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All articles published in Studio Research have been double-blind peer reviewed.
This issue of *Studio Research* is, in many ways, long overdue. As noted in our initial instalment, issue “0” of *Studio Research*, this journal aims to satisfy the increasing demand for a peer-reviewed platform for all types of research that use the studio or workshop as a primary site of investigation. In the creative arts, the establishment of peer-review processes is imperative for creative-arts practitioners to achieve their due status in academe. What is heartening about the articles in this issue is the variety of disciplines they encompass, and the very different research approaches each author adopts, not to mention the range of the outcomes produced. Suggesting that this heterogeneity is a positive outcome assumes the proposition that each original research project in the creative arts possesses uniquely distinctive characteristics while simultaneously satisfying a consensus for rigour and quality that can be tested by peer review and judgement. Asserting the claim “reviewed rigour and quality” is problematic in that it seems to automatically refer to the research in the studio, whereas it often refers to the quality and rigour of the writing about, or writing in relation to, that studio research. When this is the case, it contradicts the peer-review process employed in the sciences, whereby the measures of rigour and quality are judged to be extraneous to the report writing. In science, there is an almost exclusive focus on the experimental apparatus and protocols followed by the researcher. This leads to a vexed issue in the creative fields that is not even a possible question in the sciences: can there be successful research with the production of a poor outcome (i.e., bad art)? This is something we will confront in a later special issue of *Studio Research*.

Many in the humanities decry the acceptance of science as the platinum standard for research, but such protests usually prefigure fruitless claims for special consideration. The affinity between art and science is historically sanctioned and creative thinking is the defining feature of both. Thomas Kuhn famously noted that for a scientist to instigate a revolutionary change they had to think as an artist does. This assumes that the periods of productive crisis in science that created the “essential tension” for change represent the constant condition for creative artists. Kuhn was not referring to either the idiot savant or intuitive genius model of the artist who both begin with a blank slate. On the contrary, there are too many competing options for artists in a field without a ruling orthodoxy. In Kuhn’s science model, a new paradigm takes hold after a period of crisis by displacing the old, whereas in art or philosophy, the old competing paradigms or schools live on, slowing progress through their compounding weight. Artists are literally spoilt for choice. As Kuhn noted, scientists can concentrate on the most esoteric of phenomena without constantly worrying about re-examining the first principles of their discipline. Artists are not granted this privilege, given that the very definition of art is constantly contested. Apart from an acceptance of established precepts, the other related advantage that science researchers have over those working the creative arts is the peer-review protocols that isolate and insulate the discipline, which Kuhn described as “the unparalleled insulation of mature scientific communities from the demands of the laity and of everyday life”. This exclusive isolation makes it possible for individual scientists to select any problem they believe can be solved regardless of any other considerations. Kuhn also uses the point to explain why scientists hardly ever bother to defend their choice of a research problem, whereas social scientists almost always take pains to justify their research focus, often on instrumental grounds. The same insecurity is often found in creative arts research; it has become almost an obsession to explain the importance of one’s research by framing it as a question.
Fifty years after Kuhn’s book first appeared, and in the face of environmental degradation through global warming and related impacts, his claims for a disinterested approach to science might seem as anachronistic as the attempts by leading theorists in the arts from that period, such as Clement Greenberg, to maintain an autonomous role for art. If this is the case, it only reinforces the fundamental importance of Kuhn’s insights since the knowledge of global warming is the product of “scientists working for an audience of colleagues” rather than listening to any group of special interests.\(^5\) Greenberg’s promotion of reductive abstract art as a privileged aesthetic antithetical to popular kitsch looks less anachronistic given the current revival of interest in the “aesthetic function of art”.\(^6\) Michael Kelly has recently suggested that the anti-aesthetic stance of recent decades, in both its postmodern and relational manifestations, is in fact a mask for a “hunger for aesthetics”.\(^7\) The current regeneration of aesthetics and its regular coupling with ethics and politics is significant in any discussion of the degree to which artists should be concerned with lay approbation of their creative work.\(^8\) In cases where a work of art is the agent of moral or political critique, it is hardly likely that it will meet the demands of laity or the sanction of the state. This returns the discussion to the need for art to closely parallel the situation in science, where the judgement of peer consensus is exclusively esteemed.

Every artist who has spent more than a year in a contemporary art school has felt the centripetal pull of the core and seemingly contradictory beliefs in the autonomy of the artist and in art as a unifying collective expression.\(^9\) The majority of artists, including those committed to a relational aesthetic, accept that art is an autonomous sphere of production, at least in the sense that their role is not to work “for the particular taste of a narrow circle of art-lovers”.\(^10\) The vehemence with which this situation is denied by professional artists often measures the certainty of its truth. Nevertheless, in art, as in science, the everyday popularity of the outcome of creative work counts for nothing when measuring quality, originality, and criticality. If George Dickie’s institutional definition of art still had unassailable currency, it could be persuasively claimed that the “Artworld” could indeed define the conditions for practice and the value of production.\(^11\) Clearly, the various entities involved—such as the art market, the art blogosphere, the museum world, art publishing, and academe—do not make up a coherent collective. Indeed, the only element in this Artworld that can lay claim to disinterest is the complex of disciplines that make up the academic art sphere. Until relatively recently, this academic global village within the larger world of art consisted of sandstone citadels of text-based erudition, not so isolated from the top end of the market, and the many workshops that accredited the next generation of artists and artisans. Today, the academic art world is far more monolithic in its structure, but also much more diverse in its connections with the larger global art networks. The graduates from academe in the creative fields are more likely to enter vocations as curators, arts administrators, educators, and arts writers than they are to enter a private studio. Given the increasing power of academe within the Artworld, it is fitting to reflect on Kuhn’s observation about science—that “there are no other professional communities in which individual creative work is so exclusively addressed to and evaluated by other members of the profession”.\(^12\) To what degree we emulate or challenge this approach of our sovereign sister discipline in academe is a moot point but there is no question that those in the creative arts must continue to develop critical engagement with their peers, especially in promoting protocols to measure quality and rigour.
Studio Research will continue to engage these debates while remaining focussed on its primary aim to contribute to the enlargement and refinement of practice-based research through disseminating the critical thinking inherent in creative work.

Ross Woodrow  
Executive Editor  
Studio Research

ENDNOTES


2 Kuhn, Structure, 162.

3 Ibid.

4 So prevalent is this attempt to give creative research an instrumental outcome, it seems anyone walking into a university gallery today will surely be daunted by the prospect of being swamped by answers to every possible question around well-worked areas, such as landscape, place, identity, memory, or materiality.

5 Kuhn, Structure, 163.

6 This phrase is taken from the title of Gary Iseminger’s stolid but carefully argued text, The Aesthetic Function of Art (Ithaca: Cornell University Press, 2004)


8 In addition to the Michael Kelly and Jacques Ranciere texts quoted here, see Francis Halsall et. al., eds., Rediscovering Aesthetics (Stanford, CA: Stanford University Press, 2009).

9 For more on this paradox, see Jacques Ranciere, Aisthesis: Scenes from the Aesthetic Regime of Art (London: Verso, 2013), 15.

10 Ibid.


12 Kuhn, Structure, 163.
This paper is a dialogue—or, a slice of ongoing dialogue; a kind of fight in progress—between the authors.

Some background material:
1 Mark is a practicing artist. Cameron is a design theorist. Mark is committed to the significance of art, Cameron to the significance of design.
2 Mark and Cameron were, for a long time, colleagues in a design school. Design is a relatively recent profession and not yet a discipline. Design schools tend to be either the technical, commercial embarrassments of art colleges, or the soft, aesthetic embarrassments of technology institutes. Because of its precarious emergent status, design has a defensive enmity with art.
3 What brings Mark and Cameron together, and puts them in dispute, is Heidegger and post-Heideggerian thinking. Both Mark and Cameron find in Heidegger a relational post-aesthetics of "making think-work" that clarifies and furthers their attempts to respond to the dominion of technological metaphysics. It is just that Mark believes that this ‘remembering-clearing’ lies on the art side of the art/technology divide whereas Cameron believes that it lies on the technology side.

The following dialogue is a vehicle for us to propose some of the ideas that we are working on. For Mark, this is making expanded paintings, for Cameron, making engaging things.

Apart from the pragmatic institutional issues hinted at above, what is at stake in our debate? Perhaps everything; that is to say, if you believe Heidegger, at stake is the future of human beings in the face of technology’s cessation of history.

