6)

Despite these known problems of classification that hinder the 'domain of images' (Elkins, 1999:82), the argument for a singular use of the term graphics to link across general, further and higher education is timely. It may help bridge discussions about 'graphic skills' (Stiff, 2009:11) and the kind of 'contemporary scientific and mathematical graphics' noted by Elkins (ibid:222). Clearly, graphics does not exclusively belong to art and design: there is a graphic science, graphic art and graphic design that may benefit from closer association in academic research to generate new learning and problem solving opportunities. If the argument for adopting the term graphics to represent a wide-ranging academic discipline is agreeable, there must be a need to better understand how it is taught and learned across different academic disciplines. This is especially important given the possible size and scope of application.

There is a strong case for interdisciplinary gains in graphics, especially for those who teach the subject as part of a discipline beyond art and design and for graphic design students who wish to extend their interests to academic disciplines beyond art and design. Graphic design is one of the most popular subjects in the art and design higher education in the UK. This in part is because in professional practice, graphic designers have many opportunities that can benefit those who come into the workplace from a non-traditional art and design route. There is a well-established graphic design professional practice. The subject benefits from increasing significance in general education. Furthermore, established academic disciplines such as geography use similar processes of image creation and increasingly we see emerging recognition in science subjects as diverse as information science, cognitive science and mechanical engineering. The evidence for this is clear.

A search on the UCAS website (the service that organizes applications to UK higher education courses), reveals more single subject graphic design programmes in the UK than any of the other core subjects in art and design. This seemingly feeds a healthy demand in professional practice, as confirmed by a Labour Force Survey looking at UK Employment, by Design Occupation, which suggests that graphic design accounts for 93,000 design associate professionals out of 136,000 (Prior et al., 2007:3). Graphics is also central to the new 'Diploma in Creative and Media' (2008:20) for 14-19yr olds in the UK, as a core subject in 'Crafts, Creative Arts and Design' (one of four categories within 'Arts, Media and Publishing') (QAA, 2009). In Geography 'graphicacy' is a long established key method (Clifford and Valentine, 2003:344–368) and thought by some to be the 'most distinctively geographical form of communication' (Boardman, 1983, page not numbered). Graphic design is also named as a core module for research-intensive University undergraduate programmes in information science, (such as 'Publishing with English' and 'Publishing with e-Business' at Loughborough University). Furthermore, in 2008, Cambridge University Department of Engineering advertised for a 'PhD Studentship in Graphic Elicitation' (www.jobs.ac.uk/jobs/FH557/).

With this in mind, the key question emerges: what is the scope of activities associated with practice that might inform the extension, and understanding, of what has be referred to as 'graphic method' (Bertin, [1967] 2011) or 'graphical method' (Biggs and Buchler 2008:5–18), and related to the rise of visual method (Harland, 2011b)? If art and design is a useful starting point for answering this question, van der Waarde (2009) identifies a diverse and sophisticated range of activities undertaken by graphic design practitioners (ibid:60–61) that may help direct an interdisciplinary discussion about 'method'. See Table 2. These activities number twenty-seven in all, and include the familiar subjects of typography, illustration, photography, advertising, as well as animation, infographics, website design, programming, copywriting, visual research, film production and more. However, this does indicate the potential scope for research in a graphics discipline alongside what might be influenced by a scientific, artistic and 'designerly ways of knowing' (Cross, 2005).

Table 2. The activities of graphic designers. Source: van der Waarde, 2009a:60–61

Illustration	Infographics	Marketing
Photography	Font design	Communication strategy
Typography	Desktop publishing	Usability
Copywriting	Film production	End user research
Image processing	Website design	Visual research
Animation	Graphic art	Visual strategy
Audio-video	Spatial design	Concept development
Programming	Advertising	House style management
Author	House style design	Project organization

Conclusion

A fragmented use of terminology, in a relatively new university discipline, may hamper any attempt to establish a broad unified agenda for research, especially when the mode of knowledge production includes “the relationship between practice and research, a focus on ‘making’ as well as thinking, and collaborative practices that recognize the need for negotiation, and distinguish problem setting from problem solving” (Moore, 2009:20). This is a challenge for graphic design and the many programme titles that have evolved over the previous two decades and are historically closely related. To the wider university community, with whom much potential exists for research collaboration, this may prohibit a clear sense of managing expectations. Graphics is already located in many of these disciplines, either as a practice, phenomenon or method (for example, Infographics in Information Science, or Cartography and Graphicacy in Geography). Questions arise, such as: What constitutes the graphic’? How do students learn graphics in these disciplines compared to a student in art and design? What differentiates the graphic knowledge of a geographer compared to a designer? These are some central question that will benefit from pedagogic research. Potential benefits might include: enhanced student learning experiences; research collaboration for staff; the possibility for better use of human and physical resources; and an improvement in the objects, products, services and things used in everyday life as well as professional environments.

Some who hold on to traditional views in graphic design education may interpret these reflective and projective arguments with caution. But, as the design research community respectively pursues ‘interaction’ and ‘environmental’ design as third- and fourth-order design, that will ‘transform the design professions and design education’ (Buchanan 2001:6), graphic design as a ‘first-order’ principle must also respond. Some believe ‘[i]t is difficult to see how design thinking can go back to its earlier centers of attention without a sustained period of exploration of interactions and environments’ (Buchanan, 2001:6). This suggestion may be more related to theory and less about the material practices traditionally associated with graphic design. It also presupposes that we know all there is to know about first (graphic) and second order (industrial) design thinking. Consequently, this paper calls for the development of research agenda in graphics that is transdisciplinary, to ensure that if there is a return to earlier ideals, such a return is welcomed, aligned, familiar with contemporary debates across the wider domain of knowledge through its contribution to them, and perhaps, more appropriately, known through the singular use of the term graphics.

How might this be achieved? One part of the answer is to suggest that there is much need for an organization in the UK that puts graphics education first, to replace the lost efforts of previous generations. For example, an assembly of graphics educators could establish an association of graphics educators (perhaps called ‘NewAGE’). This may go towards exploring the potential for stimulating academic debate, exchanging ideas about learning, teaching and scholarly activity, liaising with public and professional bodies, and lobbying for the interest of the sector and sharing good practice. This should not be confined to art and design, though may be initiated from within the discipline, as has been the case by other subjects such as the Association of Fashion and Textiles courses. It must be a significant concern for all involved in graphics education that no such body yet exists for graphics, regardless of function.

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COMMUNICATION DESIGN AND PUBLIC SPACES

TRANSFORMING PUBLIC SPACES – WHAT CAN WE LEARN FROM THE ONTOLOGICAL POSITIONING OF THE 'SITE OF THE SOCIAL'?

CLAIRE MCANDREW

ABSTRACT

How is space itself transformed by communication design? Informed by Schatzki's (2002) ontology The Site of the Social: A Philosophical Account of the Constitution of Social Life and Change, the processes through which communication design might impact and transform public spaces are considered. Propositional in nature, this paper seeks to elicit a dialogue around the nature of such processes, harnessing insight into the transformative power of communication design. Reviewing examples drawn from Schatzki's account, it is suggested that defining public spaces as 'social sites' and focusing upon the interweaving of orders and practices that exist therein, to be key to this discourse. Two empirical case studies are used to illustrate these propositions in action: the design of interactive counter terror communications, and designing with the intent of influencing behaviour in virtual spaces. Taken together, this paper considers the site of the social to be an important point of leverage for understanding the processes through which communication design can enact public spaces. This paper concludes by drawing a number of propositions relevant to future work.

FULL PAPER

Introduction

In Design Research Now (2007), Beat Schneider defined design practice as the creation of meaningful order through an ideological commitment to transformation:

> It is a conscious act that aims to create meaningful order, and is thus an essential part of our culture. Ever since it appeared in the early 19th century, design has been ideologically committed to transforming the world for the benefit of human beings ... (Schneider, 2007:208-209)

What do order, design practice and transformation mean for how space and its inhabitants are altered? Setting forward a series of propositions, this paper finds relevance in Schatzki's (2002) ontological account The Site of the Social: A Philosophical Account of the Constitution of Social Life and Change. Offering insight into the intricate braiding of orders and practices through which social life unfolds, it provides a scaffold for understanding the transformative role of communication design in public spaces. Questions shaping this inquiry include:

- What can a social ontology lend to our understanding of transformation?
- How does viewing the site as a social entity impact the practice of communication design?
- What are the implications of 'orders' and 'practices' for communication design practice?

The paper opens by giving consideration to communication design as

a socially-situated activity, and in so doing emphasises the relevance of Schatzki's ontology. Schatzki's (2002) social site is then described, paying particular attention to its organisation as a set of interwoven orders and practices. Implications for how communication design might transform spaces through a restructuring of orders and practices are illustrated using two empirical case studies: the design of interactive counter terror communications; and designing with the intent of influencing behaviour in virtual spaces. The application of a social-theoretical vocabulary contributes to growing interest in the combined value of design and social science for understanding the "conception, production and use of objects, environments and communications" (Frascara, 2002:XIV). This paper closes with a review of how this approach might provide a platform forfuture work.

