

George Verghese
Curtin University

20-20 Vision with the Margin at the Centre of Design

Abstract

Designers take risks. Although the twin forces of change and continuity are always in their minds they tend to gravitate to the margins in all that they do. This is what designers do best — they test the margins, and this testing is central to a designerly way of thinking. As an example, this paper focuses on new materiality and its relationship to innovative interior design. Examination of the concept of risk in relation to the use of untested materials and their application constitutes a critical dimension of design at the margins. The paper will draw from a variety of sources in order to map this terrain, and will refer to the work of Bourdieu and Kingwell, in association with those of other leading designers and design theorists.

The paper is in three parts. The first briefly explores the idea of marginality in relationship to design practice. This is followed by a reinterpretation of the Naturalistic Inquiry Model by Kate Bunnell (1998) that is translated to refer to the application of new materials in design. Lastly, using this revised model and secondary research, a mapping of the key factors facing innovative material agents will be presented in order to demystify the terrain.

Keywords:

Innovative Materials, Naturalistic Inquiry Model, Design

Introduction

Out of an existing universe of ideas, what we know constitutes only a small fraction that we bind with margins and call an existing body of knowledge. The boundaries are arbitrary and dependent on a wide variety of factors, including but not limited to scientific, psychological, cultural, and sociological. Our concern should not be to locate the margin, but rather to ask, why do designers want to constantly transcend it? Extension across a new threshold is a dangerous yet essential human endeavour, and involves aspects of habitus, potentiality, and the willingness to take risks in design. The work of contemporary designers is located on the margins, but it is this location on the fringe that forms the centre of their design ethos. Therefore the core tenet of designer's ethos

is a preference to practice on the margins, and to understand the accompanying relationships of such a practice. Reference to the work of Pierre Bourdieu, Mark Kingwell, and Charles Peirce, as well as other leading designers and design theorists, will help to clarify the relationship of this ethos within the larger context of innovation. The relationship of innovative material use in a modern interior is part of this larger map of innovative thought.

What does it mean to be on the margin, particularly in terms of design practice and materiality? Naturalistic Inquiry methodology can be adapted to map the relationships of the various factors facing designers who work with new materials. These objectives allow for a sense of clarity in practice, by acknowledging the factors that may affect the engagement with new materiality and transgression over established boundaries. This is not a positivist approach to achieve veracity of practice, but rather a view of a particular perspective of practice for those designers engaged with exploring the boundaries of materiality.

Relationships with various ideas add insight to what we do as designers. Understanding the various contextual relationships in our world of design allows us clarity of action, much like having clear 20-20 vision in which the unknown is brought into focus. With this worldview of how activities in design practice relate to each other, an assurance will be gained, in the knowledge that the designer's own activities in material exploration are not isolated, but that they are part of a larger context. Contributing in this manner allows for other relationships to occur that had not been previously considered as avenues for further investigation. Ultimately, this is exactly what any map achieves: clarity through demystifying the unknown and opportunities for further investigation.

A brief exploration of the idea of marginality in relationship to design practice follows. I will then present a reinterpretation of Bunell's (1998) Naturalistic Inquiry Model, translating it to refer to the application of new materials in design. This revised model is used to chart the relationships of various domains that involve the material change agents engaged with new materiality in design. This secondary research methodology will provide a direction for future research that aims to empirically research the relationship of the various domains of the Naturalistic Inquiry Model in reference to the habitus of the designer.

Marginality in relationship to design practice

One of the most influential design paradigms is clearly expressed by Peter Brook (1980, 108) "... it is only by searching for new discriminations shall we extend the horizons of the real". In this statement he captures the essence of the search for new boundaries that extend the horizons of the real world, and in doing so helps us to define ourselves. His thought resonates in our understanding of various design disciplines, in that it clearly presents the idea of a *margin* and the need to transcend it. Immediately after defining the designer's activity on the margin, the idea of context is instantly inferred, as a margin is by definition an edge of another entity. A margin is an almost indefinable position between what has been and what could be, and designers reflect, react, and participate on this boundary as their very core activity. The margin, or the edge, is a continuous threshold. Like any threshold it opens onto new areas of investigation, but is not necessarily a barrier, more a portal. Mark Kingwell succinctly describes the function of a threshold as something that "...is not to be wide but to be crossed. Every limit is also its own negation" (Kingwell 2003, 1). It is this transcending or transgression of boundaries that helps define radical innovation and design, as Anthony O'Shea's research into innovation and product development explores, when he discusses Bataille's view of sovereignty, fear of death, and movement from the profane rational world. O'Shea (1999, 5) states that "[t]ransgression thus means that we must leave behind the profane, rational world to become *other* by a leap into the void".