The issue that always troubles readers of Heidegger on technology is: if the essence of technology is its totalising nature, how are we to respond? If all causal reactions to technology remain technological, what is to be done?

We begin with the assumption that Heidegger is misinterpreted when cast as an apologist for acquiescence, a quasi-spiritual giving in to, or waiting for the end of, techno-being. For example, when Heidegger risks this sort of rhetoric around the term Gelassenheit, such ‘releasement’ requires much effort—one must be active in becoming passive. Less extreme, but more common, is Heidegger’s valorisation of thinking itself as a response to techno-being, in particular, the sort of thinking associated with questioning. As is often noted, the opening line of his essay “The Question Concerning Technology” italicises the verb ‘questioning’: “In what follows we shall be questioning concerning technology. Questioning builds the way” (Heidegger 1977, 3). And the essay concludes,

The closer we come to the danger, the more brightly do the ways into the saving power begin to shine and the more questioning we become. For questioning is the piety of thought. (Heidegger 1977, 35)

However, on these occasions, Heidegger’s concern is still for a thinking that is ‘in action’. Such questioning is not a removed, inactive contemplation, but rather an engaged responsiveness. It is, as we will argue, very much with and of the process of making. This is precisely Heidegger’s point; he aims to retrieve a form of making—of thoughtful making, of making thoughtful—that is no longer merely technological. He does not deny the activism of technology, but finds within it more authentic forms of revelatory action. This is why the closing sentences from “The Question Concerning
Technology” previously cited occur in the context of a discussion of art. Let us cite this passage at length, because it is the concern of the following debate:

Because the essence of technology is nothing technological, essential reflection upon technology and decisive confrontation with it must happen in a realm that is, on the one hand, akin to the essence of technology and, on the other, fundamentally different from it. Such a realm is art. But certainly only if reflection on art, for its part, does not shift its eyes to the constellation of truth after which we are questioning.

Thus questioning, we bear witness to the crisis that in our sheer preoccupation with technology we do not yet experience the coming to presence of technology, that in our sheer aesthetic-mindedness we no longer guard and preserve the coming to presence of art. Yet the more questioningly we ponder the essence of technology, the more mysterious the essence of art becomes. (Heidegger 1977, 35)

The appropriate response to technology is therefore not just philosophising, but thinking in and around the making of that which we call art. According to Heidegger’s analysis, such making think-work appears to be a non-technological way of negotiating technology.

To return to our debate, we, the authors, are interested in how literally Heidegger should be read here. Does ‘art’ mean Art, works for the institution of art, or the Ars of Design, products for the economy of design? Which of these is less unthinking in its making, which is more thoughtful or thought-provoking? Moreover, which is the more appropriate action in response to technology, which is nearer the potential for swaying the way of the world and therefore more able to accomplish a turn in our experience of being?

What is at issue in this debate between Mark (hereafter M) and Cameron (hereafter C) over Heidegger—for this paper, and for the debate about practice-based research in which it is taking place—is the role and nature of making in such thinking. Is the questioning of art that Heidegger is calling for a considered analysis of the artefactual outcome, the finished artwork or design product, or is it a critical reflection on the process of making? If the outcome is an artwork for interpretative reception rather than a design for enactive use, how does this affect the question-worthiness of the process of making? For, surely, if the process of making is a type of research, a way of discovering knowledge, then it is thoughtful in a way that ignorant technology dangerously is not. Such research-ly making reveals exactly what technology conceals. To work out how making is a bringing-to-knowledge identifies not just why there should be a validation of practice-based research but also, in the context of Heidegger, identifies a non-technological form of making. This is why we are fighting over which form of making—art or design—is the most significant, as research, and as the saving power within the eclipsing empire of technology.

C: What is most common in Heidegger’s range of articulations of what is to be done is the constellation of techne, poiesis, physis, and aletheia. The essence of technology derives from its origin in the ancient Greek sense of techne, the know-how associated with poiesis, which Heidegger believes is a mode of revealing, aletheia, compatible with the model for revelation, physis.

This is, in some ways, the first half of “The Question Concerning Technology”; poiesis is the four ways of occasioning . . . [that] let what is not yet present arrive into presencing . . . It is of utmost importance that we think bringing-forth in its full scope and at the same time in the sense in which the Greeks thought it . . . Physis also, the arising of something from out of itself, is a bringing forth, poiesis. Physis is indeed poiesis in the highest sense . . . The Greeks have the word aletheia for revealing . . . Techne is a mode of aletheueuin . . . Technology is a mode of revealing . . . And yet the revealing that holds sway throughout modern technology does not unfold into a bringing-forth in the sense of poiesis. The revealing that rules in modern technology is a challenging. (Heidegger 1977, 10–14)
The second half of “The Question Concerning Technology” suggests that a response to technology involves recovering the poietic techne that remains with/in technology as challenging-forth.

So, if the techne of poiesis affords a way of being with, without succumbing to, techno-being(lessness), how are we to translate these Greek terms? Should we understand the techne of poiesis to be the making associated with artwork or designing?

M: My side of the argument is perhaps more straightforward since Heidegger does explicitly and frequently suggest that techne be translated as ‘art’. For example, in “The Question Concerning Technology”, he writes:

There was once a time when it was not only technology alone that bore the name techne. Once there was a time when the bringing-forth of the true into the beautiful was called techne. Thus the poiesis of the fine arts was also called techne . . .

Could it be that the revealing lays claim to the arts most primarily, so that they for their part may expressly foster the growth of the saving power, may awaken and found anew our look into that which grants and our trust in it? (Heidegger 1977, 34–35)

Heidegger makes it clear in “The Origin of the Work of Art” that there are two aspects to art’s way of revealing that differentiate it from technics.

The first is that the work that works of art accomplish is the founding of worlds. Technology reveals, but reveals things to be in a profoundly unworldly way. What works of art reveal are precisely other worlds, other ways of being, other clearings in which humans can dwell. They do not just reveal these worlds temporarily, they find and establish them in a sustaining way. By contrast, technology finds nothing but a generic something to be transformed into anything; it heeds no prior essence that might be holding sway, not even the outcomes of its own manufacturing, which it will recycle as an energy source just as soon as they are completed.

More significantly, what keeps art from being subsumed into technics is that what art reveals are concealments. What art brings to the world is what Heidegger calls ‘earth’, that is, that which precisely resists being brought to the world. Earth ‘shows’ itself to be inherently self-secluding. Art points to what cannot be revealed. It does not reveal these secrets so much as reveal that there are secrets, and so they must remain.

These concealments are material, and historical; they are what one senses as lying beyond, as other possibilities. They have to do, quite precisely, with the making of the work of art, the origin from which the artefact springs or breaks out. These earthly qualities are what cannot be completely accounted for in any reflection on practice, what one glimpses only when one attempts to carefully and thoroughly articulate the materialist history of a work of art’s making.

This is why, I would suggest, Heidegger insists that these hints of a hidden ‘always more’ arrive only as “strife”, as a conflictual resistance to the drive toward open disclosure, which Heidegger calls the ‘world’.

In aesthetic terms, ‘earth’ and ‘world’ are similar to notions of form and content but are each developed in an extended phenomenological sense in their application to works of art. Earth identifies both the material aspect of the work, what it is made of, and a certain tendency within earthly natural things to withdraw, to hide, to be elusive for understanding and articulation. Similarly, world is not just the totality of objects and events but is closer to an environment that surrounds us as a matrix of meaningfulness. Nor can earth and world be considered separately; each is inextricably woven into the other. Earth must come through the world to appear at all, and the world must rest on the earth and be constituted by it. Both are aspects of disclosure, are part of an uncanny showing, the creation of an open space where something, some thing, can come to be. In their strife, each tries to absorb or eclipse the other; the world tends to forgetfully consume earth and ground, while earth draws the world back into its own entropy, to de-historicise and de-contextualise. Their conflict is irresolvable and leaves a permanently open wound, but this wound, this scar, is the very pre-condition for a
gestalt, a shaping, that brings the work as a work into presence.

Encountering a work of art, one first catches sight of earth through the material presence of the art form, whether it is the colour of paint, the heaviness of marble, or the sound of music. Similarly, by virtue of the conflictual union, the background nature of the world is brought forward and opened up, the world is disclosed. The revealed world is an historical world, delimited by the kinds of decisions and inchoate possibilities that each age defines for itself. Heidegger suggests four ages: Greek, medieval, modern, and planetary. Planetary is dominated by technology and would coincide to some degree with postmodern globalisation. As Heidegger suggests, the essence of technology is nothing technological; its essence is technicity, a mode of relations between all kinds of beings that reduces them to mere resources for production, machination, and consumption. Yet, technicity is not to be rejected outright, since it contains the enduring riddle of our age. It is this riddle that art reveals, indicates, and instantiates. Art’s enduring strangeness, its uncanniness in the midst of the demand to be instrumental, is the revelation of a riddle.