Communication design as socially-situated activity

There is an alternative perspective of communication design that is taking hold. A stance described as "radicalized" (Haslem, 2009:3), it is one in which the practice of communication design is viewed as a social activity.

> It becomes obvious that communication design is a social activity as the focus moves beyond the artefact; beyond the 'graphic', into the operational qualities of that 'graphic' and its location, facility and agency within the social setting it inhabits. (Haslem, 2009:22)

This is arguably a stance that is more progressive than contemporary definitions allow - see for example Frascara's (2004) definition of communication design as the production of visual communications for purposeful impact.[1]

With such re-positioning comes opportunity. It has been suggested for example, that approaching design from an ontological perspective allows one to view communication design in a 'different light' (Halsem, 2008). Adopting this line of thought, others have suggested value to lie in an understanding of communication design as "a fundamental human activity that strives to improve the condition of human life and our society through the creation of artifacts and activities" (Author unknown, 2011:1). What might philosophical study lend toward understanding communication design, the nature of reality: their categories, objects and ties?

The site of the social

Schatzki (2002) claims "the best way to approach these topics [the nature of social existence, what consists in it, and the character of its transformation] is to tie social life to something called "the site of the social"" (XI). Described as "the stuff of social practice" (Shove, Watson, Hand & Ingram, 2007:12), it is claimed the social site forms the heart of social existence. Occurring through an intricate braiding of orders and practices, "the character and transformation of social life are both intrinsically and decisively rooted in the site where it takes place" (Schatzki, 2002:XI).

1. ...the action of conceiving, programming, projecting, and realizing visual communications that are usually produced through industrial means and are aimed at broadcasting specific messages to specific sectors of the public. This is done with a view toward having an impact on the public's knowledge, attitudes, or behavior in an intended direction. (Frascara, 2004:2)

This is not an entirely new discourse to the field of design. Social practice has for instance, been used in discussions within product design, using the sociology of objects to illuminate connections between design and consumption (see Shove et al., 2007). Noting how moments of technological innovation provide insight into the pivotal role objects play in establishing routines and practices, Shove et al. consider how objects and practices co-evolve and how this understanding can transgress objects as simple carriers of semiotic meaning. What might the site of the social lend toward understanding the transformative effect of communication design in public spaces?

Considering this question, it is first necessary to disentangle terms such as 'orders' and 'practices' and their role in the characterisation and transformation of social life. These are complex terms and whilst this paper does not have the length to explore these concepts in any depth, it offers the following definitions:

> 'Orders' are defined as arrangements. Arrangements of the entities that enter social life (for example, people, artefacts, organisms and 'things') are structured through their relations, positions and meanings. The positioning of one entity is inextricably linked to its relation with others. Position is used to reflect where an entity fits into a nexus. Every entity has meaning, which can evolve over time. Anchored in regimes of activity called practices, these meanings are a reflection of relations, and relations reflect its meaning.

> 'Practices' are defined as organised nexuses of activity. These collections of activities (for example, cooking, rearing, farming...) are linked through understandings, rules and 'teleoaffectivities'. Teleoaffectivities reflect the set of normativised and hierarchically ordered ends, projects and tasks aligned with normativised emotions and moods. They are not a set of properties of actors, but practices. Practices divide into two components: activity (for example, building fences, harvesting grain) and organisation (for example, negotiation, making an offer). Practices crucially form the context within which social orders are established.

Creating the basic structure of the social site, this meshing of orders and practices provide a lens through which to view the constitution and transformation of social life. Application of this school of thought to the 1850s Shaker herb industry (Schatzki, 2002), day trading on the Nasdaq market (Schatzki, 2002), the study of organisations (Schatzki, 2005) and education (Smith, Edwards-Groves & Brennan Kemmis, 2010; Schatzki, 2005), provide compelling examples of how we are constituted by social practices. In this spirit, two examples drawn from Schatzki's (2002) The Site of the Social illustrate the inextricable binding of orders and practices and provide a foundation for the central thesis of this paper: that orders and practices provide a critical lens for understanding how communication design can transform public spaces.

Shaker herb industry, New Lebanon, New York

The 1850s Shaker herb industry in New Lebanon, New York, provides

insight into the character of social arrangements, the nature of practices and the contextualisation of arrangements in practices. Established in 1787, the Shaker community comprised seventeen villages, each village composed of a network of communes known as 'families' (typically two to eight), and within each family resided thirty to ninety individuals, which existed as an interdependent socioeconomic unit under the auspices of religious authority.

Shaker life was shaped by three teleoaffective regimes: religious belief in salvation through Shaker existence; autocratic hierarchies; and security and companionship in communal life. A belief in the practice of celibacy was enforced through extensive divisions in the Shaker community including physical segregation (separate entrances / exits, work spaces, eating and sleeping quarters) and the intense regulation of interactions (conversation between sexes was prohibited and separate lines of work enforced). Forming the context within which social order is established, it is hard to talk of practices without making reference to the arrangements of entities that enter social life and the relations, positions and meanings imbued in the division of the sexes and autocratic hierarchy.

The practice of herb production was one component of this broader net of Shaker existence. Each Shaker family owned an enterprise that served their own needs as well as those of the outside world. The preparation of medicinal herbs and extracts is one such industry, which coincidently became the largest herb operation of its time. The division of labour was organised according to gender: men working outdoors and women completing less-manually-intensive tasks within the herb house itself such as the preparation of herbs, cleaning and pressing them as they arrived. The herb house (a former granary) housed a business office, packing room, papering room and storeroom. Hydraulic machinery used to compress herbs into blocks was located in the basement, powered by horses treading in circles. The attic provided a space for the women to spread the herbs out to dry, before storing them in large bins and lowering them for chopping and pressing. A hoist on the side of the herb house allowed herbs from the kiln (located in one of many outhouses) to be raised to the attic.

There also existed an extract house, which focused on the production of ointments, oils and powders. A greater variety of machinery existed here, where operations were organised around laboratory processes of boiling, pressing and extracting herbs and roots. For instance the extract house contained kettles, cylinder presses (for use in the pressurised extraction process of juices from herbs and roots), copper pans (for reducing the extracted juices), and a large boiler (for producing steam). The production of extracts and ointments required many of the same operations as the preparation of herb blocks. These operations were located on the first and second floors of the extract house and included for instance, crushing and powdering mills powered by steam.
What this example demonstrates is that it is near impossible, not to talk about the practice of herb production, without making reference to the particular arrangements of people, artefacts, organisms and 'things' which make the practice possible. A nexus within a nexus, one also cannot describe the practice of herb production without referencing the broader

context of Shaker practices such as the teleoaffective regimes within which it resides.

Day trading, Nasdaq market

A more complex arrangement of practices and orders can be found in day trading. At its most basic level, day trading firms exist as a nexus of practices and orders, and the industry as a confederation of these nets. Unique as a social site, the day trading industry exists as a set of "coherent, conflicting, and overlapping bundles and nets connected via an elaborate artifactual order" (Schatzki, 2002:174). This diverse set of relations between the practice-order nets that are day trading is considered below:

Coherence

The collection of practice-orders comprising day trading overlap with the nexus of practice-orders that are day trading firms. Coherence emerges from the conduct of activities within the same orders. For instance, there may exist chains of actions that contain input from both entities such as regulatory frameworks of practice, technical support, and training. These 'shared chains of practice' are mediated by elaborate technological arrangements. These include for instance, automatic deduction of commissions from trading accounts, new informational feeds or alerts to trading activity cross-firm. Through the lens of the social site, day trading practices are congruent with those of day trading firms. See McAndrew (2008) and McAndrew & Gore (in press) for empirical examples of how coherence can lead to the creation of new deals helpful to both sides of the transaction.

Conflict

'Market makers' is the term given to securities firms - banks and financial institutions that produce profit day trading on behalf of clients and for their own accounts. They 'make' the market through the large volume of institutional orders they place. The practice-orders of day trading and market making are fundamentally incongruent:

- The practice of market making involves the execution of clients' orders; these type of transactions do not occur in day trading
- Market makers have exclusive knowledge of their client's orders and large institutional transactions; whilst day traders operate as reactors to the market
- Market making is focused upon long-term profitability; day trading upon short-term gains

Due to the execution of large institutional orders, market makers are the primary actors in the market. Day traders behave as reactors, seeking to take profit by pre-empting market makers' actions. This conflict results in a complex interweaving of strategies used by market makers to disguise their intentions and day traders to identify and counteract them amidst an elaborate array of technological arrangements. Such conflict can be exploited by day traders through price anomalies in markets known as arbitrage opportunities (for detailed description see: McAndrew, 2008;

McAndrew & Gore, in press).

