Introduction

Any advance in design education should have a direct impact on the conditions of the world we live in. However, there are sets of conditions that are impacting on design education in ways that the history of the discipline has not traced, and as such need to be explored. And there is a mix of factors shaping the design school – internal, external and contextual – that are all making a significant impression of the education of the designer. The major external factors are two socio-cultural trends; the blurring of discipline boundaries, and 'making' consumed by digital reproductivity. This second factor is essentially external to the discipline because the digitalisation of design did not arise from the internal elements of the traditional design school – design studio/history/theory, techniques of making, and techniques of representation. And while these two trends have shaped design education, it is also important to consider the impact of a corporate concept of organization, now ubiquitous in the tertiary sector, because it locates programs in faculties based on criterion that more often than not have little to do with the pedagogical systems in use since the inauguration of the Bauhaus. I also propose that the internal factors are subject to constant change (both in content and their learning outcomes) due to three other related contextual factors – the educational policies of governments, the aims and expectations of the profession, and the organisational strategies by which universities allocate resources.

Since the inception of the Bauhaus, these contemporary socio-cultural and technological transformations have forced schools of design to revise their curriculum. If we follow the contemporary literature on what is called postmodernism, the first is the turn from the discourse of disciplinary autonomy to inter-disciplinarity that can be associated with the student uprising of 1968; and the second is the emergence of consumer culture and tele-communication technologies. These developments had three consequences for the teaching of art and design (De Duve, 1994). Firstly, instead of the Bauhaus emphasis on 'design', there was a shift to gain academic legitimacy by establishing a dialogue with history and theory developed in firstly scientific and then philosophical realms. Secondly, whereas a major objective of the Bauhaus was to replace the traditional notion of 'creativity' with that of 'invention', the latter's scope was framed either by typological and morphological research typical of design science activity. And the third consequence was the emergence of neo-avant-gardism supported by the push toward interdisciplinarity,

and a positive attitude toward technology as formulated by Reyner Banham's revisionist reading of the Modern movement (1960). So the shift from disciplinary autonomy to interdisciplinarity, which is now seen as normal and even desirable, has in fact cultivated a very different landscape for the design school.

The second contemporary development that has transformed the state of design education is the introduction of digital techniques in the 1990s, not only in the area of design, but also in the traditional ways of making and representation. If we accept the argument that digitalisation has debunked the Humanist discourse on design theory and practice, then it is necessary to examine and investigate the ways that digitally reproduced serial variability breaks away from the traditionally conceived rapport between design, manufacture, and representation. By the humanist discourse I mean the discourse relating theories of talent and to theories of making, which the digital has transformed into imitative reproductivity – more later.

I am interested in how the dialogic of internal, external, and contextual factors have influenced and transformed the design school, and what design education might have to do to deal with these often contradictory vectors. And in particular in the present situation when design's recognition and relevance are the products of disseminations through globalised flows of information and the spectacle of image making.

One of the main objectives of this paper is to demonstrate the extent to which transformations taking place in the mix of these factors influence the pedagogical orientation permeating design education. For example, while it has been almost a normative practice for schools of design to appoint positions of directorship from either academia or the profession, more often than not this decision is shaped by issues associated with governance and bureaucracy, which together are now also shaping the profession of design. So I argue that the direction of design education is now more a result of structural forces than forceful personalities or strategies. And while structural forces push the design school into the required corporate shape, the deterioration of disciplinarity is dissolving its pedagogical platform.

Contextual Factors

With regard to what I call the contextual factors – the educational policies of governments; the aims and expectations of the profession; and the organisational strategies by which universities allocate resources – these simply need noting, mostly because they cannot be resolved and are beyond the scope of this paper. However, governments and administrations are actively reshaping what we perceive of the thing called the university. And what was always a trickle of complaint about the domestication of the modern university (post 1968), has become an increasing flow of books, reports, newspaper columns and editorials, public admonishments, proposals and counterproposals, new methodologies (including the new deal for free online courses), and the establishment of several free but illegal universities, all questioning the future project of the university. The student uprisings of 1968 alerted administrations to the enormous power that political independence had always invested in the idea of the university, which when flexed demonstrated it could destabilize an increasingly fragile nation-state; made fragile by failing to understand the implications on territory (sovereignty) with the emergence of globalization (Bauman, 2003), plus a future whose death was prescribed by the arm race. What we now know as the culture of audit – systemic micromanagement – began with the student protests in Europe and the USA.