To make this more concrete, I would like to discuss an example of my own work. In Moraine (2006, figure 1), a wheelbarrow spills a load of flowers onto a white carpet. The work was conceived in the context of a series of paintings that were made by pouring or spilling paint onto a horizontal sheet of aluminium. The aluminium works were made as explorations of alternative materials that could be used to make a painting. Specifically, canvas is replaced by metal, brushes by cake mixing bowls, and images by aleatory events. The play of ongoing substitution was extended through the cake mixing bowl and paint to the wheelbarrow and a load of flowers. Wheelbarrow and bowl, paint and flowers, carpet and canvas are syntagmatically connected and

Figure 1 Mark Titmarsh. Moraine 2006, flowers, synthetic flowers, wheelbarrow and carpet, variable dimensions. Photographer: Arthur Georgeson.
ultimately perform the same function of delivering a load of colour to an impenetrable surface.

The work exists in an unusual tension between what it is and what it is not. Painting is present as an absence, a visual absence substituted by smells, fragrances, metaphors of painting. The work projects the smell of fresh flowers so intensely that it touches the nose and all the senses of those who enter the gallery. The flowers, like a painting, are intensely colourful, and, in this case, synaesthetic, giving sight and smell. Synaesthesia becomes a metaphor for inter-dimensionality in the work, an overflowing of aesthetic and physical boundaries.

The earthiness of the flowers and the technological products of wheelbarrow and carpet are brought together by a spill, an industrial accident, a loss of utility, and, ultimately, a spontaneous display of colour. The wheelbarrow, like a broken tool separated from the smooth flow of usefulness, suddenly stands out, showing the unusual shape of all its all elements, the difference between its rubber handle, metal legs, and plastic tray. One notices that the carpet is unusually placed to receive the entire spill—none has gone over the edge. The spill as an event of chaotic proportions is curiously aesthetic in its relation to all the other elements. Yet, both the barrow and the carpet are distillations of earthly materials, now curiously exposed in the artificially lit interior and the conceptually lit domain of art.

On closer inspection, the flowers are a mixture of fresh flowers, synthetic flowers, and native flowers that have been tinted to intensify their natural tones. All the flowers are heads, severed from their storks and any obvious supply of sustenance. As they die and wilt, they demonstrate their liveliness as opposed to the static endurance of the barrow and carpet as techno presences.

C: While what M has said about Heidegger is clearly true—like a good romantic, Heidegger does invest much faith in art as powerful respondent to technology—it is important to acknowledge that there are at least three caveats that Heidegger himself puts in place.

1 The ancient Greek arts “were not enjoyed aesthetically. Art was not a sector of cultural activity.” The art that is being spoken about is ontological precisely to the extent that it refuses our current “sheer aesthetic-mindedness” (Heidegger 1977, 34). M’s self-description of Moraine and its making clearly demonstrates the extent to which his work explicitly engages with, if not utterly depends on, a certain ‘aesthetic reception’. I will return to this.

2 The art that is capable of challenging technology, which can found worlds by drawing on concealed material creative forces, is not just any work of art, but only ‘Great Art’. Again, M touches on this when acknowledging the centrality of history to Heidegger’s understanding of art. And it can also be seen in the extent to which Moraine involves in its making and intended reception an agon with the history of art. Nevertheless, the question remains whether these elements manage to push beyond institutional place-markers (in which case they would be susceptible to the previous critique of the ‘culture industry’) in order to found or at least attest to a wider new ‘way of the world’.

3 If techne-as-art can only be understood as Great Art, there is more than a chance that such Art is a thing of the past, something that existed “perhaps only for that brief but magnificent time” (Heidegger 1977, 34).

This is why Heidegger does not say that art is the appropriate response to technology, but only that it may be: “Whether art may be granted this highest possibility of its essence in the midst of the extreme danger, no one can tell” (Heidegger 1977, 35).

Because of these caveats and doubts, I think that it is important to consider what other pathways to dealing with technology might exist. Perhaps what Heidegger means by techne is better conceived as the sort of making associated with design.

I am already at a disadvantage in arguing this way since this Latinate term (Old French dessein, to draw; Latin signare, to mark) is one that Heidegger does not and would not use. Heidegger uses terms that can be productively translated by the English word ‘design’, but he is referring to a more abstract process of laying out possibilities or throwing forth (‘Entwurf’) rather than the process of planning the making of things of use.

My side of the debate, therefore, depends on a more-Heidegger-than-Heidegger type of argument.
I will mention two main aspects of this argument, both of which are usefully captured by Heidegger’s famous use of Friedrich Hölderlin towards the end of “The Question Concerning Technology”:

The same poet from whom we heard the words
But where the danger is, grows
The saving power also
says to us:
. . . poetically dwells man upon this earth.
(Heidegger 1977, 36)

Let me start with the second fragment first. Exegetes usually emphasise the adverb poetically when discussing Heidegger’s use of this phrase. This aligns the saving power with language and thought, concerns of the later Heidegger, and philosophy in general. However, drawing attention to the verb dwell not only fits with Heidegger’s later work but also his earlier existential analytic of Dasein. It also locates the saving power in the things of everyday life, in the pragmata and chremata of daily living. This is the much less metaphysical locale of design, of designed things, and design interactions with things.

It is important to remember that things are the ontological indicators. Ontologies are defined by how things manifest, by what counts as a thing to the peoples dwelling with and through those things. This is why the “Question Concerning Technology” was originally the third of four lectures, the first of which is “The Thing”. Read together, these lectures indicate that the crux of technics is its denial of things in their thingliness. The most famous expression of this is Heidegger’s account of nuclear weapons: “The atom bomb’s explosion is only the grossest of all gross confirmations of the long-since-accomplished annihilation of the thing: the confirmation that the thing as a thing remains nil” (Heidegger 1971, 170).

Design then, the design of everyday things, is a fitting response to techno-being.

Art, as the “Origin of the Work of Art” makes clear, also manifests as things, but, for essential reasons, as no ordinary things. Works of art are very precisely more-than-things, things that allegorically transcend their thingliness. This pretentiousness or immodesty means that art’s response to technology is always excessive. It is rather “here and now and in the little things that we may foster the saving power in its increase” (Heidegger 1977, 33).

Let me clarify this further by taking up M’s self-description of Moraine.

It is clear from the account of Moraine’s making and presentation that M was at all times seeking some sort of revelation from this constellation of products. He was not seeking some sort of representation; indeed, Moraine is not the depiction of anything. It would be quite inadequate to say (though M’s talk of metaphors that make painting presently absent do risk this) that it is a representation of painting, or even just M’s painting process, in non-paint media.
The rug is not a sign for the canvas, nor do the flowers represent the smell of drying paint. These things are not signs because they reveal too much of themselves to be merely referential. They singularly and together become presences, showing themselves to be, each in different ways. What shines in the work, beyond its reading as an installation-based portrayal of painting, is a question about how things manifest. Clearly, something ontological is going on here.

However, to what extent is this ontologicality circumscribed by occurring as art? Are the questions that come to those who view M’s work, concurring with M’s own account, questions that will to any extent trouble those viewers? Do these moments of insight into ‘how things are’—that do seem to be involved in understanding Moraine—have any sustainability? While these are very designer-ly questions of effectivity, they are crucial if we are to take seriously what Heidegger says about the *historical* nature of the revelations needed in the face of technics. Does M’s work world beyond the artworld? Is there sufficient earth-ness to the way this installation has been staged in a gallery setting for the questions that the work asks to become questions of other things elsewhere? Or is this work just turning such revelations into a game, an amusement, a distraction? Is not this making-being-appear-pretty-and-witty quintessential *Gestell*—not in the sense of making all available for use but more seriously in the sense that *Gestell* is the frame that excludes all other ways of being present? If this work does draw attention to a non-productivist-being-there, doesn’t it do so precisely in the sort of way that says that such being-otherwise is now only the remit of a museum, a marginal domain of practice soon to be a thing of the past? Doesn’t it attest to the abandonment of being to questions of ‘is this or is this not art?’