However, as we search for new discriminations on the horizon or the edge of the void, we need 20-20 vision, or at least an aim or a path to attain that vision. If we are to venture into new territories and transcend the margins, a degree of risk is required. The handling of risk is essential for designers, and most certainly a trait that they are all engaged with, no matter what discipline; whether or not the design outcome is focused on avoiding risk, or challenging the norm, risk is integral in any design methodology. Beyond mere design methodology, Peter Bernstein (1998, 1) goes further when he states: "[t]he revolutionary idea that defines the boundary between modern times and the past is the mastery of risk: the notion that the future is more than a whim of the gods and that men and women are not passive before nature". Design is an active agent of change.

Mapping of ideas in relationship to a Naturalistic Inquiry Model

Materiality defines our world. The manipulation of commonly known materials, as well as, the utilisation of new material compositions, contribute towards establishing delicate ideas of place-making within our world (Verghese 2007, 203). The unravelling of complex sets of real-world

issues relating to innovative use of materials in design requires both analysis at a fine level and synthesis within a broader view. Carole Gray and Julian Malins have laid out numerous frameworks for creative research methods in their publications, and in their book *Visualizing Research – A guide to the research process in art and design* (2004), the work of Katie Bunnell (1998) is considered in terms of her diagrammatic analysis of real-world research. This analysis offers a post-positivistic research method informed by the view that research outcomes occur in context rather than solely in a laboratory. I have re-interpreted a diagram of a *Naturalistic Inquiry Model* by Bunnell (Gray and Malins 2004, 73) in terms of the research I have undertaken into new materiality. This diagram (see figure 1), maps out design research outcomes and process as a central hub from which six domains interact. Unlike the diagram of Bunnell, I see that the edges to these domains should not have a clear boundary, as the synergy between them can lead to very fruitful outcomes.