Overlap
In much the same way as the practice orders of day trading cohere with the practice-orders that are day trading firms; market making coheres with the nets of bundles that are security firms. Operating within a common framework of practices and arrangements, the practice of market making intersects with the actions chains of the security firm. This set of cohering, conflicting and overlapping bundles and nets connected via an elaborate order is undoubtedly more complex than the Shaker industry.

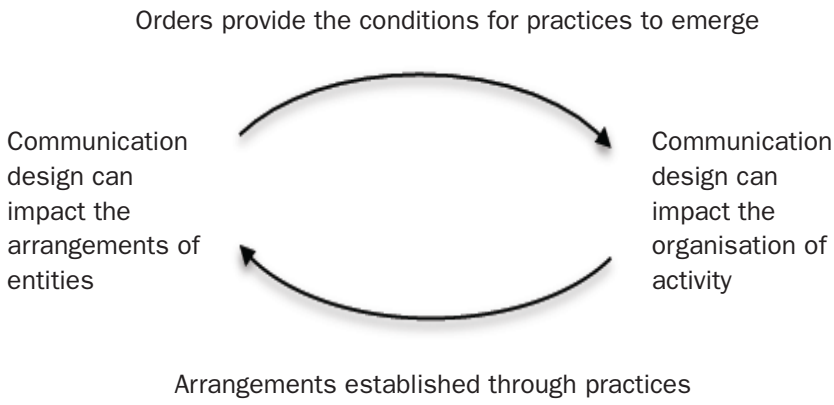
Social change
An omnipresent theme throughout these accounts of the Shaker herb industry and day trading is social change, with descriptions of the social site as "one of ceaseless movement and incessant rearrangement and reorganization" (Schatzki, 2002:189-190). The ultimate demise of the Shaker commune, alongside technological developments in the practice of trading undoubtedly changed the nature of the social site. Coining the term "endless becoming" (2002:237), Schatzki reflects on the perpetual reordering of arrangements through actions. It is this reference to "movement and change" (Schatzki, 2002:189) that makes the site of the social relevant to communication design and the transformation of public spaces.

Communication design and the transformation of public spaces
What might Schatzki's philosophical account of the constitution of social life and change bring to the practice of communication design and its role in transforming public spaces? Returning to the basic function of design, Schneider (2007) notes:

> ...[design] simplifies and renders comprehensible complex and bewildering masses of data, information structures processes and objects. Design simplifies the world, making it easier to understand... It structures information in a way that promotes communication and activity... (Schneider, 2007:209)

What emerges is a striking resemblance to Schatzki's practice-order nexus. This paper suggests that the use of information to structure processes and objects is analogous to 'arrangements', whilst the concurrent structuring of information to promote communication and activity echoes the notion of 'practices'. An understanding of how movement and change can be produced through communication design with the ultimate objective of transforming space might be captured in the model below (see Figure 1).

Figure 1. Transforming social sites through communication design



As Figure 1 illustrates, there are two propositions that help deconstruct the role of communication design in transforming public spaces:

1. Communication design can impact the arrangements of entities
One mechanism through which communication design might facilitate an emerging arrangement of entities is through the institution of new meanings and identities, specifically between arrangements of people, artefacts, organisms and 'things'. As stated earlier, the positioning of each entity is inextricably linked to its relation with others. The act of impacting one entity using communication design can be enough to shift the underlying arrangement of orders and produce change.

2. Communication design can impact the organisation of activity
The second proposition of this paper is that communication design might also impact collections of activities by facilitating change in existing understandings, rules and teleoaffectivities. As organised nexuses of activity, communication design could play a pivotal role in the re-organisation of activity, thereby creating new types of social order.

Two case studies that apply this thinking illustrate the possibilities afforded in using communication design to transform social sites and its inhabitants. Safer Spaces: Communication design for counter terror examines the potential of interactive communications to reduce fear and re-engage awareness in transport environments, whilst Designing With Intent: Influencing behaviour in transitional spaces explores the capacity of communication design to influence behaviour in virtual spaces such as Second Life. These are discussed in turn:

Case study 1 | Safer Spaces: Communication design for counter terror
Safer Spaces: Communication design for counter terror (2008/09) was a Research Council's UK funded project that took as its focus transport systems in urban environments, scoping the potential of interactive counter terror communication to reduce fear and re-engage awareness in public spaces[2]. The call to understand "the routine practices by which security is manufactured on an everyday basis" (Büger & Gadinger, 2007:2) provided a scaffold for the Safer Spaces approach.

It is the design of communications and their role in changing the arrangements of entities and the organisation of activity within transport

2 Safer Spaces: Communication design for counter terror was a multi-disciplinary project across seven UK institutions led by Professor Teal Triggs (University of the Arts London, UK) and Professor Mike Press (University of Dundee, UK), which sought to explore the potential of creative applications to address global security challenges.

environments, which is relevant to understanding the potential of communication design to transform social sites. Historically, this is not a new proposition, interviewed during the course of the research, one participant commented on the transformative effect of visual communications in the 1970s:

> I was around for the IRA attacks in 1976 and missed 3 bombs by coincidences of fate. I appreciated signs saying to keep bags with you, as it gave me 'permission' to ask - in increasingly larger circles – 'does this bag belong to you?'

The graphic facilitated the emergence of a new social order in civic spaces, one that invited public participation in their monitoring and protection. It was the intervening graphic that assisted in the establishment of a new set of arrangements; not only between members of the public and the graphic artefact, but one that restructured the relations between commuters, objects and the authorities. The act of 'asking' created a new type of activity and opened the possibility for alternative practices of policing transport systems. It is this future Safer Spaces took as its starting point.

Safer Spaces generated these insights using a two-phase research design. Phase 1 collected data using focus groups (n=35) and cultural probes (n = 8) with a cross-section of London's commuting public (see Gaver, Dunne & Pacenti (1999) for a comprehensive overview of the cultural probe method). Illustrating the 'journey' visually (in the focus groups projections were used to prompt discussion which was digitally recorded, and in the cultural probes a comic book format was adopted providing a space for participants to record their responses), provided a lens into the construction of practices around information, communications and security technologies and their possibilities for reconstruction. These insights were used to inform the design of a prototype, evaluated through a second phase of focus groups (n=81) designed to assess the degree creative communication design makes possible new ways of engaging communities in dialogues about counter terror. The quotations included in this case study are drawn from these accounts.

Safer Spaces commissioned Jason Bruges Studio (London, UK) to produce a design prototype that would positively intervene in the lives of the commuting public. Reducing a sense of fear and re-engaging awareness in communities in public spaces was challenging, not least because of the prevailing social etiquette that is to be disengaged and docile, but also the fading effectiveness of graphic communications to connect with the public. Described as "a strange mix of polite exhortations and stern warnings, which seem a bit schizophrenic", participants frequently noted their indifference to visual communications: "I'm inured to them now because I have read them so many times." Producing innovative installations, interventions and groundbreaking works by creating interactive spaces and surfaces that sit between the worlds of architecture, site-specific installation art and interaction design, the approach of Jason Bruges Studio offered potential to mediate the social site. Considering communication design as a vehicle for the

propagation of new modes of information and engagement in public spaces, the design brief opened a variety of possibilities for interaction, such as the subversion of existing messaging systems[3]. As a hybrid of CCTV and digital advertising billboards, the design prototype sought to build upon the historical success of London Underground's safety and security communications. Digitally rendered images of the prototype insitu (Figure 2) show how behind a digital billboard sits a camera, filming the person facing it the advertising space is transformed into a mirror. Each digital billboard houses two live feeds streaming visual activity from other billboards in proximal but, geographically distinct locations. Connecting seemingly disconnected spaces, the prototype invites playful engagement whilst at the same time seeking to (i) re-engage awareness in public spaces through remote peer-to-peer monitoring, and (ii) instill the commuting public with the visual tools to anticipate what 'lies ahead' in their journeys.