Surely, all that M has revealed of this work’s making would have been better incorporated into a commercial product-of-use. A flower-coloured wheelbarrow, a wheelbarrow impregnated with the smell of flowers, for sale in a hardware store, or even more so, in use on a building site, would be far more uncanny and question-worthy than an art piece. In its everyday use, in use in workday settings, it would be much more powerfully (and not just much more frequently and pervasively) uncanny. Getting it sold would be quite properly a design problem, but successfully resolving that design problem would have more direct and longer-lasting, world-making outcomes. No longer delimiting itself to questions of art history, it would be freed to afford wider history making.

M: I take C as posing here the idea of marginal objects that are not-quite-art and not-quite-designed-things-of-use. Marginal objects furtively seek to survive in sequestered spaces somehow outside of global capitalism and the levelling effects of *Gestell*. But, for the moment, design, unlike art, is not empowered to produce the marginal, since it lives only in the harsh light of instrumental production and consumption. In such a context, design is the very discipline that completes the withdrawal of things. The thing, or any object of production, disappears in the hands of a consumer because its soft embodied presence is completely eclipsed by the productivism of use.

Design as a professional practice only came into existence with the flourishing of the machine age at the beginning of the twentieth century. Since then, the task of design has been as the slick facilitator and mediator of gritty production and consumption. Design is nothing more than the sugar coating of techicity, the cool cosmetic layer that conceals the ‘set up’ and makes destructive things apparently digestible and the disappearance of things intensely desirable.

Alain Findeli captures the essence of design as being determined by instrumental reason, over-emphasising the material product, as having an aesthetics based exclusively on material shapes and qualities, an ethics originating in a culture of business contracts, a cosmology restricted to the marketplace and a sense of time limited to the cycles of fashion and technological innovation. (2001, 6)

While art must also function in the marketplace and is inevitably dealt with as a commodity, its thingliness is always in play. As a thing, it continually reminds us of the work of the work of art, which is the ongoing eventful strife between earth and world. Ziarek writes,
Art as an aesthetic object . . . is obviously formed and produced and thus already predisposed for commodification but as a forcework it opens the different modality of an event, irreducible to product. (2004, 15)

The history of the avant-garde and contemporary art of the last century has been the reduction and abolition of art’s status as a commodity and foregrounding of its nature as an event, from futurism and dada to happenings, fluxus, conceptual art, installation art, and relational art.

The shift from object to event necessitates a reconsideration of art’s relation to commodification and exchange: since art resists or ‘objects’ specifically by refusing to be an object, the most important aspect of art’s social relation is the dissolution of the related logics of the aesthetic object and the commodity. (Ziarek 2004, 105)

The art market tends to counteract this process but that is as it should be. The art market continually reminds the artist of the tension between economic productivity and the disclosure of worlds.

C: Heidegger is very explicit about the fact that poiesis not be translated by a manufacturing term:

> What is decisive in techne does not lie at all in making and manipulating nor in the using of means, but rather in the aforementioned revealing. It is as revealing, and not as manufacturing, that techne is a bringing-forth. (Heidegger 1977, 13)

Consequently, techne is not manufacturing, what Heidegger in “Contributions to Philosophy” calls more generally “machination” (Heidegger 1999, 88). But this point usefully clarifies what I mean by design, as distinct from fabrication. In the quote cited above, the “aforementioned revealing” refers to the following:

> Whoever builds a house or a ship or forges a sacrificial chalice reveals what is to be brought forth, according to the perspectives of the four modes of occasioning. This revealing gathers together in advance the aspect and the matter of ship or house, with a view to the finished thing envisioned as completed, and from this gathering determines the manner of its construction. (Heidegger 1977, 13)

This Platonic-Aristotelian account of techne is in fact a rich description of design, or designing as thoughtful forethought or foresight. This is precisely why design is a mode of revealing, a mode of revealing in the lineage of ancient Greek techne, within the heart of modern manufacturing.

And for the same reason, I am unconcerned by M’s suggestion that design might be at the very heart of technology. Here I am returning to the first of the two Hölderlin quotes to make my second main point about why design might be best response to technology.

For, the quote indicates not that the danger lies near the saving power but that the danger is itself the saving power. In a way typical of Heidegger, the very acknowledging of technology as a danger is the way of saving oneself from the danger. The turning is a turning within technology, not against it, or outside it. Heidegger is advocating a kind of homeopathic remedy, more of the same, once one realises that there is a difference within that sameness, the difference between design and machination, between techne and technology.

Design is the way that moments of insight can be prompted where technology is most at home, small turns within sheer instrumentalism that afford questioning, if only now and again.

By contrast, art is not similar enough to technology. It involves a very different comportment, an un-use-ual disposition. Art today is, to my mind, still too bound to aesthetics, to the aesthetic mode of reception. It still requires a Kantian disinterest to be made, to be understood and to have valence. This is what disengages it from the danger, placing it at a remove, especially, but not only, when it exists in the protected economy of the gallery.

To this extent, art remains a thing of the past. M: Even Heidegger allows for the possibility that one day Great Art might return and that such a return would constitute a saving of the world.
Figure 2. Anthony Dunne and Fiona Raby, Compass Table 2001, wood, instrument glass, 25 compass needles, 75 x 75 x 35cm. Photographer: Jason Evans. Courtesy Dunne and Raby.
Though Heidegger appears to affirm Hegel when he suggests that Great Art is a thing of the past (Heidegger 2002, 205), it cannot be extrapolated to argue that the present age is entirely artless. Great Art has a very specific meaning, referring to art that played an overtly fundamental role in the life of a culture. Great Art defined cultural rituals in early societies and social hierarchies in pre-modern societies. For Heidegger, the socially determining aspect of art disappeared with the Greeks, while, for others, it was lost somewhere between post-medieval art and pre-modern art. Great Art is equated with pre-modern art and anything after that is lesser art, art that is simply designed to generate a personal aesthetic experience. However, from modernity onwards, art becomes something more indefinite and elusive, something that proceeds by silence rather than public proclamation. In “Origin of the Work of Art”, Heidegger discusses a work of modern art, a painting by Vincent van Gogh. He proposes that a work of art discloses a world. The question remains whether all art has the potentiality of disclosing a world or whether only Great Art can perform that function.

Krystzof Ziarek substitutes Great Art for ‘radical’ art. He concedes that art has lost its “force and importance”, and appears to have been replaced by the “entertainment industry and information technologies” (2004, 1). He continues, “Artworks when compared with social, political or even physical forces lack any effectiveness in changing reality” (Ziarek 2004, 3). The powerlessness of art to effect change outside of its own limited domain appears conclusive. But ‘power’ is defined in the limited terms of technicity. Art’s power, its power to reveal, its ‘forcework’, is neither powerful nor powerless, but powerfree.

Art discloses an alternative to the paradigms of production, mobilisation and technical manipulation. . . . The ‘less’ in the adjective ‘powerless’ when attached to art does not necessarily mean lack of power but instead indicates an alternative economy of forces . . . . Though art like everything else is produced and regulated within the power driven economy of modern being, art can become disencumbered of the governing configuration of power and open an alternative modality of relations. (Ziarek 2004, 3–4)

Ziarek’s term for this kind of power is ‘aphetic forcework’, aphetic from aphesis, which means releasing, letting be, letting go.

Art can have such a transformative effect only in a specific kind of reception, when the artwork is encountered as a work, that is, non-aesthetically, which means that, beyond its aesthetic commodity form, art is allowed to work. Thus the transformative work is itself a relation, an encounter with an artwork in which this work transforms the web of social political and cultural relations with which both the work and its reception take place. Art’s transformation works not on the level of objects, people or things but in terms of the modality of relations, which in the forms of perception, knowledge, acting or valuing, determines the connective tissue of what we experience as reality. (Ziarek 2004, 28)

C: I have this suspicion that the model power-free artwork for Ziarek, and perhaps Theodor Adorno, would be one in a vault, concealed from view. It is of course typically instrumentalist to ask after ‘bum’s on seats’, but Ziarek’s aphetic artworks attest to the possibility of a world outside eco-technics, only if testifying before someone. I worry that it is not just Great Art that is a thing of the past, but art itself, contemporary art being invisible except to those with appropriate levels of cultural capital to make it their pastime. Given the giganticism of techno-being’s imperialism, surely the appropriate response needs to be more strategically located if not pervasive.