At the same time the design profession appears to be flattered by the faint glow of growing recognition of design, but while staring in the face of increasingly severe global limits, the relevance of what it does is plummeting. This paradox is reflected in increasing pressure by the professional for work-ready graduates, readily supported by universities who are required by governments to promote the employability of their graduates, almost guaranteeing that the important question about how design actually operates in the world will be avoided. In addition, the allocation of resources to schools is based on 'incentives' established by governments that reward this paradox.

Design & Discipline

The following discussion is based on some already published material by a colleague and I (Bremner & Rodgers, 2011), and is reprised here because it is a comprehensive theory on the blurring of disciplinarity, and I would argue that this is the major complication for the design school.

A recent spate of books (Smith and Dean, 2009; Elkins, 2009; Buckley and Conomos, 2009; Barrett and Bolt, 2007; Madoff, 2009); and two recent conferences concerning art education *Transpedagogy: Contemporary Art and the Vehicles of Education*, MoMA, New York, in 2009; and *Deschooling Society*, Hayward Gallery, London, in 2010, highlight*,* as the writers and speakers remind us, that art education is undergoing another periodic revision. Similarly, the recent conference on the PhD, *Doctoral Education in Design Conference: Practice Knowledge Vision*, Hong Kong Polytechnic University, Hong Kong, 22-25 May, 2011, could be seen to be an indicator of cyclical concerns in design education. Especially since the first *Doctoral Education in Design Conference*, Ohio, 8-11 October, 1998, was soon followed by *Foundations for the Future: Doctoral Education in Design*, La Clusaz, France, 8-12 July, 2000, and then the *3rd Doctoral Education in Design Conference*, Tsukuba International Congress Center, Tsukuba, Japan. 14–17 October 2003. That nearly a decade passed from the last of these conferences provides evidence that discussions around the artist, the designer, and the academy regularly address one crisis or another in the educational turn.

While perhaps we shouldn't draw comfort from the knowledge that education revolves around a cycle of crises, the recent conferences and publications are a response to growing concerns about art and design education. A rationale for these concerns is best captured by Nicholas Bourriaud in his thesis for the *Altermodern* exhibition at Tate Modern in 2009 which states 'The times seem propitious for the recomposition of a modernity in the present, reconfigured according to the specific context within which we live – crucially in the age of globalisation – understood in its economic, political and cultural aspects: an altermodernity' (Bourriaud, 2009).

If the purpose of all dimensions of design education is to make us better designers, and generally better informed about the possibilities and limitations of the subject that is design, so this too must be the primary function of practice. Moreover, if what we call design is now best described as a soluble instrument in the altermodern project, it is easy to see why we might be concerned about design education in this contaminated territory.

Furthermore, if we accept that design education is framed by its three basic components of design studio/history/theory; techniques of making; and techniques of representation; then they all began to blur their disciplinary characteristics some time ago. And the idea of design without discipline has, from the Bauhaus, been presumed to be impossible. However, we can trace the dissolving disciplines in an essay from 1994, 'When Form Has Become Attitude—And Beyond' (resulting from another conference on the crisis in art education), in which Thierry de Duve described the shift from the Academic to the Modern to the Post-modern model of art education (and because his Modern model was developed at the time of the Bauhaus I take his critique to be equally applicable to design). And to this framework another another temporal dimension can be added – the Alter-modern model. The Alter-modern model coincides with a condition brought about by the dissolve of disciplinarity into a blurred state called Alterplinarity (an 'other' disciplinarity). Both the model and the condition are caused by globalisation and the proliferation of the digital resulting in connections that are no longer 'amid', cannot be measured 'across', nor encompass a 'whole' system, which has generated an 'other' dimension (Bourriaud, 2009), an 'alternative disciplinarity' - an 'alterplinarity'.