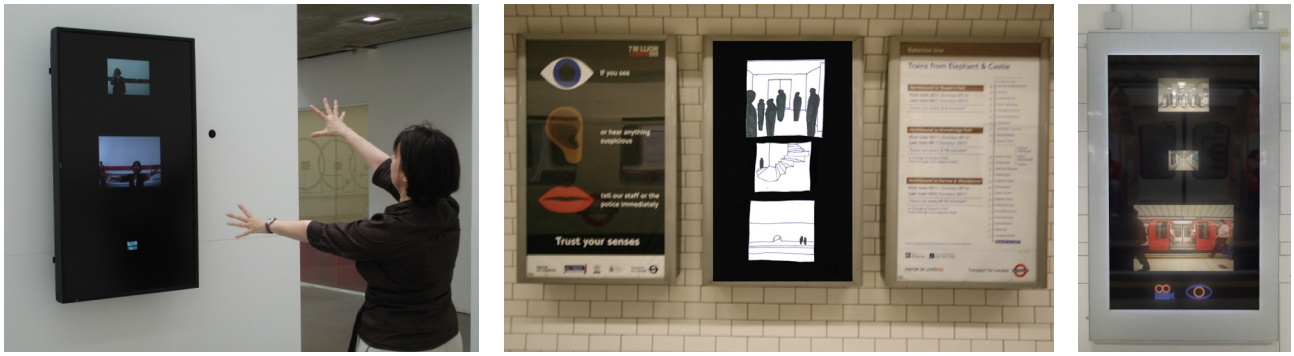


Figure 2. Left to right: Prototyping Interactive Security in Transport Environments – Well Gallery, London College of Communication, University of the Arts London (Photograph courtesy of Professor Teal Triggs); Connecting spaces – envisioning the design prototype in transport environments (Digitally rendered image courtesy of Jason Bruges Studio); Subverting advertising billboards – visualisation using site-specific video (Digitally rendered image courtesy of Jason Bruges Studio)

The playful, interactive nature of the prototype invited a new form of visual engagement that held potential to produce a different social order within public spaces. The arrangement of entities took the form of people and digital billboard (artefact). The prototype held potential to change the nature of engagement the commuting public has with advertising billboards from passive recipient of information, to one-to-one or one-to-many social interactions and communications. As one participant illustrated, the invitation to interact imbues new meanings and identities for the public in their contribution toward the protection of civic spaces:

> It's kind of a force of community policing at the tube. The point that everybody engages with it a lot because it's interactive means it's even more powerful.

Not only for those that interact, the effect of the visual form might also reach those that are being monitored themselves. The shift in relations between members of the public and those that pose a risk in public spaces might not only overcome the nonchalant disengaged commute but, provide a visual metaphor of a united stand against terrorism putting a sense of control back into the hands of the public. Can the act

3. Although beyond the remit of this paper, it is important to note that the design brief was informed by psychological and design-led explorations of the connection between risk perceptions, behavioural responses, information requirements and communications in transport systems. Findings pointed toward public demand for reassurance that civic spaces are monitored by CCTV (note that since 2008, London Underground have undertaken an extensive programme of control room refurbishment, installing large vision panels to make staff more visible), the ability to "see what the cameras are seeing"; the seeming disconnect between spaces (e.g. ticket barriers, escalators, platform) with one participant declaring "It's all about anticipation, trepidation"; and the need to embed the design intervention within the existing architectural fabric, entrenching it into the rhythm of the space, so it "forms a part of the machinery forming your journey".

of impacting the arrangement of entities using communication design be enough to shift regimes of activity and produce change?

This case study illustrates the second proposition of this paper - that communication design can impact the organisation of activity. As noted earlier, social practices are comprised of a set of doings and sayings organised by understandings, rules and teleoaffective structures. The design prototype almost certainly has the potential to change the rules of engagement in public space, providing a platform for members of the public to take ownership in the protection of civic environments. As one respondent remarks, "if they can consciously or subconsciously encourage a mentality of noticing and reporting then they are doing a useful job." Using communication design to engage the commuting public in the activity of watching can also bring with it a desire for action:

> Maybe if you do see something going on, on the screens, there could be like a panic button or something you press, so it's immediate.

It is important to note that since this research commenced in 2008, London Underground have installed an extensive help system on the London Underground to directly facilitate response. The design of interactive counter terror communications might take note of this, complementing the visual connection of spaces with a simple button that can be pressed to contact security staff in the event of concern. In this way, it also permits a change in teleoaffective structures - described as a linking of ends, means and moods:

> I'm not gonna get on my train if I see that someone's collapsed out on the other platform ...You've gotta have some part in life. You've gotta have some feeling.

Comments such as "It's quite reassuring. You wouldn't feel quite so isolated" reveal a sense of comfort, whilst others noted the softening effect through the interplay of art and security:

> You know, it's a good thing if you are looking at it and it is looking arty [and] the intention is for security. So, it's not scary. In that sense, it's not imposing and you're thinking of the security. It's something you enjoy.

The subversion of existing billboards also permits an explicit change in the rules of responsibility - a shift of power from the authorities to one that is shared with members of the public. Whilst some members of the public were open to this, appreciating "It's about us being aware and making us aware ... Because it's a heavy load just to put on a security team", others were more resistant to the development of new social practices. Typical of this response was the criticism of the authorities for "Relying on the public to do their job. To do the protecting." Thus, whilst it is possible to impact orders (i.e. shift the arrangement of entities that is, people and artefact), anchoring them in regimes of activities with a view to constituting new practices can be met with resistance and the design of communications for such change ought to be viewed as a graduated process.

Case study 2 | Designing With Intent: Influencing behaviour in transitional spaces

Designing With Intent: Influencing behaviour in transitional spaces (2010/11) was a project funded by the Defence Science and Technology Laboratory (Dstl), UK via the Centre for Defence Enterprise (CDE) initiative[4]. The call invited critical explorations of how psychological theory translates to the digital realm. Taking cyberspace as its starting point, it focused on influential communication activities aimed at shaping the behavior of individuals and/or groups.

Informed by practice theory, Everts, Lahr-Kurten & Watson's (2011) suggestion that psychological statesare both embodied and reproduced in social contexts provided a point of leverage for this work:

> Conceptualising anxiety as a social practice opposes accounts that treat anxiety as an issue relating to individual bodies alone, be it as some form of individual phobia or personal pathology. (328)

Through the perspective of social practice, anxieties are "embodied and social, practical and practised" as well as "routinized, collective and conventional in character" (Jackson & Everts, 2010:2801). In this way, social practices can be involved in the management of anxiety-driven events such as terrorism or health pandemics, by containing and restraining their spread (Everts et al., 2011). It is this cultivating of psychological anxiety into more positive psychological states through social practice that forms the basis of Designing With Intent.

Designing With Intent sought to understand how the design of activities could be used to reconstruct social practices and influence psychological phenomena in virtual spaces such as Second Life. This work was grounded in three psychological concepts, robust enough to exist in physical and virtual worlds: attachment (a tie that forms between individuals that binds them together in space, and endures over time – four styles are measured i.e. secure, fearful-avoidant, anxious-preoccupied, and dismissing-avoidant, using Griffin & Bartholomew's (1996) Relationship Scales Questionnaire); self-esteem (an appraisal of one's self-worth – measured using Rosenberg's (1989) Self-Esteem Questionnaire); and worldview (the overall perspective from which one sees and interprets the world – measured using two short essays adapted from Wisman & Koole (2003) that invite quantitative responses).

The research required a design commission that could enhance one's sense of attachment and selfesteem in Second Life with a view to reducing worldview defensiveness. This hypothesis was derived from work in the field of terror management theory, which suggests the three elements to exist in a state of equilibrium (to achieve a balanced state, increases in one's sense of attachment and/or self-esteem would result in a decrease in worldview defensiveness) (for more detail see: Hart, Shaver & Goldberg, 2005).

As an exploratory piece of research, this work employed a sample of postgraduate design students (n=9) enrolled at a UK Higher Education institution. Participants were invited to take part in an introductory workshop to Second Life that concluded in their participation - in

4. Designing With Intent: Influencing behaviour in transitional spaces (2010/11) was a collaborative research project between the author, Professor Teal Triggs (University of the Arts London, UK) and Dr Brooke Rogers (King's College London, UK).

this way, the research formed a part of their curricula. The research adopted an experimental repeated measures design to trace changes in attachment, self-esteem and worldview following interaction with the design commission. Nonparticipation as a result of the 1 week test-retest interval, resulted in a total sample size of n=6.

Dr Kevin Walker, Walker Research & Experiential Design (London, UK) was commissioned to produce the design intervention. Walker RED focuses on the design and interpretation of meaningful, creative experiences, rooted in learning and technology research. The commission explored how the design of activities (which also entailed the construction of artefacts) could mediate and influence 'insecure' psychological states. Upon arriving in Second Life, participants were invited into a virtual gallery space, where they were instructed to build a total of 120 digital cubes and arrange these within the digital space (Figure 3). This activity was developed in response to a growing body of psychological research exploring the power of the abstract form:

> ...figures that resemble large and cohesive groups increase feelings of safety, even when these figures are 'meaningless' and abstract. (Renkema, Stapel & Van Yperen, 2009:929)

As an activity that was new to the participants, the creation of digital artefacts was also envisaged to require a degree of dependency and collaboration (Bohemia, Lauche & Harman, 2008). Anchoring the structured activity in the construct of dependency (a facet of attachment), it was in this way that the design commission was both informed by and supported by the research. Self-report measures of attachment, self-esteem and worldview were captured before and after participation in Second Life, using a series of questionnaires conducted in the physical world. Given the limited sample population upon which this investigation was based, the results were not amenable to tests of statistical significance.Descriptive statistics and behavioural observations are therefore used to describe the main features of the data.