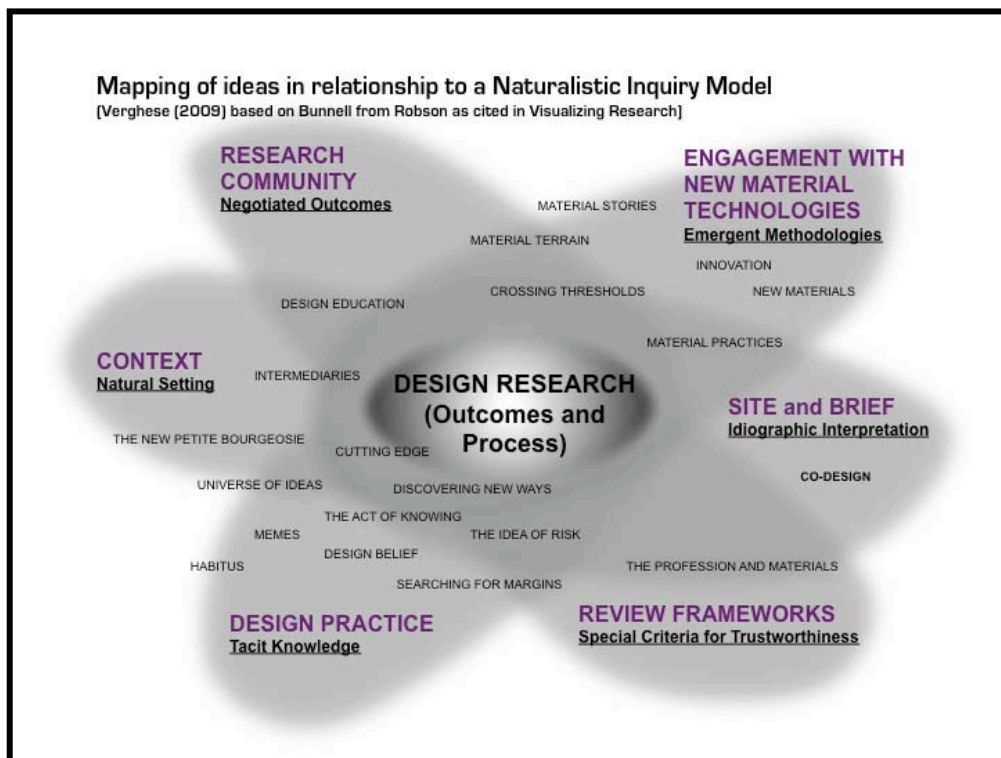


Figure 1: Mapping of ideas in relationship to a Naturalistic Inquiry Model (Verghese (2009) based on Bunnell from Robson as cited in Gray and Malins 2004).

Bunnell sets out the key characteristics, or as I have labeled them, domains, as: Natural Setting, Tacit Knowledge, Special Criteria for Trustworthiness, Idiographic Interpretation, Emergent Methodologies, and Negotiated Outcomes (Gray and Mallins 2004, 71-2). It was obvious that this was almost an ideal framework to work with but the domain names needed to be reinterpreted to relate to the material research I was undertaking. I will now briefly outline the terminology

adapted from Bunnell, which I will return to later in the paper to propose how my research into materiality can relate to these domains.

As described by Gray and Mallins (2004, 72) the first characteristic identified by Bunnell was Natural Setting. This describes that space in which the creative research is undertaken. Bunnell's analysis of a ceramic designer/craftsperson outlines the studio and workshop as the environment central to the research outcome. This is a place in which the researcher is at the core of their research activity. I have renamed this domain as: Context. This not only refers to the working context of the creative act, but also the actors involved and the social and cultural setting that play a factor in an outcome. It is not only the physical space but also the mental space needed to work.

The second characteristic identified was Tacit Knowledge. This true art of knowing relates to the kind of knowledge gained through practice and action. The craftsperson or designer, at home in the studio, is active in the process of doing the work, and it is this experimentation and act of discovery through a reflective and iterative process that identifies a designerly way of thinking. I have renamed this domain as: Design Practice. I view the act of practising as an activity central to the very being of a designer. It is here that the designer deeply engages with ideas and outcomes. The very core of the designer's approach is the understanding of their tacit design awareness and knowledge, and expanding upon this act of knowing.

Bunnell names the third characteristic Special Criteria for Trustworthiness. This phrase, despite its clumsiness, is clear in its intention of providing a framework for others to examine and review the work. Achieving this is only possible with an analytical methodology that allows for explicit interpretation of the outcomes. Renaming the characteristic as Review Frameworks allows for a greater scope of objective examination to occur. In this context, the organisation and profession of design can engage in explicitly reviewing the work and material advances.

Idiographic Interpretation, as noted by Bunnell, deals with interpretation of principles particular to a specific situation. This is best translated into my material research as a domain of Site and Brief. The research outcomes are determined greatly by particular client conditions and site constraints, and designers often have to move from general principles to deal with these conditions in a particular way.

Perhaps the most obvious area of activity related to the advances in new material technologies are activities that align with what Bunnell labels Emergent Methodologies. This characteristic deals with the engagement of the research question and how it evolves with the practitioner's involvement and the resulting iterative process that is essential in any design approach. I have titled this domain: Engagement with New Material Technologies. Here I feel that it is not just the existence of new materials that is important, but the engagement with these new materials that is essential. This engagement leads to continued refinement of outcomes through an iterative, reflexive and improvising approach.

The last characteristic noted by Bunnell is entitled Negotiated Outcomes. This deals with critical assessment that is carried out by others through a variety of means, such as research papers, exhibitions, workshops, seminars, publications, etc. The critical aspect is that it is peer reviewed. I have simplified the term and called the domain: Research Community. Not only should the outcomes be peer reviewed at a scholarly conference or similar vehicle for the dissemination of knowledge, but also consideration needs to occur at all levels of education, such as workshops, masterclasses, and integration into teaching curricula to encourage experimentation and exploration with materiality.