Let me give a short example to compare with M’s account of his own work. In the 1990s, Anthony Dunne and Fiona Raby developed a series of designs as articulations of research into electromagnetic radiation. These were relatively simple pieces of furniture, such as a coffee table with compasses set into it that would map electromagnetic fields and fluctuations in a house (figure 2). These devices, in quite obvious ways, drew attention to a key infrastructure of de-thinging technics. Electricity is the quintessential Bestand or standing reserve. It is something that
results from converting any sort of matter into energy (mostly via combustion, but even nuclear decomposition), and that can then in turn be used in the fabrication of any product. Electricity is the alchemical medium that allows any thing to be turned into any thing else, a medium therefore in which there are no things at all. This is no more dramatically evident than in the electromagnetic radiation emanating from any electrical device, though without designs such as Dunne and Raby’s this evidentiality is not evidenced.

Crucial for this argument with M is that the work that these designs do, the revelations they accomplish, can only take place in use. These are not museum pieces, but pieces that only work when lived with. To my mind, then, these are exemplary things that reveal injurious neglect of things through technology. Only by being in our midst and used each day, do they turn us, every so often, to the essence of our situation.

M: C’s commitment to agency is really a form of instrumentalism, a version of economic rationalism that justifies itself in terms of a readily measurable mass audience and appropriately calculable outcomes. He is compelled to manipulate a situation to get the most number of people in the shortest time to practice consuming in a certain way. This is absolutely essential in certain functional situations, such as creating a sustainable practice for industrialised societies. However, it is counter- productive to establishing an ethics or an ontology.

One of the definitions of art is that it has no practical use or is functionless. It is the uselessness of art that makes it immune to the instrumentalism of technicity. As Adorno writes,

By crystallising in itself as something unique to itself, rather than complying with existing social norms and qualifying as ‘socially useful’ it criticises society by merely existing, for which puritans of all stripes condemn it.

(Adorno quoted in Ziarek 2004, 41)

Within the art world, even the instrumentality of contemporary economics ceases to function. Most artists continue to make their work at a loss and finance it by cleaning, teaching, labouring. There is something of a pre-industrial gift economy at play here. Most governments validate the gift economy by accepting the special nature of art as something that needs to be preserved outside the market economy. They do this by nurturing art through ‘gifts’ from funding bodies and grant programs. Paradoxically, art also functions as a valuable commodity bought and sold on a global scale. There is a differential dynamic between art, artists, contemporary art, investment art, the art world, and the art market that defies the imperial drive of technorationalism.

It is its uselessness that makes art useful.

Art becomes socially “meaningful” precisely when it breaks with aesthetic and political functions that society establishes for it, when it alters the power formations that regulate society and that the society wants to stamp or project on to art works. Instead, what art inaugurates is a different force work, a different disposition of forces, which means that the relations they produce become disposed into a different mode of revealing and as a result the world unfolds differently.

The poietic force of art would consist, then, in an alternative, non-violent disposition of forces, which does not mean that art becomes blind to the “real” world or that it ends up in an escapist, aesthetic limbo, but rather it instantiates the “same and only world otherwise”. (Ziarek 2004, 41–42)

C and M: This debate between us is no doubt founded on an unsustainable binary opposition, if not asking the wrong question altogether. M’s critique of design targets the least interesting commercial designs and C’s critique of art targets the least interesting institutional works of art. If there is a responsive action to technics, it clearly lies in something like artful design or designerly art. The valence of the examples that we both use derive precisely from the interpenetration of art and design; M’s artwork with a wayfinding design, and Dunne and Raby’s designs with expanded artworks. And, of course, the ‘and’ in these kinds of ‘art and design’ should be the same ‘and’ that lies between earth and world; in other words, an
‘and’ signalling the belonging together of what is necessarily in strife.

However, this too-easy conclusion should not be considered glib. These couplings are placeholders for some significant questions to which our debate has hopefully drawn attention.

Firstly, there is the issue of aesthesis. If Heidegger’s historico-materialism is a post-aesthetics that can be exemplified in artful design and designerly art, it is not therefore a non-aesthetics, especially if aesthetics is taken in its original sense, as referring to the meaningful experience of things. If technology annihilates thingliness, then, whether it is art or design, the point is for us to recover an ability to sense things, to make sense of things. Aesthesis is therefore at issue, precisely because, due to Heidegger’s “Origin of the Work of Art”, it is no longer concealed beneath the metaphysical philosophy of aesthetics. The work of Jean-Luc Nancy offers a guide to responding to this question.6

Secondly, there is the issue of use. If art’s uselessness is nonetheless useful in revealing the technological condition, and if the use of a designed thing does not only lead to the withdrawal of that thing into ready-to-handedness but to the revelation of thingness itself, then we must develop a much more nuanced understanding of use. Heidegger indicated as much toward the end of his lecture series What Is Called Thinking? (1968) but it remains only a hint.

ENDNOTES


2 This is derived from Jean-Luc Nancy’s version of Gestell, ecotechnics. See, for example, “War, Law, Sovereignty: Techné”, in Rethinking Technologies, ed. Vera Andermatt Conley (Minneapolis: University of Minnesota Press, 1993).

3 A clear Heideggerian explanation of the essential relation between the techne of making and the consumerism of the ersatz is the chapter on “Work” in Hannah Arendt’s The Human Condition (Chicago: University of Chicago Press, 1958).


5 On Heideggerian ‘making history’ understood as practicable ‘world making’ rather than ‘world history politics’, see Charles Spinosa, Hubert Dreyfus, and Fernando Flores, Disclosing New Worlds (Cambridge, MA: MIT Press, 1997).

INTRODUCTION
In their responses to current discourses on intersubjectivity and alterity, contemporary artists have actively cultivated a sensitivity to difference through social, political, or ecological awareness. This heightened inclusiveness can be aligned with pluralistic approaches employed in the contemporary construction of ethics, incorporating contextual flexibility and emotional intelligence. Closely explored in feminist analyses, modalities intimately connected with the creative impulse embed relational ethics within the aesthetic imaginary. In this essay I align embodied, feminist, and ecofeminist ethics with accounts of virtue ethics applied to contemporary art practice in order to suggest that an ethical dimension is inherent in art’s conceptual and material resonances.

Feminist philosophers have proposed that generative psychic spaces, articulated by a fluidity associated with the feminine, can be used as ethical models. These creative modalities, which may function for all genders, form relational flows to complement and moderate the phallic economy. The critical psychoanalytical work of Julia Kristeva and Luce Irigaray provide a foundation for an ethics inclusive of affective and bodily imperatives. Ethical concepts are made increasingly sophisticated by the acknowledgment that subconscious fears and desires are projected onto our interpersonal and social relations, and require the vigilance of self-knowledge to moderate our responses (Oliver 2012, 129–30).

THE DIALOGUE OF PRACTICE
Kristeva’s approach to the individual’s dialogic relationships, which encompass both ethics and politics, is situated in intersubjective practices formed in “flesh, language and jouissance” and the bonds of love (Moi 1986, 185). As a subject-in-process, the individual assimilates the other, internalising strangeness so that interventions in the external world are receptive and questioning. This decentered subject can escape convention and solipsism through the liberating catalysts of music, poetry, and art. The aesthetic function is described as setting in play a “heterogeneous economy”, which fragments the hierarchies of symbolic and signifying unity. Kristeva emphasises the role this semiotic diffusion plays in producing new symbolisations through a “mechanism of innovation” (Kristeva 1984, 179–81). The semiotic is inscribed within language and its effects are made meaningful retroactively, after its eruption into the symbolic has been filtered into residues and traces (Chanter 1995, 184). Shifts in meaning occur at a subjective level, colour our relations with others, and eventually infiltrate ethical attitudes. Such changes stem from the dialogic nature of the processes initiating them, setting up an ethics of practice and engagement (Edelstein 1993, 200).

A concern for the mediation of practice is also central for Irigaray, whose ethics highlight intersubjectivity and the individual’s recognition of differences, which eludes the monotone of conformity. Irigaray sees all differences as exemplified by sexual difference, which is “an immediate natural given and . . . a real and irreducible component of the universal” (1996, 41). The transformation of relations between the sexes and between differences of ethnicity and advantage requires each to be recognised as a singular identity within a culture that allows the natural flourishing of all. Reconciling the particular with the universal does not mean a reduction to purely material values, such as money or property, or a retreat to abstract principles, but instigates an awareness of others beyond egoistic boundaries (Irigaray 1996, 41-51). This awareness requires communication that cultivates interactions of energy between human beings, maintaining an open exchange and reciprocity. For Irigaray, attentiveness is “a transition to a new dimension”, an acceptance that something unexpected may appear in the silence of receptivity (1996, 117).
Such attentiveness can be found in the experience of creating and viewing art, in the interaction of attention and response, which aligns emotion and thought. Creative practice initiates a communicative exchange, where meaning oscillates between the lived experience of the artist and audience, interweaving sensate and cognitive understanding through the mediating space of the work of art (Robinson 2006, 86). Communication through art is subtle and complex, broad ranging as well as fine grained; as Nelson Goodman remarks, it “is restless, searching, testing—is less attitude than action: creation and recreation” (Goodman 1981, 242–50). The mobility of aesthetic interaction and engagement is realised through the dynamic of a rigorous practice, producing an intersubjective flow that nurtures ethical awareness.