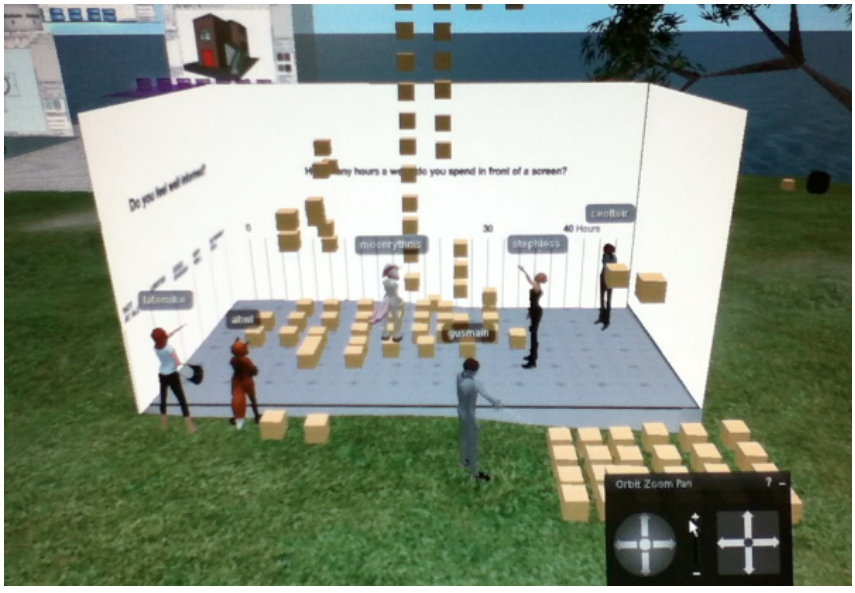


Figure 3. Designing activities to mediate experience (Image courtesy of Walker RED)

The findings pointed toward distinct effects according to the type of attachment style, with less secure styles benefitting most from the design activity. Prior to engagement with the design intervention, the following styles of attachment were categorised using the Relationship Scales Questionnaire: secure (n=3); anxious-preoccupied (n=1); and dismissing-avoidant (n=2). Following interaction with the design commission, one participant required re-classification from dismissing-avoidant to secure. Distinct patterns between attachment style and worldview were found that appeared to endure over time:

– Secure styles: almost equal levels of agreement for value-supporting and value-threatening beliefs, with a low degree of differentiation producing little worldview defence
– Anxious-preoccupied styles: highest levels of agreement, with a mid-range degree of differentiation for value-supporting and value-threatening worldviews
– Dismissing-avoidant styles: lowest levels of agreement, for value-supporting and valuethreatening beliefs, with a high degree of differentiation producing high worldview defence

In addition to these unique interrelations, following interaction with the design commission each attachment style displayed a decrease in worldview defensiveness. Secure attachment styles displayed the smallest decrease in worldview defence, dismissing-avoidant styles a mediocre decrease and anxious-preoccupied styles a substantial decrease in worldview defence. Note that there appeared to be no trends in the data relating to self-esteem. This is not surprising as the design intervention was focused on increasing a sense of dependency and collaboration, facets more closely associated with attachment.

These data trends support the suggestion that psychological states are both embodied and reproduced in social contexts (Everts et al., 2011), and that by cultivating positive facets of attachment such as collaboration and dependency they can be altered. Through communication design, activities can be used to reconstruct social practices. This is not just true for 'anxiety', but as Designing With Intent illustrates, other 'insecure' psychological states such as 'dismissing-avoidant'.

Using designed activities to mediate experience, illustrates how the arrangement of entities (i.e. participants and digital cubes) can be reproduced through the organisation of human activity itself. A characteristic of the dismissing-avoidant style of attachment is that individuals feel unable or unwilling to share their thoughts and feelings and avoid face-to-face interactions (perhaps due to interpersonal distrust), despite possessing relatively high self-esteem. As can be seen in Figure 3 two participants characterised as 'dismissing-avoidant' constructed their cubes outside the bounds of the gallery space. Participant 3 positioned the cubes on the ground in an orderly fashion in the right-hand corner to the front of the gallery. Participant 1 constructed the cubes inside the gallery space, suspended in the air, building upon one another in a regimental fashion, until they were raised above the exterior walls of the space. The normativity associated with such teleoaffective activities provided the opportunity for others to instruct and sanction,

inviting a reorganisation of the cubes within the gallery. Necessitating dependency and collaboration, the rearrangement of entities allowed new meanings and identities to emerge, providing the context for alternative cognitive states to arise.

It is in this way that the organisation of activity can reshape social practices. Ethnographic observation showed participant 1 to be focused on the task at hand, contributing very little to group dialogue, a contribution that increased toward the end of the activity as his/her cubes were relocated into the gallery space. Participant 3, behaved similarly, however, the behaviour of this avatar was also marked by periodic moments of leaving the gallery space, disappearing from view altogether. Using communication design to engage in dialogue with these participants and draw them into the activity holds potential to create a new set of understandings, rules and teleoaffective structures.

Taken together, these case studies demonstrate the potential of communication design to "move beyond the graphic" (Haslem, 2009:22) to become transformative tools in social sites. Reviewed in this way, these works provide a first step in understanding the interplay of orders and practices in everyday life and the role communication design can play in transforming public spaces.

Conclusion

Informed by Schatzki's (2002) ontology The Site of the Social: A Philosophical Account of the Constitution of Social Life and Change, this paper has considered how space itself can be transformed by communication design. It is Schatzki's (2002) reference to "movement and change" that makes the site of the social relevant to communication design and the transformation of public spaces. What is constructive about such an account is that the rearrangement of orders and practices foregrounds individual action alongside collective presence and change. A number of propositions have been developed which, taken together, consider the site of the social to be an important point of leverage for enacting social spaces using communication design.

As a propositional piece, this work seeks to first and foremost encourage dialogue. Focusing on the two propositions generated in this paper, it is hoped that future work considers their relevance to the transformation of public spaces, uncovering synergies and discrepancies in research and design practice. One limitation of this work relates to the confidential nature of the research case studies reviewed (i.e. Safer Spaces, Designing With Intent and McAndrew (2008) and McAndrew & Gore's (in press) empirical account of day traders). Grounding this work in further detailed case studies is crucial for developing an understanding of the significance and value of social ontologies but also, the limits of these theoretical conjectures. How might some practices shaped through communication design anchor others? Is there value in giving explicit consideration to orders and practices during the communication design process? Through such agenda-setting activity, the criticism that Schatzki's proposition is limited in its applicability to 'bounded social worlds' (Cox, 2012) might also be more thoroughly tested and considered in relation to communication design.

Although beyond the remit of this paper, the case studies outlined also pivoted on the use of psychological insight to inform the design of communications. Schatzki (2001) has argued that the mind is crucial to understanding interactions with the material world and the elaboration of order within practices. It is precisely this interaction between mind, body and the material world that makes a social ontological stance relevant to shifting communication design practices. Whilst communication design can impact the arrangements of entities and the organisation of activity, it might be argued that the process of transformation is fundamentally psychological. To what end is there value in interjecting psychology intothis nexus?[5]. It is only through future work that considers such questions that the value of this new perspective on communication design and its role in the transformation of public spaces can truly be established.

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5. Note there is an extensive body of work in environmental psychology that focuses on the psychology of place (e.g. Canter, 1977) and growing traction in the application of social practice perspectives to phenomena within this field of study (see for instance Shove & Walker's (2007) work on sustainability). However, with regard to the design of communications, the inter-relation of environmental psychology and perspectives such as Schatzki's deserve detailed elaboration.

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Whilst a postdoctoral researcher in the Information Environments research network at London College of Communication, University of the Arts London (UK), Claire worked on two projects of which this paper makes reference – Safer Spaces: Communication design for counter terror 2008/09 and Designing With Intent: Influencing behaviour in transitional spaces 2010/11. Claire was awarded her PhD in 2008 from the University of Surrey (UK) and has lectured as a Visiting Practitioner at Central Saint Martins, University of the Arts London (UK).