20-20 Vision with the Margin at the Centre of Design

Design Practice / Tacit Knowledge

The domain Design Practice / Tacit Knowledge within the Natural Inquiry Model is the first that needs to be discussed, as it represents an ideal relationship to the conference theme of *Creative Margins* (Curtin University of Technology, November 2009). When considering how to approach a design problem, and whether or not there is a need to take a risk with materiality, a designer must fully understand their own design ethos. The articulation of a personal practice in social space forms a core idea behind what Pierre Bourdieu terms as *habitus*. He describes *habitus* as a system of durable, transportable dispositions that function as the generative basis of structured, unified practices (Bourdieu 1984, 170). It is a means of establishing likes and dislikes, and this determination of preferences also alludes to the notion of the edge or margin of one's preference. Bourdieu's writing gives a greater degree of respect to a commonly mis-represented term of taste. When discussing taste and material culture (both domains that all designers engage with) Bourdieu (1984, 56) comments that taste is "the basis of all that one has — people and things — and all that one has for others". It is this dialogue between the dynamic nature of life and the static potentiality of matter and material that drives design.

In many cases it is not just the brief that drives creative acts, but the designers' own sense of belief. Designers are faced with new challenges because of the changing roles of their relationship with technology. Some are adapting their practices through the introduction of specialists within staff or research groups to examine the potential of materials prior to the need or application of the material. This self appraisal of one's own design ethos is clearly echoed in the words of Michael Polanyi (1974, 71) when he states: "To affirm anything implies, then, to this extent an appraisal of our own art of knowing, and the criteria of our own which cannot be formally defined". Yet at the same time that we can acknowledge an art of knowing, design is not about just replicating the past. The act of balancing change with continuity is an activity that constantly occupies designers of all disciplines. Yet, I assert that in order to elevate the design outcome from mere production or reproduction, an act of defiance must occur, no matter how small. It is here that risk appears again, but in many ways it is this irritation of doubt that excites us. This challenge that designers seek is best seen in the exploration of new materials. The use of such unknown entities leaves designers at an edge of an abyss not thoroughly knowing the outcome. When the American pragmatist Charles Peirce discusses how to make ideas clear he recognises that "[w]e have found that the action of thought is excited by the irritation of doubt, and ceases when belief is attained; so that the production of belief is the sole function of thought" (Peirce, 1878, 288). When the sense of doubt is overcome, design practice is reinforced through the development of tacit knowledge related to the understanding of how a new material performs. This expansion of knowledge will reinforce the designer's own *habitus*.

We can equally ask ourselves: is it just the handling of new materials that allows a designer to expand their understanding? The willingness to act, and cross boundaries, is part of the skill set of designers but there are ideas that are transferred to the designers just by handling the materials. Mark Kingwell refers to Richard Dawkins's concept of *Memes* when he states: "Memes, Dawkins said, are self-replicating bits of coded information that take up residence in our brains, like parasites, and pass from organism to organism via entirely material transfers..." (Kingwell 2004, 197). However, as in any type of communication, transmission and translation are needed. So the recipient must be able to read the message about the potentiality of the new material.

Design requires the examination of a variety of criteria beyond mere function and form. However, it is the material realisation of the idea that we are often first faced with. In a world of constant change and pressure from numerous external sources, regardless if they are from sustainable

organisations, economic forces, or social and cultural groups, change and how we practice in the light of changing circumstances are key factors for all designers. In fact, the designer undergoes a completely different experience from the moment he/she enters design school. Here the emphasis is not on conformity, but on making your own mark, being different. Again, this requires a degree of risk to inhabit the margins. Guy Julier (2000, 84) clearly describes this: “[i]n terms of design practice, risk becomes aestheticized, reflexive and often deliberate. ... Thus ‘cutting edge’, ‘experimental’ and ‘intuitive’ have become familiar descriptive terms among designers”. Experimentation with materiality often establishes a designer in their career, and the work of Frank O. Gehry, Yabu Pushelberg, Herzog and DeMeuron are instantly recalled. Another young designer who is quickly establishing himself on the world stage is David Adjaye. Two years ago he was an invited guest panelist in the Design Miami event entitled: “Material Innovators: how are cutting-edge designers harnessing the power of materials?” He encapsulates the essence of being a designer, and particularly one working with materials and transcending the margins, when he states: “[f]or me, I strongly contest categorization, and I have to as a designer. I don’t want to be put into a box. It’s like death. So I am interested in permanently discovering new ways” (Adjaye 2007, 15).