Identifying an ethical value in art presupposes a willingness on the part of the viewer to exercise flexibility and curiosity in their engagement with the work. Those looking exclusively for reflections or affirmations of their own experiences or beliefs will have a limited or negative response to a work of art that evokes the unfamiliar. The simple act of observation will not expand awareness or create empathy. Viewers must be prepared to diversify and expand their capacities for understanding through receptive viewing and critical engagement.

In her essay on moral perception, feminist philosopher Rebecca Kukla notes that often “our perceptual apparatus is not finely enough calibrated”, allowing the full implications of our experiences to pass us by (2002, 330). As in life, being receptive to art requires engagement and immersion rather than the detached, objective stance favoured by empirical approaches. The preference for a detached position is an attempt to universalise moral perception through the “cleansing of contingency” (2002, 331). Private or minority specificities are discounted, rendering difference invisible. A more accurate moral sensitivity would be attained when perceptual abilities are attuned through experience to acknowledge alterity. Perceptual abilities are honed by the varied experiences and contexts of individual lives, so inevitably our applications of perceptual concepts to events and situations would differ, perhaps radically. By recognising the contingent historicity of perceptual development, a purely objective reception of information is discounted as too rigid an approach, as it would obscure sensitivity to the nuanced subtleties of experience. Kukla asserts that the responsibility to expand the field of our attention and insights is a moral necessity, given that perceptual capacities can be cultivated towards wider and more accurate insights. In accepting or offering moral guidance, the varied nature of the development of moral insights must be acknowledged (2002, 331–39).

The aesthetic experience can foster increased perceptual awareness, since art’s ambiguous signs and symbols—while embodying a communicative impulse—require the viewer’s complicity to create meaning. The challenge for the viewer is to enter the posited world of the work of art and to absorb sensations that may remain indefinable but register as strangely articulate. Material, gesture, trace, idea, and context embed meaning in art’s evocative manipulation of the senses. Maurice Merleau-Ponty designates art as a “coherent deformation” imposed on the visible, articulating the buried meanings we negotiate in aesthetic engagement (quoted in Potts 2003, 107–8). The exchange manifested in the experience of art is not an overflow of hyper-sensitivity mythically associated with artistic temperament but a communing interchange in which visuality initiates a synaesthetic connectedness. Barbara Stafford sees the linking comparisons of analogy as a mediation between the known and unknown, in response to desire for more complete knowledge:

This fleeting entity—participating both in what one has and one has not, like and unlike the yearned-for experience—temporarily allows the beholder to feel near, even interpenetrated by, what is distant, unfamiliar, different. (Stafford 2001, 2)

The associative function of analogy, which links unlike terms, is essentially visual, so the visual arts exemplify the underlying structures and mechanisms of analogy operating in the building of knowledge (Stafford 2001, 3). Resemblance and disparity are teased into a playful dialogue, spanning disciplines and histories, cultures and habits.
THE DISCIPLINE OF PRACTICE

While feminist writers and artists in particular have reconfigured ethics through the lens of sexual difference, there has also been a more general move to a pluralist approach within contemporary ethical thinking and its application to art. Ethical pluralism allows individual choice in establishing moral parameters, recognising a diversity of interpretive responses to the complexity of ethical interaction. Pluralism troubles the dependence of traditional ethics on laws and obligations, which originate in monotheistic traditions pre-supposing divinely ordained law, and from which the secular notion of moral duty derives (Darwall 2003, 1). Over time, it has proven difficult to propose an ethical theory where rules can be consistently applied universally or equally. One alternative approach situates the basis of ethical choices in the cultivation of good character, promoting right action, designated as virtue.

Today, the term ‘virtue’ could be seen as problematic, considering its association with restrictive moral systems, and particularly its employment in inhibiting sexual expression. Feminist critics have expressed reservations about the reliance of some proponents of virtue ethics on misogynistic religious traditions. However, the complex theorising involved in this approach makes it difficult to bypass the term without distorting its characteristics. By exploring the concept of virtue in art practice, it is possible to further elucidate an ethical tendency in the arts appropriate to the flexible and mutable meanings produced by contemporary practice.

The Nicomachean Ethics by the Greek philosopher Aristotle (384–322BC) is an early paradigm of virtue ethics, in which virtues manifest as the choice of human excellence for its own sake. Aristotle categorised art as one of the “chief intellectual virtues”, concerned with “coming into being”, as well as producing an engagement with chance. Aristotle places art in the realm of “variable” knowledge as opposed to scientific knowledge, which he identifies as “eternal” (Aristotle [n.d.] 2003, 37–8).

This division into ambiguity and clarity is partly dependent on the intention and purpose traditionally associated with the various categories of knowledge, supported by the illusion that empirical knowledge is fixed and unchanging.
practice even prior to intersubjective exchange. MacIntyre posits that engaging with the history of the practice and acknowledging the authority of past work is another source of ethical response. He sees the accomplishment of internal goods as benefiting all of society. A practice transcends its necessary technical skills by extending its efficacy and vision through an intrinsic discipline and achievement. Its goals are not fixed, but develop with the interaction of the practice with its history, which provides grounding and tradition (2003, 152–57). However, knowledge in practice is kinetic, and only partly codifiable. Its manifestation as virtue is not purely cognitive, in the narrow sense, but must take account of the development of sensitivity to conditions that would result in right judgment and action.

The connection of virtue with knowledge requires an understanding that right behaviour has an intuitive dimension, and assumes a shared context to validate the decision, underpinning society’s ability to agree on the manifestation of virtues (MacDowell 2003, 123–30). John MacDowell’s “thesis of uncodifiability” acknowledges the complexity of ethical perceptions and can be suitably applied to the highly intuitive aspects of art practice. Concept and matter intermingle, forming what Paul Carter has termed “material signs” (2004, 182). The malleability of matter responds to and is a reflection of the artist’s thinking and imagining, resonating between distillation and elaboration. As Carter notes, “The discourse internal to the constitution of the work is isomorphous with the discourse it generates beyond the studio” (2004, 178).

The artist selects and refines, balancing strangeness with familiarity, chaos with coherence. This decision-making, operating both intuitively and intellectually, which coaxes ideas, emotions, and the senses into material communication, is analogous to the embodied processes we employ in our everyday negotiations with the world. The performativity of making art—displayed through its flexible and responsive immersion in, and refinement of, concepts and materials—parallels the practical workings of everyday ethical decisions. Ethical choices are situated in a particular context and approached with various levels of sensitivity, requiring the ability to evaluate and negotiate.

The reception of art should include an acknowledgement of the discipline required to sustain a creative practice. Critiques of capitalism’s co-option of art as a commodity and its consequent acquisition of external goods elide the rigour involved in most art production, whether technical or conceptual, and the benefits such committed discipline must accrue. The qualities developed in a genuine practice, such as commitment and achievement, respect for standards, and the courage to innovate, contribute to the integrity of the practice as well as the community it serves (MacIntyre 2003, 157).

A work of art synthesises aspects of its creator’s sensibility and intellect, which are subsequently grafted by the audience into the realm of their personal experience. Such a translation is mutable and open-ended, extending the possibilities for understanding on the part of both artist and viewer. The reflexivity of an artist’s creative process is repeated in the act of depiction; an awareness of actively presenting appearances and sensations to others parallels the manner in which the work “anticipates its own visibility” (Podro 1998, 88–89). This multiple overlapping of production and reception crystallises into a heightened sense of reciprocity, creating awareness in the open-minded viewer of a mutable exchange.

**THINGS OF THE FLESH**

In her practice, artist Helen Chadwick (1953–96) demonstrates a deep commitment to an embodied subjectivity that is embedded in a shared material world. Breaching the unitary boundaries of flesh, she dissolves the body’s self-sufficiency into the visceral fragments and stains of its interior. In her work, the division between the self and the world is disturbed by the interpenetration of fleshy signs and cultural forms, evoking growth and decay, fertility and death, with disturbing conjunctions of attractive and repellant materials. The sensuality of the images presents the erotic as a means of connecting with others as “the threshold where individuation breaks down” (Sladen 2004, 54).