SUSTAINABILITY AND DESIGN

DESIGN FOR SOCIAL INNOVATION: EMERGING PRINCIPLES AND APPROACHES

ANNE CHICK

ABSTRACT

Contemporary design professionals have been struggling with the challenges posed by addressing the core concepts of sustainable development in earnest for over thirty years (Fletcher & Giggin, 2001; Fuad-Luke, 2009). The sustainable development agendas are providing an opportunity to ask fundamental questions of design itself. In recent years design professionals have been pushing design beyond being just engaged with consumer culture and exploring new forms of practice. This is particularly evident when design is used to tackle social issues to create innovative solutions (Margolin & Margolin, 2002; Fuad-Luke, 2009). There is growing consensus that design can be a mode of innovation that provides a set of skills, tools and methods that guide people to new socially innovative solutions or improvement of existing ones (Brooks, 2011; Emilson, Seravalli & Hillgren, 2011; Social Innovation Exchange, 2011a). Social innovation is "innovation that is explicitly for the social and public good. It is innovation inspired by the desire to meet social needs which can be neglected by traditional forms of private market provision and which have often been poorly served or unresolved by services organised by the state" (Murray, Caulier-Grice & Mulgan, 2010:10). After a very brief review of sustainable development and how design professionals have addressed the concepts, this paper will explore 'design for social innovation', its emerging principles and approaches and the opportunities and challenges for design professionals engaging in it.

FULL PAPER

Introduction

There is a new breed of determined, creative idealists who wish to apply both design craft and design thinking as levers for political and societal change. New perspectives, ideas and technologies are being harnessed to push design beyond being engaged just with consumer culture. Design professionals, organizations and others are initiating projects that are concerned with the sustainable development agendas, both inside and outside the market economy (Chick & Micklethwaite, 2011). This is a journey of professional exploration for the designers and design researchers involved in such projects, who are not being bound by what has defined the profession in the past. These design professionals believe that the way they work can contribute to addressing particular pressing social and environmental issues (Kimball, 2011; Fuad-Luke, A. 2009). This has led to designers working in a gamut of new social and political contexts very different from the majority of their peers, and does not draw upon their higher education experiences. They are exploring and creating new forms of practice as well as identifying worthwhile projects, which in turn leads to the reinvention of design culture. This paper explores 'design for social innovation', its emerging principles and approaches and the opportunities and challenges for design professionals engaging in it.

Design strategies, methodologies, tools and language are evolving, due to how design professionals and others are addressing an increasing range of social, cultural and environmental challenges. The ideas about 'what design is' are thus changing, as design is adapting to participate in these sustainable development arenas. Fuad-Luke (2009) continues to ask through his writing and practice: Could the creation of well being, and not goods or services, be a new purpose for design? This questioning is leading to new radical approaches wherein design professionals are demonstrating new values through design action (Pilloton, 2009; Fuad-Luke, 2009; Chick & Micklethwaite, 2011). The application of "design thinking" (Brown, 2009) and other recent design methodologies, such as "design for social innovation", are creating socially innovative solutions which in turn is bringing new social significance to design and designers (Tromp, Hekkert & Verbeek, 2011).

Social sustainability in brief

Walker discusses 'sustainability' (in the context of sustainable development) as the dominant "myth" in contemporary industrialized society and the fact that the term and concept has such contemporary cultural value shows the importance, now collectively recognised, of the issues and ideas it represents. Walker's view is that the idea of sustainable development is our shared cultural way of reinventing values and principles that have been increasingly forgotten in the rapid growth of industrialized modern society. Confusion, as to what sustainable development is, unfortunately continues to hamper attempts to respond to it as an agenda, in design as much as in any other activity, sector or discipline (Fairs, 2009:6). Sustainability is made up of a complex array of sometimes competing considerations, therefore, requires a holistic view of the world and our place within it. The term 'sustainability' is asked to do a huge amount of work and those using the term need to be careful with how it is used. To progress towards a more sustainable world, design professionals need to learn their way out of unsustainable practices and explore new design arenas. A practical starting point is to break down sustainable development into broad concepts and principles. All initiatives aiming to address sustainable development should consider it's four dimensions – environment, society, culture and economy (United Nations General Assembly, 2005; UNESCO, 2001). Since the local context has a great influence on these dimensions, sustainable development takes many forms around the world. The ideals and principles behind sustainability include broad concepts such as: - Biodiversity - Climate Change

- Cultural diversity
- Indigenous knowledge
- Disaster risk reduction
- Poverty reduction
- Gender equality
- Health promotion
- Sustainable lifestyles
- Peace and human security
- Access and conservation of water for human use

- Sustainable urbanisation (UNESCO, 2011)

Due to a focus on exploring the arena of design for social innovation, this paper has prioritised the social mandate of sustainable development. Until recently the bio-physical environmental issues of design have dominated the 'sustainable design' (sometimes referred to as 'design for sustainability') discourse, often resulting in the human dimension being neglected (Chick & Micklethwaite, 2011; Fuad-Luke, 2009). There seems to be a renewed interest in the concept of 'social sustainability' and aspects thereof. Vallance et al (2011) seek to clarify what might be meant by the term social sustainability because the conceptual field is confused, resulting in uncertainty about the term's many meanings and applications.

Figure 1: Three sub-categories of social sustainability and the different ways they contributes to sustainable development as identified by Vallance et al, (2011: 342).

Development sustainability	Addressing basic needs, the creation of social capital, justice and so on
Bridge sustainability	Concerning changes in behaviour so as to achieve bio-physical environmental goals
Maintenance sustainability	Referring to the preservation (or what can be sustained) of socio-cultural characteristics in the face of change, and the ways in which people actively embraceor resist those changes

Sustainable development is a social imperative (not just an environmental problem) that demands wellinformed, theoretically robust, yet pragmatic, social solutions. These three sub-categories are useful frameworks for those engaged in social innovation initiatives who are aiming for a better understanding of how to achieve a smoother and more equitable transition from less to more sustainable futures.

Design for sustainable futures

The design community is becoming increasingly conscious of how design can address sustainable development agendas, if publications and web traffic on the subject are true indicators. The words 'design' and 'sustainability' are not fixed in their meaning and neither is the emerging language and narrative of 'design for a sustainable future' (Margolin, 1998; Thorpe, 2007). It has been acknowledged that design can be critical in addressing the various sustainable development concepts because it can have significant (both positive and negative) economic, environmental, social and cultural ripple effects. The dominant conversation on how design can address the sustainable development agendas initially grew out of the environmental life-cycle thinking of 'ecodesign' (Fletcher & Giggin, 2001; Thorpe, 2010:4; Chick & Micklethwaite, 2011:102-111). To this has now been added the aim of sustainable consumption where design is considering the sociological and psychological aspects of the consumption of products (Chapman, 2005; Thorpe, 2010). For example, designing products that encourage consumers to build a strong relationship and result in retention of the product for a longer period of time (Van Hinte &Bonekamp,

1997). A further leap is the broadening of discourses from "product-based wellbeing solutions" approaches to attending to the "quality of our contexts for living" (Thorpe, 2010:11). Manzini (2002:5) neatly characterizes this approach as a move from "products to results".

Design for social innovation common elements: Design thinking / participatory design

In the mid-2000s, the canvas for design professionals broadened even further, with a number of well know designers including Mau and Brown advocating that "design thinking" could be used to talk about "massive change", or breakthrough thinking in complex problem domains, such as the social mandate of sustainability (Berger, 2010; Brown 2009). Designers would be challenged to go beyond consumer culture and economic markets and become engaged in socially innovative design. Academics and practitioners have highlighted that design thinking has added understanding, precision and breadth to the design process by emphasizing the importance of:

- collecting good data in advance;
- a clear design brief and how to construct it;
- rapid prototyping;
- it to (social) innovation; and
- working in new, more interdisciplinary ways which emphasize problem solving and systems change through collaborative action (Westley et al 2012:06; Szebeko & Tan, 2010).

Design thinking contested the omnipotent designer and a focus on products as the solution. It advocates design as a "collaborative effort where the design process is spread among diverse participating stakeholders and competences" (Bjögvinsson et al, 2012:101). This process should not be based merely on consultation with users/citizens and stakeholders, but on their active participation. This is the "participatory design" process and is a design for social innovation priority principle (Burn et al, 2006; Szebeko & Tan, 2010; DESIS, 2011). The rationale is that this approach ensures the final solution meets actual needs and requirements and is usable by its intended audience. "Designing networks" are a response to the requirement for new thinking to address perplexing problems and the need to involve a range of actors and stakeholders working together in ways that encourage open innovative solutions (Manzini, 2007; Murray et al, 2010; MacDonald, 2011). It is important that design professionals who wish to engage in this arena, acknowledge that everyone who devises courses of action aimed at changing existing situations into preferred ones is designing (Simon, 1996). Advocates generally share the view that every participant is an expert in what they do, has valuable insights the designing network can learn from, and has a voice that needs to be heard.

Spending time with users/citizens in their own environments, rather than working on a project abstractly in another space, is another important part of the research and design process (Manzini, 2006; Thackera, 2007; Pilloton, 2009). The assumption is that the expertise does not reside solely with the design professionals, but is also to be found

in those whose interests are affected by the problem and its proposed solution. The third important element is the envisioning of ideas with the stakeholders – that especially those of future users are explored early in the design process in a human-centered, empathic, and optimistic, hands-on way. This involves engaging hands-on design devices, like sketching, mock-ups and prototypes and design games, and helping to uphold a family similarity with the users' everyday practice and supported creative, skillful participation and performance in the design process (Bjögvinsson et al, 2012:106).