Context / Natural Setting

When examining the domain of Context / Natural Setting in relationship to new materiality, the edge of the practice domain needs to be considered; as with other domains, strict classifications are not necessary. Boundaries are artificially defined and we bind these with margins. Sometimes these margins define ideas and methods, but they also bind what we call a body of knowledge. These margins are artificial, or at least they can be considered convenient, but it is precisely at these margins that research and innovative thought reside. This is probably more aptly translated into the 2007 Edge question for the World Question Center¹ in which Stephen Pinker (2007, xxix) asked:

The history of science is replete with discoveries that were considered socially, morally, or emotionally dangerous in their time; the Copernican and Darwinian revolutions are the most obvious. What is your dangerous idea? An idea that you think about (not necessarily one you originated) that is dangerous not because it is assumed to be false, but because it may be true?

The universe of ideas is constantly expanding and it is here that the context of materiality and design practice meet. The physical space is only one aspect of this domain that pertains to the designer and their relationship to new materials.

Two terms that must be now considered in relationship to the social and cultural context in which designers work are: “the new petite bourgeoisie”, and “intermediaries”. Pierre Bourdieu, who introduced the terms, extensively expanded them in *Distinction – A Social Critique of Judgement and Taste* (1984); and Keith Negus also discusses the relationship of cultural intermediaries to production and consumption in his research (2002). Bourdieu (1984, 359) claims that the “...new petite bourgeoisie comes into its own in all the occupations involving presentation and representation... and in all the institutions providing symbolic goods and services...”. This term surely defines the designers in society, and as such is the context in which new materialists are working. However, despite the fact that the context in which designers work is usually their office or studio, both personal and specific to the person, the other social frame in which they work must be considered. It is here that Bourdieu’s term “intermediaries” helps to define the inherent relationships. Negus (2002, 503) states that the “...central strength of the notion of cultural intermediaries is that it places emphasis on those workers who come in-between creative artists and consumers (or, more generally, production and consumption)”. This clearly identifies those working with cutting edge technologies and materials. Designers do not design the material, but they apply it in their compositions and therefore work extensively in the zone between consumption, or client, and that of production, usually, in this case, the material manufacturers. The understanding of the exact context that the designer works in is important when mapping out the various factors affecting new materiality in design.

Engagement with New Material Technologies / Emergent Methodologies

This domain within the Naturalistic Inquiry Method best aligns with innovation taking place around new materials in design. The material terrain is established by those innovative designers who explore the context with close attention to the edges of the map, and by doing so their investigations help to establish the body of knowledge that defines new materiality in design. The irritation that Peirce described earlier leads designers to consider alternate means of satisfying the quest for alternative materials.

Engagement with new ways of working and new methodologies is aligned with new methods of working with advanced materials. However, to establish new methods there must be recognition

of the existing datum point of current material technology. If we narrow down the design disciplines to look at interior design, the area of my immediate concern, we can say that an “...architectural enclosure captures a volume of material matter with a spatial condition that is called an interior” (Verghese 2007, 197). In thinking this way we clearly put the utilisation of materials at the forefront of design, a place where the adventures begin.

George Beylerian, CEO of Material ConneXion®, is perhaps one of the most influential individuals in the appreciation and utilisation of new material technologies. His organisation is a prime example of a support group for designers aimed at informing the market and promoting the use of new materials globally. Whilst illustrating the Material ConneXion® database in his book *Ultra-Materials – How materials innovation is changing the world* (2007), he states:

[m]aterials are the core of the built environment: everything we touch and smell, and most of what we see and hear, is based on a material of some kind. Design is the practice of making those materials into products and environments that hopefully meet the needs and desires of the consumer. (Beylerian and Dent 2007, 17)

Here we have again the insistence that materiality is at the core of design. So, much like Bourdieu’s *habitus*, it is both the center and the edge, it provides the structure and also structures. When it comes to new advances in materials, Ezio Manzini expands the relationship of materiality to design by removing the constraints of materiality being solely tied to matter, and says that the term new materials expresses “...a new technical and cultural atmosphere, within which the transformation of matter is taking place” (Manzini 1989, 18).