De Duve elegantly outlines the transformation of art education in the twentieth century, explaining that talent resided in the few and required skill, whereas creativity was universal and just required a medium for its expression – hence since the Bauhaus everyone could be an artist (Borer, 1997) or now a designer as Donald Norman amongst others suggests (Norman, 2004). In the academic model 'métier' dealt with the mastery of a medium that could allow a skill to be continuous, whereas invention was aimed at producing novelty. Superseding the modern was the post-modern where 'critical attitude' replaced creativity, but rapidly degenerated into artistic 'pose', and simply required a 'signifying practice' to convey its form in a soup of referentiality and replication. Nearly twenty years on I propose another tripartite descriptor of art and design activity in what Bourriaud (2009) calls Alter-modernity – which derives from the global flow of capital and information, sped up by participation, and suspended in the 'cloud' by digitisation.

In the alter-modern condition we have reverted to imitation not as the result of talent, but at a time when it has become apparent that the relationship between production and the project of design has been changed by digital technology. Whereas for most

of the twentieth century none of us were involved in the production of anything, it was nothing to imagine consuming everything. Now, courtesy of the digital, we are all involved in the project of producing nothing, but that 'nothing' is consuming every imagining. Instead of projecting 'what-might-become', the digital is producing the design of an 'other' world where the project is to archive 'what-was'. And it is taking more and more of our time to produce and consume this project. Imitation is the means of contributing to, and taking guidance from, this project forming a reassuringly derivative loop. The derivative is also one of the dominant products of global capital and it functions as a financial medium of insurance against change (a dangerous development for the project of design which has always been predicated on change).

Having replaced creativity with pose, de Duve (1994) suggests that art (and especially design) could simply be willed into existence. Now in the derivative marketplace of alter-modernity it can be argued that everything is imitated. That is, it can be easily understood to be simply 'willed into existence'. It is then so easily produced that we now need to seriously examine the relationship between 'what' we produce and 'why' we bother to produce anything at all in the age of limits, especially in contrast to the 'unlimited' digital realm of the 'pro-sumer'. And it is important to note we are no longer bothered with 'how' we produce anything. This is because 'how' was the preoccupation of the efficient deployment of capital, and capital has been superseded by 'debt', which like the digital has no limits.

Regardless of the conditions in which art and design education lurch from crisis to crisis, the activity of design remains a serious practice. Ettore Sottsass warned long ago that design has deep and durable ethical and political dimensions, and requires knowledge and consideration of our relationship with each other and the world we are changing (our anthropological condition), because while the affect of design can be short-lived it can also last a very long time (Sottsass, 2002). In the alter-modern condition, educating the designer might best be considered as 'getting things done' with scepticism of the discipline as a healthy form of self-doubt about design activity emerging from a blurred disciplinarity – an alterplinarity. And to explain how, we need to reflect on the changes to the 'conventional/historical' disciplines to the state we currently find ourselves – the alterplinarity state where 'conventional/historical' distinctions are irrelevant and unimportant – where new forms of knowledge and

processes are emerging for design pursuits; a state where historical and traditional ways of doing things hinder progress (Feyerabend, 2010).

Disciplining Design

The function and character of disciplinarity is highly relevant in design education, and many authors have investigated a variety of disciplinary perspectives across a wide range of design activities including interaction design (Blevis and Stolterman, 2008), architectural design (Rendell, 2004), and engineering design (Tomiyama *et al.*, 2007), and Dykes *et al.*, (2009), developed a new disciplinary framework for emerging forms of design practice. One aim of this new disciplinary framework was to facilitate better the location and delineation of activities and outputs within emerging types of design practice, research, and education.