Those engaged or wanting to be involved in design for social innovation need to be aware of the evolving language, models of investigation, ongoing research, and core discourses in the field. There are some common elements that appear in a credible design for social innovation model. Westley et al (2012:09) and Chick & Micklethwaite (2011) identified the following:

1. Broad-based research
2. Co-creating of the solution
3. Conducive physical space(s) that aid creativity and reassures participants
4. Clear process design and facilitation
5. Engaging hands-on design devices (sketching, mock-ups, prototyping and design games)
6. Multi-disciplinary support team
7. Tools that aid reflection on the nature of the work and its possible and actual impacts
8. Continual professional development of designers and other team members.

Approaches to social innovation are in line with the ideas of design thinking, which seem fundamentally to have similar common elements to participatory design. Bjögvinsson, Ehn and Hillgren (2012:101) observed that design thinking "sounds like good old Participatory Design", although they admit Brown and others have "better articulated" and created a "more appealing rhetoric".

Social innovation

This type of design engagement which is focused upon achieving social and public well-being (not necessarily overtly under the social sustainability agenda) has started to be framed within the context of social innovation especially in Europe (Manzini, 2009; Emilson et al, 2011). The National Endowment for Science, Technology and the Arts (NESTA), in the United Kingdom, defines social innovation as, "... Innovation that is explicitly for the social and public good. It is innovation inspired by the desire to meet social needs which can be neglected by traditional forms of private market provision and which have often been poorly served or unresolved by services organised by the state. Social innovation can take place inside or outside of public services. It can be developed by the public, private or third sectors, or users and communities – but equally, some innovation developed by these sectors

does not qualify as social innovation because it does not directly address major social challenges" (Murray et al, 2010:10). The resulting social innovations can be new products and services just like any innovation (Murray et al, 2010), but they can also be a principle, an idea, a social movement, an intervention, or some combination of these possibilities (Bjögvinsson et al, 2012; Design Council, 2010). These innovations are deemed not only as good for society, but also enhance society's capacity to act. The process of social interactions between individuals addressing certain social needs and developing outcomes is participative, involves a number of actors and stakeholders who have a vested interest in solving the problem, and empowers the beneficiaries. The process is in itself an outcome as it produces 'social capital'[1]. Given this process, social innovations can be more specifically classified.

Figure 2: Three broad social innovation categories identified by the Bureau of European Policy Advisers (European Commission, 2010:11).

Broad social innovation categories

1	Generally grassroots social innovation that responds to pressing social demands otherwise not addressed by the market and which is directed towards vulnerable groups in society.
2	Broader level that addresses societal challenges in which the boundary between 'social' and 'economic' is blurred and which is directed towards society as a whole, i.e. the Red Cross.
3	Systemic type that relates to fundamental changes in attitudes and values, strategies and policies, organizational structures and processes, delivery systems and services, i.e. an initiative relating to action to make citizens more aware of climate change. These social innovations, which are often initiated by institutions, play a part in reshaping society as a more participative arena where people are empowered and learning is central.

Social innovation is gaining attention and support from governmental institutions and the third sector (voluntary and not-for-profit) as a tool to tackle social problems. It is now discussed at an international level and is a key priority in the European Union (EU) as Member States engage in a building "a smart, sustainable and inclusive Europe" where social issues are being brought to the fore (European Commission, 2010:07). The EU is interested in successfully implemented social innovations, as this can set a good example for other Member States to follow, especially if the initiative reduces public spending as well as effectively addresses social needs (European Commission, 2010:08). It is also a major component of aid programmes targeted at developing countries.

Introducing design for social innovation

Design (often referred to as 'design thinking') is being recognized as a valid process for undertaking a social innovation project by funding and policy organizations, and others; for example, the Rockefeller Foundation and the UK's Design Council have all promoted and funded research and initiatives in this field (Murray et al, 2010; IDEO, 2008; Design Council, 2010). There is growing consensus that design is a mode of innovation that provides a set of skills, tools and methods that can

1. "The commonalities of most definitions of 'social capital' are that they focus on social relations that have productive benefits. The variety of definitions identified in the literature stem from the highly context-specific nature of social capital and the complexity of its conceptualization and operationalization" (Claridge, 2012).

guide people to new social innovative solutions or improve existing ones (Brooks, 2011; Emilson et al, 2011; Social Innovation Exchange, 2011a, 2011b; Winterhouse Institute, 2011). There is a growing momentum also from design professionals including design schools to engage with this agenda and understand how to enhance the processes and practices for designing for social and public good (Emilson et al, 2011; Morelli, 2007). This emerging field is increasingly being referred to as 'design for social innovation' (DESIS, 2011; Social Innovation Exchange, 2011b).

The design for social innovation investigations and the resulting evolving language, definitions, methodologies and practices have been driven over the past decade by a number of respected knowledge and facilitation hubs across Europe and North America (Emilson et al, 2011:25; Westley et al, 2012). For example, Professor Ezio Manzini, the Italian designer and academic, and the DESIS network[2] he formed, have been key drivers of such design practices (DESIS, 2011). In the DESIS network, ideas from a variety of actors directly involved in the problem to be addressed is central to the process. This has led to end users, grass roots designers, technicians and entrepreneurs, local institutions, and civil society organizations, being centrally involved in DESIS projects. An opening concept for Manzini and his colleagues is "collaborative services". The role of the designer is initially to support the development of new concepts and later to make them attainable so they can result in the development of social enterprises (Jégou & Manzini, 2008). In addition, a small but growing number of design agencies and design-led social enterprises have been forming to practice design for social innovation, such as UsCreate, ThinkPublic, Participle in the United Kingdom, and Project H in America (Design Council, 2010; Thackera, 2007; Pilloton, 2009).

Design for social innovation fits with the Local Agenda 21 approach to achieving sustainable development. Agenda 21 is a non-binding, voluntarily implemented action plan of the United Nations with regards to sustainable development. Local Agenda 21 is a local-government-led, community-wide, and participatory effort. Key elements are complete community participation, assessment of current conditions, target setting for achieving specific goals, monitoring and reporting. The assumption is that, without shared visions, only short-term solutions are possible and these are unlikely to be the most sustainable solutions. Shared visions reached through collaborative processes are most likely to deliver sustainable solutions of long-term value.

Developing design capabilities: The challenges of metadesign

There is confusion amongst design professionals about this field particularly with regards to the processes and procedures of researching and designing (Rules, 2008; Chick & Micklethwaite, 2011:114-115/166-167). How can they operate in these designing networks (Manzini, 2007) that often contain various actors and stakeholders such as individual people (users/citizens), enterprises, non-profit organizations, local and global institutions? Furthermore, the terminology of design for social innovation is evolving and there are numerous terms appearing which can only add to this confusion.

2. The 'Design for Social Innovation and Sustainability' Network is an international group of mainly design departments within higher education institutions.

The design for social innovation strategic frameworks and "metadesigns" (Wood, 2008) are not perfectly formed. Metadesigns are structured creative processes in which new forms of collaborative design take place. This process is enabled by a set of tools, methodologies and "ways of doing" (Manzini, 2007). This has led to a particular focus on the importance of developing design capabilities - design thinking and design tools (Social Innovation Exchange, 2011b; Emilson et al, 2011). These design capabilities have been defined as explicit (when they are performed by professional designers) and implicit (when they are expressed by non-professional designers) (Social Innovation Exchange, 2011b).

The ultimate goal of a design for social innovation metadesign, would be a synergistic process enabling the designing network to reach a gradually more shared, comprehensive and focused understanding and consensus, which would result in innovative ideas leading to a collectively acknowledged final solution (Morelli, 2011; MacDonald, 2011; Emilson et al, 2011). MacDonald (2011:5) describes the process as a "participative co-research and co-design approach" that should be an "ongoing iterative process throughout the project". The most successful projects seem to be those that start prototyping early and the prototype redesigns are a co-designing process (Morelli, 2011; MacDonald, 2011; Emilson, 2011). Inappropriate concepts are therefore rejected earlier, improving success rates sooner (Burns et al, 2006:21).

The techniques used in the designing networks are generally social and qualitative in nature (Hewer, Guldbrandsen & Crawley, 2011; Burn et al, 2006; Morelli, 2011). The approach is a brief of flexible engagement and human-centered delivery, often using the participatory methodology of co-researching and co-designing, which are dovetailed into a number of social research methods and techniques, such as ethnography (Hewer et al, 2011; Szebeko & Tan, 2010; Emilson et al, 2011:25; MacDonald; 2011). These approaches often have their origins in a number of contemporary design principles, strategies, and methodologies, such as design thinking (Brown, 2009), inclusive design (Coleman, Clarkson, Dong & Cassim, 2007), transformation design (Burn et al, 2006) and service design (Sangiorgi, 2010). These methodologies in turn have been influenced by open innovation[3] thinking (Murray et al, 2011:38). In all these approaches the role of the design professionals is generally to involve the different stakeholders in the process and design with them rather than for them (Leadbeater, 2009). This means exploring "social issues, relationships and creating engagement in communities", as well as "working across professional and sector boundaries to create new alliances and collaborations" (Emilson, 2011). This democratization of design is bringing a gradual shift in the way design is discussed and the way it is being carried out. This means users/citizens are moving from the passive consumption of design, to a more active participation in the process and maintenance of the outcome (Manzini, 2006; Thackera, 2007; Design Council; 2010).