Many works mesh aspects of the feminine and the phallic as one term mutates into the other: a pillar of tongues springs from a bower of foxtails, a column of glass holds amorphous decaying matter. Meat is swaddled by silken fabric, flowers float...
on chemical fluids and hair entwines intestines. Dualisms are referenced, then subverted, sliding between identities and genders, in a sophisticated manipulation of counterpoised qualities. A ritualistic formality in the presentation contains an evocation of the sacred, identified by Kristeva as the companion to the “perverse interspace of abjection”, delineating taboos and transgressions in order to enact a purifying catharsis (1982, 17). While Chadwick uses images and materials that exploit the disruptive properties of the abject, her works’ compositional precision, rich colours and textures, and immaculate finishes mitigate their visceral transgression (Sladen 2004, 40).

Sensitive to feminist criticism of the use of her naked body in early work, Chadwick turned to less sexualised images of the body’s interior, leading to her use of scientific and medical technologies. In the series Viral Landscapes (1988–89), Chadwick superimposed magnified images of her body’s cells over photographs of the coast of Wales, where she had taken up an artist’s residency. The region was unfamiliar to her and she felt that she was an outsider, a “cultural tourist” invading that wild and beautiful shore, like a viral condition in the landscape. Chadwick countered the sense of alienation by performing in the landscape—floating paint on the waves and imprinting the swirls onto canvas. These forms were then aligned with various body parts and sensations, as she lay with her head towards the ocean, immersed in the physicality of the environment. Images of cellular matter from related body organs were later added, and the results digitally manipulated, then combined with photographs of the site, also digitally manipulated. The resulting composite was printed to the proportion of a medical slide (Bukantas 2006).

Chadwick’s research for the work included the study of romantic painters, such as J. M. W. Turner (1775–1851), whose conception of landscape was nuanced by the sublime immersion in disorder and darkness, pierced with fractured light representing an absent and unattainable unity. The layered construction of Viral Landscapes reflects the bifurcation of romantic symbolism, split into the representation of the scarred and patched imperfection and complexity of the physical world contrasted with an imaginary synthesis as “a supernatural watery confluence” (Stafford 1997, 330). The threat of decay and dissolution haunts the romantic aesthetic, for the incursions of the natural world were seen as evidence of the transience and fragility of humanity, destined to be lost in an irrecoverable past. In the contemporary context, the insecurity of human existence is exacerbated by the destructive manipulations of human exploitation and conflict. A splintering into negative sublimity, based in immanence rather than transcendence, accompanies the increasing capacity for harm that shadows industrial and technological ingenuity (Hoffman and Whyte 2011, 14–18).

Viral Landscape No. 3 is edged by a bright field of red, warming the austere monochrome of the seascape’s dark striations of rocks against the pale ocean. Spore-like images were magnified from the artist’s blood cells, while the fissures and crevices of the rocks spread like arteries and veins across the foreground. The boulders on the shore are scattered in the broken geometry of ruins, linked by Chadwick to the clustered blots of the cellular forms (Bukantas 2006). An arcing curve of brownish red splashes across the horizon as if spurted blood had breached the separating boundaries of body and environment, sea and shore. The meeting of self and other is accomplished as a creative process; Chadwick remarks, “The living integrates with the other in an infinite continuity of matter, and welcomes difference not as damage but as potential” (Chadwick in Sladen 2004, 21).

Another series, Unnatural Selection (1995), which also uses microscopic images, was developed from Chadwick’s residency at the Assisted Conception Unit, King’s College, London. Here, embryos created in vitro but found unsuitable for implantation had been preserved in formalin. The artist photographed these rejected embryos and mounted the prints in settings based on Victorian mourning jewelry. The selection process for the healthiest embryos took on an aesthetic aspect in that symmetry was an indicator of excellent development (Sladen 2004, 27). These artificially fertilised, pre-implanted eggs were a fabricated artifact, as unnatural as a work of art. The difficulty of grasping these unfamiliar miniature forms is demonstrated by the confused distortion of images in the early history of microscopy, initially evading the precision...
required by scientific inquiry. Although aspiring to codify all the mysteries of the universe, the Enlightenment scientist had to admit to the contingency and complexity of the material world (Stafford 1997, 351–52). Similarly, Chadwick’s work encapsulates the mutability of embodied nature and the limits of what is humanly observable, while also affirming humanity’s innate dependency on the natural environment. Her engagement with female bodily specificity and its problematic cultural constructs is embedded in feminist concerns but also relates to a wider range of differences.

**BEYOND DUALISMS**

Feminist consciousness has influenced today’s art practice, history, and criticism, and is integral to contemporary theories of relational, embodied, and contextual art. Its initial oppositional stance has evolved into a more nuanced and reflexive approach. Reviewing several decades of feminist practice, Andrea Fraser notes that feminist work established a practical methodology for institutional critique:

> ... the constitutive sites of feminist practice were above all the body and the political, social, sexual and intersubjective relations in which the body exists: a kind of “relational specificity” I see as fundamentally feminist. (Fraser 2003, 150)

However, in the arts, critique alone is no longer a viable approach for contemporary feminism as it subsumes aesthetic potency into the too-familiar instrumentality of social reform. The ethical force of feminism can be more effectively embedded in the specificity of the work of art’s material and embodied invention, without the domination of either concept or form, so that both are rendered newly significant (Ziarek 2012, 391). Delineating the traces and trials of embodiment has been a central concern for feminist artists who explore the political and social interactions of gendered relations by placing the female body in tension with technology, cultural representation, and the environment.

This sexuate awareness has informed the way in which many feminist theorists have approached environmental ethics, by employing theories of relational dynamism grounded in specificity and context, which bridge the dualistic tendencies embedded in scientific, political, and economic frameworks. Ecofeminism’s concern for the natural world has broadened the theorising of difference to include non-human species and environmental situations. Recent analysis blurs the distinction between nature and culture, indicating that our view of nature includes social constructs, while cultural structures are dependent on natural milieus (Cudworth 2005, 45). These revisions can be related to the responses to ecological conundrums made by contemporary artists who engage with the social and ethical dilemmas presented by the technological age. Their involvement continues the shift beyond the disengaged, objectified judgement espoused by traditional aesthetics towards a broadening of the range of art practice into expanded techniques, contexts, and collaborations.

An alignment with nature is celebrated in ecofeminist thought, not only as a potent and poetic metaphor exploring feminist paradigms but also as a motivation for global ecological activism. Protests led by women in Europe, Africa, and India during the 1990s addressed concrete ecological problems caused by the exploitation of resources for profit (Merchant 1990, xv). Ecofeminist theorists have exposed the negative values that were traditionally applied to both women and the natural world, revealing the interdependency between their mutual exploitations and critiquing the fallacies of dualism. They have developed integrated and co-operative political strategies for movements opposing domination (Plumwood 1993, 1). Such concepts of environmental ethics reconfigure aspects of human interaction with nature, asserting that the natural world exerts a generative influence on human affairs through its dynamism and autonomy. This recognition enriches interactions with the environment and non-human entities through the evolution of empathy into responsibility.

Many liberal and constructivist feminists are reluctant to valorise the link between women and nature, criticising such a connection as a problematic, essentialist, and biologist reinforcement of established hierarchies. Though producing necessary social and political analyses,
these positions generally elide the reality of matter by concentrating exclusively on processes, social evaluation, and an ethics detached from the raw material of nature and biology (Grosz 2005, 77–78). A critical ecological feminism challenges such dualisms by adopting a pluralistic approach, grounded in context, diversity, and inclusiveness; sees human identity as integrated with nature; and recognises the positive value of differences. Difference, particularly sexual difference, provides a dynamic and fertile space for the transformation of concepts and knowledges, producing divergent approaches and perspectives, while dualisms solidify into monolithic, immovable relations of power (Grosz 2005, 165–66). This “logic of domination” assigns moral superiority to the privileged group, sanctioning exploitative behaviour that subjects the devalued group to mastery through naturalised methods of denial, radical exclusion, instrumentalisation, and stereotyping. Western tradition’s intimate connection between the qualities attached to the feminine and those of the natural world creates a parallel logic operating in the subordination of both. The interaction of dualisms forms a network enmeshing a multitude of contrasts and exclusions, but the gendered reason/nature dichotomy represents the most fundamental split (Plumwood 1993, 44–54; Davion 1994, 10–11).