When we get to the fragmentation/dissolve/blurring of disciplinarity, there is considerable debate, not about the efficacy of collaboration, but about the autonomy and co-operation of the disciplines. The first international conference for interdisciplinary studies was held over 40 years ago in 1970 at which Erich Jantsch (Jantsch, 1972) presented a set of hierarchical terms to describe forms of collaboration that involve alternative disciplines (Klein, 2000). This framework is cited several times in key texts concerning knowledge production across disciplines and Jantsch is most commonly associated with the currently popular term transdisciplinary, which emerged during the conference (Klein, 1998). Jantsch's framework (1972) was intent on providing specific characteristics that discern the terms, thus making explicit the form of co-operation in question. This hierarchy begins with multidisciplinary, the simplest form of work proceeding the single discipline, and then proceeds with pluridisciplinary, crossdisciplinary, interdisciplinary and transdisciplinary. Each term relates to the structure and complexity of group work across disciplines in a hierarchical fashion (Stein, 2007). These terms are commonly used outside this framework. For example, interdisciplinary is often used in an unspecific manner and has become a common term for general collaboration across disciplines, and crossdisciplinary is often used in adjectival form to describe movement between disciplines (Kötter and Balsiger, 1999). Consequently, the terms are often confused and not solidly defined within literature. Since this original disciplinary hierarchy there have been many attempts to distinguish between the terms (Gibbons *et al.*, 1994) and therefore a variety of different interpretations have

developed across different disciplines. Leinss (2007) brings the framework into design practice through case studies describing a variety of design teams and Nicolescu (2005) offers clear examples of the terms in a generic disciplinary sense. Here we find that pluridisciplinary is rarely used. For example, Gibbons *et al.* (1994) place multidisciplinarity and pluridisciplinarity at the same level and neither Stein (2007), Nicolescu (2005) or Leinss (2007) makes use of the terms. Zachary Stein (2007) argues that a major problem with the framework of Jantsch (1972) is not considering the individual's ability to work across disciplines and instead Stein proposes a disciplinary framework that is based on the competencies of the individual.

What is overlooked in this fragmenting evolution is that disciplinarity and its many variations is all about the individual observer. Historically, the practitioner was initiated into the discipline and only with mastery could collaborate with other disciplines, but that collaboration was not aimed at practicing a new discipline; it was aimed at strengthening the foundation of the discipline. The project of interdisciplinarity meant the individual learnt more about their discipline by observation. So we should consider further structural alterations in looking at what has happened to the integrity of the disciplines. The first of these is that the critique of interdiscilpinarity and its other fragmentary forms is impossible to conduct from a disciplinary perspective. This is because whatever doubts we might have about what has become of the discipline of design we have to be aware of the fact that disciplines are designed to perpetuate and domesticate doubt as healthy scepticism (Brown, 2009), producing a sense of belonging and submission to a set of regularised practices (Chandler, 2009), where expertise is internally unstable (Post, 2009). What that means is that from inside design we should be aware that we have to employ discrete tactics to first see and then analyse its blurring disciplinarity.

Stanley Fish, in an essay of the same title, argued that '*…being interdisciplinary is so very hard to do…*' (Fish, 1989) on the basis that despite having an historical core that cannot be ignored, disciplines are not natural, and their identity is conferred by relation to other disciplines making it impossible for an authentic critique. However, twenty years later in the ongoing debate around the disciplines W.J.T. Mitchell responded claiming interdisciplinarity '*…is in fact all too easy…*' (Mitchell, 2009), and he based his negation on a taxonomy of three different kinds of interdisciplinarity –

'…*top-down (conceptually synthesised), bottom-up (socially motivated), and undisciplinarity (anarchist) or what he calls lateral interdisciplinarity*…' (Mitchell, 2009). The first looks to frame an overarching system in which all disciplines relate, the second responds to emergencies and upheavals in disciplines, and the last is a rupture in the continuity of the regularising practices of disciplines (the disciplines disciplining the disciplines, or self-discipline). Wherever we might position ourselves in Mitchell's interdisciplinary taxonomies, I argue that the blurred disciplines cannot exist with the disciplines, so when design finds itself without discipline (un-disciplined) we need to find what exists.