New roles are also emerging for design professionals as their function is increasingly changing from that of generators to facilitators of ideas (Hewer et al, 2011; Emilson, et al, 2011).

3. "Open innovation" was first coined by Chesbrough (2003) and has become a byword for an open approach to obtaining ideas, capabilities, skills and talent from outside the boundaries of the organisation.

The challenges for designers and the design community in engaging in design for social innovation are unfolding, and it is increasingly acknowledged that this design is no longer constrained to the democratization of co-researching and co-designing within a project. Now, the designer is designing beyond the specific project and towards the future stakeholders continuing to modify and redesign the solution. The majority of the above methodologies are seen as a way to meet the challenges of anticipating or envisioning a solution, as it takes place in people's everyday lives. This approach is about addressing the challenge of design as an ongoing process and developing a potential design and the infrastructure so it can takes place in use after a specific project. This means the strategies of addressing a problem need to be open for appropriation in use, after a specific project is finished, and regard this appropriation of the present (evolving) solution as a potential, specific kind of design. This has begun to result in participative processes and practices being adapted to the challenge of "infrastructuring" rather than "projecting" (Björgvinsson et al, 2012). This means the project's capacities should be transferred amongst the actors and stakeholders by leaving behind the tools, skills and organizational capacity for ongoing change (Burns et al, 2006:21).

Words of caution

Design's 'project' focus can provide a way into complex social issues and provide the right scale. Design processes and universal visual language can provide the basis for conversations and tangible new visions and solutions. Design can be successfully used to address complex social problems, but the design community needs to learn to adapt to this new landscape. There is still a lot to be explored, tested and developed with regards to bringing rigor to this field and the design professional's ideal roles and responsibilities (Mulgan, 2009; McCullagh, 2010; Schulman, 2010; Brooks, 2011). There is concern that attempts to address neglected social needs through design without deep enough immersion or long enough follow-through, could result in the project becoming an imposition, or at worst, be perceived as imperialist (Tonkinwise, 2010; James, 2010). The advice is to only work on projects 'at home' and build long-term relationships with key stakeholders and actors (Emilson et al, 2011:26; Björgvinsson et al, 2012). In this perspective, design becomes about the everyday practices in particular sites and locations; it becomes about a practice committed to the work of envisioning emerging design topographies through which social and material transformations take place, in a setting, encouraged and shaped by the opening up of questions and possibilities. Design professionals working in the design for social innovation field are generally learning new strategies, tools and methods through 'on the ground' projects and action-based research situations. This is the only approach they have to support the development of robust proposals and processes and learning their implementation in real contexts (Hewer et al, 2011:9; Chick & Micklethwaite, 2011:166-167). It is important that designers develop credible tools and knowledge to reflect the nature of their work and its actual impact in the arena of design for social innovation. Kimball (2011) stresses, however, that the

design profession is still developing its clear disciplinary boundaries, strong institutions or professional codes of ethics. Academics and other professionals experienced in implementing design for social innovation projects are increasingly highlighting to those working or aiming to work in this arena, a growing number of issues they need to know and be mindful of. For example, design professionals should focus their attention as much on how they and others construct and interpret social problems and their contexts, as they are focusing on solving them (Kimball, 2011; Bjögvinsson et al, 2012). This should also be followed through with an objective critical perspective on the use of design thinking (participatory design) and whether it can add and complement important existing resources. Designers, and the processes they use (such as design thinking), are about the pursuit of a solution generally based on responding to stories of personal troubles. This approach might not be right for messy, intractable social issues. Kimball (2011) goes further and suggests "concepts such as reflexivity can help designers become aware of how their own commitments shape how they understand what is going on and what they think they can change".

Conclusion

Design is going through a period of intellectual expansion, and adapting to participate in new arenas beyond its usual professional territories. This is resulting in design professionals themselves evolving and developing greater awareness in relation to what they do, what they can do and how they can do it. The challenge for designers engaged in design for social innovation and sustainability is that the landscape is still at a "fluid phase", in which Morelli (2011:109) concludes, "...neither the strategic frameworks nor the way to address problems and opportunities proposed within those frameworks are perfectly formed". Nevertheless, design can play an important role in triggering, supporting and scaling up social innovations. It is increasingly recognized that there are new forms of design practice under development outside of consumer culture and one of these is in the design for social innovation field. These new practices will require design to collaborate more closely with other disciplines and "social heroes" (Brooks, 2011) involved in and creating social innovations (Mulgan, 2009). There is also an identified need to dovetail policy thinking, social research techniques and methodologies, and business expertise (when appropriate), along with an understanding of design for social innovation processes. This will enable complex social issues to be identified, and then, meaningful practical solutions developed (Mulgan, 2009; Emilson et al, 2011). All these stakeholders express the same needs regarding the 'scaling up' of social innovation, networking them and promoting public/private partnerships, developing common methodologies for measuring impact and social return, and providing funding by creating capital markets and appropriate regulations to attract investment.

SUSTAINABILITY AND DESIGN

DESIGN FOR SOCIAL INNOVATION: EMERGING PRINCIPLES AND APPROACHES

ANNE CHICK

ABSTRACT

Contemporary design professionals have been struggling with the challenges posed by addressing the core concepts of sustainable development in earnest for over thirty years (Fletcher & Giggin, 2001; Fuad-Luke, 2009). The sustainable development agendas are providing an opportunity to ask fundamental questions of design itself. In recent years design professionals have been pushing design beyond being just engaged with consumer culture and exploring new forms of practice. This is particularly evident when design is used to tackle social issues to create innovative solutions (Margolin & Margolin, 2002; Fuad-Luke, 2009). There is growing consensus that design can be a mode of innovation that provides a set of skills, tools and methods that guide people to new socially innovative solutions or improvement of existing ones (Brooks, 2011; Emilson, Seravalli & Hillgren, 2011; Social Innovation Exchange, 2011a). Social innovation is "innovation that is explicitly for the social and public good. It is innovation inspired by the desire to meet social needs which can be neglected by traditional forms of private market provision and which have often been poorly served or unresolved by services organised by the state" (Murray, Caulier-Grice & Mulgan, 2010:10). After a very brief review of sustainable development and how design professionals have addressed the concepts, this paper will explore 'design for social innovation', its emerging principles and approaches and the opportunities and challenges for design professionals engaging in it.

FULL PAPER

Introduction

There is a new breed of determined, creative idealists who wish to apply both design craft and design thinking as levers for political and societal change. New perspectives, ideas and technologies are being harnessed to push design beyond being engaged just with consumer culture. Design professionals, organizations and others are initiating projects that are concerned with the sustainable development agendas, both inside and outside the market economy (Chick & Micklethwaite, 2011). This is a journey of professional exploration for the designers and design researchers involved in such projects, who are not being bound by what has defined the profession in the past. These design professionals believe that the way they work can contribute to addressing particular pressing social and environmental issues (Kimball, 2011; Fuad-Luke, A. 2009). This has led to designers working in a gamut of new social and political contexts very different from the majority of their peers, and does not draw upon their higher education experiences. They are exploring and creating new forms of practice as well as identifying worthwhile projects, which in turn leads to the reinvention of design culture. This paper explores 'design for social innovation', its emerging principles and approaches and the opportunities and challenges for design professionals engaging in it.

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Professor Chick worked for six years for various international design agencies in London as a full time graphic and packaging designer. Then she worked part-time in these roles as well as pursuing a career in design research and writing, before pursuing an academic career. Professor Chick's main contribution has been in the field of mapping the design for sustainability field. Her research interests are in design for sustainability studies and applied transformative social design principles and tools. Professor Chick has presented and published widely in these areas, including books and papers in such journals as in Design Studies, Design Journal, and Design Management Review.

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Professor Chick is Visiting Professor in the Faculty of Environmental Design at the University of Calgary, Canada. She is a visiting academic to various universities in the UK and overseas in particular the Chinese Academy of Fine Arts in Beijing. Design Week identified Chick as one of the top ten influential individuals in sustainable design in Europe in 2009. She was also an expert advisor to the Design Museum for their Sustainable Futures travelling exhibition (2010) and is a Lead Technical Author, on the British Standard Institute PAS 8910: Sustainable Design standard.