These ideas are particularly relevant today as the key to business success is innovation. A company cannot be innovative if it is complacent. Therefore, not only are the material change agents such as designers on the thresholds and margins looking to cross into new territories, but all actors in this cultural atmosphere must also be willing to take risks. The fuzziness of the boundaries of each domain become clear here, as Engagement with New Material Technologies shares edges with other domains in the Naturalistic Inquiry Model. Innovation occurs when outcomes necessary in society are accomplished in an alternate manner. Arthur (2009, 101) states: “...many different designers acting in parallel produce novel solutions: in the concepts used to achieve particular purposes; in choice of domains; in component combinations; in materials, architecture, and manufacturing techniques...[t]he result is innovation”.

Research Community / Negotiated Outcomes

The next domain is one that goes beyond the immediate academic research community in which critical feedback is offered on the work; although those areas such as specialist lectures, workshops, exhibitions, and publications are all prevalent in design and material technologies, it is the dissemination of knowledge that is important. Transmaterial® and Material ConneXion® are two organisations focused on negotiated outcomes that are published and reviewed. However, these are private companies that are not presenting an overly critical review of the work, but where the material adventures do demonstrate that assessment by a critical player is when the work gets used in design. The act of utilisation of new materials by designers, and the increase in its use demonstrates how materials can be used that are different. The margin of this area is best represented by design education. It is here that the romantic notion of the art school experience continues, alluded to by Firth and Horne (1987), in Julier's *Culture of Design* (2000), as: "...the critical edge marginality allows, turning it into a sales technique, a source of celebrity". This clearly refers to the petite bourgeoisie and its relationship to being on the margins.

Review Frameworks / Special Criteria for Trustworthiness

The next domain of Review Frameworks / Special Criteria for Trustworthiness is in many ways closely related to that of Research Community as it deals with criticality. However, this domain is not so much concerned with the actual presentation of the work, but more with the framework for assessing it. It is also related to the domain of Design Practice in so much as it deals with the idea of risk in its core relationship to a meta-frame for designers to work within. If we agree with Bernstein (1998) that the idea of risk marks the boundary between the past and modern times, as stated earlier, we could equally state that designers are change agents for future scenarios. Change must be balanced with continuity. It is in the framework of design education that both negotiated outcomes and review frameworks appear to allow students the opportunity to explore and strive for innovative solutions within the context of practice.

Beyond the world of education, the profession sets up professional frameworks for material performance through standards, and frameworks for challenging those standards. The marketplace and consumer encourage a point of difference within the designed outcomes to provide individuality in a residential interior project, or an economic advantage through a commercial project. These differences are developed, in a general sense, in commercial interior spaces through material proportions and juxtaposition to allow the true identity of the brand to be fully

communicated, and in the same sense the identity of the residential client needs to find its material language to give the design a sense of place that resonates with the client. It is through these scenarios that materiality is constantly at the forefront. As George Beylerian (2007, 7) stated at the Design Miami event:

But my advice to the world of professionals is that the future is absolutely a marriage of their profession and a marriage with the science of materials, which we, in this case have tried to make it easier to understand...

Site and Brief / Idiographic Interpretation

The last domain to discuss in this paper was the least investigated due to the scope of the paper and the emphasis on materiality. It is in this domain of Site and Brief / Idiographic Interpretation that the finite requirements of the design brief from the client marries to the design ethos of the designer in terms of material application. The heroic figure of the designer must now be challenged, as designerly ways of thinking have allowed design to be more of a co-operative venture. Material innovation is a networked innovation that grows out of understanding and working at deeper levels with the client and site factors. It is here that the general principles outlined in frameworks and practice have to be tempered with specific constraints. In doing so the material application is fine-tuned for a particular condition.

Conclusion

In examining the relationship of materials to design practice, and particularly interior spatial designers, it must be asked: Would your own design *habitus* involve the use of new cutting edge materials? In answering this question, would it raise another as to whether or not you see yourself as a designer that follows design formula, or as a designer whose centre is on the margins? And lastly if you are the former and one that follows design formulas of style, are you really, in terms of materiality, designing or just reproducing?