The historic frame of entering a creative field meant that you were initiated into its mysteries, which you had to practice repeatedly leading to mastery. When collaborating with another discipline or disciplines the practitioner is contaminated by this contact (a culturally enriching necessity – Appiah, 2006) and learns to translate ideas leading to a healthy skepticism, or doubt, about disciplinarity. In the other setting of transdisicplinarity, where disciplines are no longer primary, the initiation gives way to intuition, guessing your way into the conversation, where the resulting derivation from the other disciplines is the insurance against changes to the disciplinary platforms. When disciplines break free of self-disciplining constraints, as in the case of alterplinarity the overwhelming derivation brought about by the ubiquity of the digital is transfigured. The guesswork required for transdisciplinary collaboration is replaced by ignorance – the state of not-knowing from which learning takes place. And not-knowing is important because the core framework can only be assembled as a temporary platform for each projection and should never become a platform that we say we know and can omit because it is known.

The safety or insurance produced by derivation as the current cornerstone of design action (a state that has allowed the word design to be attached to everything on the planet), has to be seen to be un-natural and instead of continuing to render imitations, misrepresentation becomes the means to assemble the design school in the alterplinary condition. This means that the disciplinary borders of design (the discipline of the disciplines) have become very porous so the 'idea' of design has almost eroded. And in that state, the educational project may well be the medium of manifestation for the ignorant designer attempting to apply design without discipline in the altermodern circumstance.

What I have attempted to illustrate here is the disciplinary dissolve of design and the relational response of the disciplines. Given that the global problems of the 21st century are increasingly complex and interdependent, and they are not isolated to particular sectors or disciplines it is possible that the design school might need to be 'undisciplined' in its nature (Mitchell's lateral interdisciplinarity). Moreover, there might even be a need for the graduate to be "irresponsible" because we need more playful and habitable worlds that the old forms of production are ill equipped to produce (Marshall and Bleecker, 2010).

Conclusion: The Discourse of Alterplinarity

The idea of an alternative disciplinarity, an *alterplinarity,* is a proposal; where the creative practitioner is viewed as a prototype of a contemporary traveller whose passage through signs and formats refers to a contemporary experience of mobility, travel and transpassing; where the aim is on materialising trajectories rather than destinations; and where the form of the work expresses a course, a wandering, rather than a fixed space-time (Rodgers and Bremner, 2011). And this idea is based on Nicholas Bourriaud's notion of the 'Altermodern' (2009). The fragmentation of distinct disciplines, including those located in traditional art and design contexts, has shifted design practice from being 'discipline-based' to 'issue- or project-based' (Heppell, 2006). This shift has emphasised and perhaps encouraged positively irresponsible practitioners, who purposely blur distinctions and borrow and utilise methods from many different fields. Therefore, it is logical to propose that the design school has to shift from being 'discipline-based' to 'issue- or project-based', and undisciplined and unknowing graduates will be best placed to make connections that generate new methods and to identify 'other' dimensions of creative research, practice and thought that is needed for the contemporary complex and interdependent issues we now face.

I am advocating that there is a responsibility on designers to be "irresponsible" in their work. Brewer (2010, 92) goes even further in his criticism of existing forms of knowledge production and claims that contemporary 'specialized forms of knowledge have become debased instruments of social control and discipline.' Moving towards 'undisciplined' practice and states of 'unknowing' in an age of alterplinarity therefore requires an epistemological shift. However, this will in turn offer us new ways of fixing

the problems the old disciplinary and extra-disciplinary practices created in the first place.

So the amalgam of vectors that since the Bauhaus have forced schools of design to revise their curriculum –postmodernism; the 'design studies' turn to appropriated theories; 'creativity' superseded by 'invention'; the positive attitude toward technology that laid the groundwork for digital reproductivity; and the pursuit of inter-disciplinarity challenge the future of the design school and the practice of design derived from globalised information flows and the spectacle of image making.

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