Design has escaped into the wild (Hagen 2009), and the designed outcome and the designer stand as explorers at the edge of a new material world. Understandably, when a person enters unknown territory, a map becomes essential to know the key datum points that will allow survival. This research paper has presented such a map that will now aid my future research in verification of these ideas through deeper and essential empirical research. However, given the scope of this paper, I have only addressed demystifying some of the domains of the material wilderness.

Notes

- ⁱ In 1988 a group of individuals came together from their previously informal gatherings to establish the Edge Foundation. This group included intellectuals from a variety of fields and disciplines such as science, philosophy, technology, business and the arts who met to discuss issues that aimed to raise deeper meanings to our lives, and in the process question and define who we are as human beings. Part of this foundation is the annual feature of The World Question Center. This center was established to ask the members to address specific questions. In 2006, Steven Pinker asked the question: “What is your dangerous idea?”

Works cited

- Adjaye, D. 2007. *Design Talk Transcription at Design Miami 2007: Material Innovators: How are cutting-edge designers harnessing the power of materials*. <http://www.designmiami.com/downloads/DM07%20Talk3.pdf> (accessed October 25, 2009).
- Arthur, B. W. 2009. *The Nature of Technology – What it is and how it evolves*. London: Allen Lane.
- Bernstein, P. 1998. *Against the Gods – The remarkable story of risk*. Toronto: John Wiley & Sons.
- Beylerian, G. 2007. *Design Talk Transcription at Design Miami 2007: Material Innovators: How are cutting-edge designers harnessing the power of materials*. <http://www.designmiami.com/downloads/DM07%20Talk3.pdf> (accessed October 25, 2009).
- Beylerian, G., and A. Dent. 2007. *Ultra-Materials – How materials innovation is changing the world*. London: Thames and Hudson.
- Bourdieu, P. 1984. *Distinction. A Social Critique of the Judgement of Taste*. London: Routledge.
- Brooks, P. 1980. *Empty Space*. New York: Penguin Books.
- Bunnell, K. 1988. The Integration of New Technology into Ceramic Designer-Maker Practice. [unpublished PhD thesis]. Aberdeen: The Robert Gordon University. Quoted in Gray and Malins, 2004, 73.
- Firth, S. and H. Horne. 1987. *Art into Pop*. London: Sage Publications. Quoted in Julier, 2000, 36.
- Gray, C. and J. Malins. 2004. *Visualizing Research – A Guide to the Research Process in Art and Design*. Aldershot: Ashgate Publishers.
- Hagen, P. 2009. Design and Use: Tools and Trends in Design in Future Design Lecture Series. September 10. University of Technology Sydney, Sydney.
- Julier, G. 2000. *The Culture of Design*. London: Sage Publications.
- Kingwell, M. 2003. Limits and Thresholds: On the power of interiority. *IDEA Journal* 4(1): 1.

-
- Kingwell, M. 2004. *Practical Judgements –Essays in culture, politics, and interpretation*. Toronto: University of Toronto Press.
- Manzini, E. 1989. *The Material of Invention*. Cambridge: MIT Press.
- Negus, K. 2002. The work of cultural intermediaries and the enduring distance between production and consumption. *Cultural Studies* 16 (4): 501-515, <http://www.tandf.co.uk/journals> (accessed September 8, 2009).
- Peirce, C. 1878. How to make ideas clear. *Popular Science Monthly* 12(1): 286-302. <http://www.marxists.org/reference/subject/philosophy/works/us/peirce.htm> (accessed September 19, 2009).
- Pinker, S. 2007. Introduction. In *What is your Dangerous Idea?* ed J. Brockman. i-xxviii, London: Pocket Books.
- Polanyi, M. 1974. *Personal Knowledge – Towards a post-critical philosophy*. Chicago: University of Chicago Press.
- Verghese, G. 2007. Sensual Spaces Through Material Abstraction. In *Thinking inside the box – A reader in interiors for the 21st century*, ed. J. Gigi, F. Hay, E. Hollis, A. Milligan, A. Milton, and D. Plunket, 197-206. London: Middlesex University Press.
- Verghese, G. 2009. 20-20–The Margin is the Centre of Design in Creative Margins, Tenth Humanities Graduate Conference. November 5-6. Curtin University of Technology.