Rather than viewing the natural world as a series of mechanistic, automatic processes, the embodied relation embeds human activity in a living, dynamic environment, continuous with, but not identical to, humankind. As in Merleau-Ponty’s conception of a “fold in the flesh of the world”, the environment is breathed, ingested, and incorporated into our bodies, so that “our flesh lines and even envelops all the visible and tangible things with which nevertheless it is surrounded” (Merleau-Ponty 1968, 123). “The flesh” is an amalgam of materiality and consciousness, a shimmering and fluid primordial dimension, enfolding the living and non-living, the interior and exterior states (Grosz 2005, 125). Our apprehension of the world is inextricably grounded in the bodily realm of sensation, mobility, and performativity.

Natural forces influence the development of the symbolic structures of culture and knowledge, a debt that has been severely neglected by a society entranced by its technological virtuosity. The division into human and non-human realms simplifies the diverse natural world into a homogenised resource for human use, subject to exploitation and domination (Cudworth 2005, 45). Even environmentalists accept the concept of human stewardship of nature, seeking to protect the environment through control and management. Thus, the dynamism and autonomy of nature is subsumed by the dominance of human manipulation and hierarchies.

The organic and inorganic forces generating life exert a creative pressure on human endeavour, in that “the natural prefigures and induces cultural variation and difference . . . biology impels culture to vary itself, to undergo more or less perpetual transformation” (Grosz 2005, 43). Rather than merely limiting or curtailting cultural forms, the natural world generates innovation through its manifestation of events and problems, which must be confronted to sustain the functioning of societies. The energies and transformations of the ecosphere mesh with and mould the artifacts and technologies of the human world in an intricate polyphony. Though we may attempt to impose order on this protean variety, we cannot regulate what is imperfectly understood without incurring negative consequences.

Admitting the limits of rationalism generates an understanding that is not precise or final, but may induce new ways of imagining, or at least complicating, conventional assumptions (van Alphen 2005, xvi). Through its intuitive evocation of ideas and values immersed in environmental, social, and historical contexts, art acquires agency and ethics. Engaging with aesthetic qualities engenders regard for the intrinsic worth of objects and entities, broadening our values beyond purely subjective or self-interested concerns and instilling respect for a wider environment (Berleant 2002, 18). This environment includes habitats and entities inaccessible to human awareness, while even the most intimate relations harbour at their core an unassailable alterity. The radical otherness of those beings and processes that constitute our world, a world that is nevertheless finite, make the responsibility to share an incalculable ethical imperative (Oliver 2012, 131).
Figure 1 *Half Life* 2008, oil on canvas, 78 x 62cm
CASTING NETS

My own studio work is informed by the otherworldly beauty of hidden things, interweaving the complexities of subjectivity with the captivating apparitions of organic and technological forms. The motifs borrow meaning from each other, acting as mobile and adaptable signs, and sharing symptoms. In *Half Life* (2008, figure 1), a messy tangle of wires in a reactor pool echoes the sinuous, toxic filaments of the medusa. The spines and tentacles of marine dwellers perform the same siphoning or connective functions as the pipes and cables of scientific equipment. In the drawing installation, *Energy Field* (2010, figure 2), the shapes of microscopic marine life display the same geometry as cogs, links, and sockets, suggesting a mathematical confluence between microscopic and macroscopic forms. The unveiling of hidden life provided by photographs, film, and historical images meshes with the lived experience of more accessible manifestations to intensify a sense of the world’s intricate enchantment.

For Jane Bennett, “enchantment as a mood requires a cultivated form of perception, a discerning and meticulous attentiveness to the singular specificity of things” (Bennett 2001, 37). All artists attempt some form of enchantment, courting the experience of wonder, and, in the process, enhance their perceptive capacities and sensibilities. Enchantment can arise from the most unlikely or mundane sources, from the human or natural world, from prosaic situations or strange occurrences. In *Night Pool* (2007,
figure 3), a swimmer, dreaming of the fertile, blooming waters of the tropics, is suspended in the chlorinated water of a swimming pool. The lights of a city, glimmering on the horizon, signal the cross-woven mesh of energies that surges through the manufactured symbiosis of technology. The co-adaptation of the natural world is also intermeshed, from the invisible drifting veil of planktonic life to the marine giants it supports. The coruscation of light on water marks in miniature the fluid dynamics of ripples, currents, and waves circling the continents with a musculature of water in motion. These vast systems are shadowed on a human scale by the firing of synapses, blood circulating, and the flushing and fading of thoughts and feelings. In the studio, nets are cast into this incessant flow to capture and cultivate a semblance of life’s interlinking.

The initial impulse in my studio work is to depict the shadow of human activity as it falls on the natural world, worked out in detailed drawings based on observation and photography. Rather than depicting objects from everyday experiences, I seek unusual life forms found in difficult environments, which appear in scientific contexts and represent a recondite layer of human interaction with nature. The images are collaged and collated into scenarios that depict aquatic creatures subject to the scrutiny and interventions of science and technology. In Probe (2006, figure 4), tube worms and siphonophores clustered around the warm currents of deep sea vents encounter the prosthetic eye of a research submersible. The communities that form around the vents are transitory, dependent on the specialised conditions of deep sea eruptions. The investigations in the submersible Alvin, carried out over three years, recorded the flourishing and decline of the organisms as they responded to the unstable volcanic processes (Lutz and Haymon 1994, 115–21). Such elemental materiality and mutability of substances is embedded in the graphic quality of etching techniques. The physicality of the processes of drawing into the ground, the bite of the acid, inking up, and wiping back, then the final transformations of the press, suggest the organic cycles of living things.
as well as the precisely ordered, but not entirely predictable, procedures of scientific experiments.

Alongside material alignments, my work has metaphorical layers that allude to the creative process itself, generated in the perplexing milieu of affect and experience, matter and the imaginary. *Fertility* (2006, figure 5), depicts a writhing mass of warty wood toads in a mating frenzy, grasping the chance of regeneration before the transient waters of spring rains evaporate. Their urgency and confusion reflect the initial phases of invention, when fragments and flares of images and concepts flicker erratically from the subconscious. The liminal sensations of creative formation, before intentional direction is applied, are the originary sources of invention for the artist, constituting a phase of the aesthetic experience that can be shared with the viewer in the form of “encounters or ‘graspings’ that precede the explicit formulation of a judgment that could be true or false” (Shusterman 2008, 86). The ambivalent prompting of the imaginary produces an uncertain but insistent directive, which must be captured and structured in studio procedures.

This receptive state of consciousness appears in the serene innocence of the submerged infant in *Aquaculture* (2006, figure 6). Secure in an inflatable, mysteriously tube-fed and monitored, the child’s state recalls the vulnerable neonatal condition of undifferentiated immersion in the phenomenal world. Swarms of jellyfish surround the child with the gentle pulsing rhythm of a multitude of heartbeats and the gelatinous caress of primal matter. This evocation of an archaic, watery origin is intersected by the suggestion of artificial systems of reproduction and representation that regiment human awareness adrift in networks of experience.

The perceptual and sensual flows of human subjectivity appear in my paintings of underwater divers drifting in marine environments. I rearrange naturalistic proportions and scale into disparate alignments and eye levels, which often results in a sliding, compressed depth
of field. Split perspectives allow simultaneous views above and below water, disturbing familiar horizons with an alien, submarine realm. I retain the vivid but unreliable colours and theatrical tones of artificially lit or filtered photographs, as they evoke for me the hyper-reality of memory or dream. This reworking of photographs reflects the way in which intense personal experiences and emotional investments are reconfigured and overlapped with the shared cultural background of media images, both prosaic—because ubiquitous—and extraordinary. It is as if these contingent images, part of the collective unconscious, could be rearranged and recontextualised into hybrid mythologies, becoming floating signifiers for individual experiences and desires.

THE SHIMMER OF THE DEEP
Meaning in visual art is intrinsically fluid, adapted to “crafting self-awareness out of environmental fluctuations” (Stafford 2007, 12). The relative certainty of language is dissolved into the shimmer of opticality and the fascination of the phenomenal world. The concept of fluidity, in its qualities of movement, depth, and scintillation, operates in my studio work as an underlying theme. The bright shallows or shadowy depths of water appear in translucent layerings of glazes over mottled or dense pigment, applied in increments of colour. The technical processes of painting, etching, and drawing resonate satisfyingly with watery images. The interplay between ideation and the material form employed contributes to the work’s resolution in that the studio processes enact aspects of the conceptual and figurative elements. Our experience of a work of art’s formal qualities is inseparable from the materials themselves and their manipulation, or, as James Elkins puts it, “Substances occupy the mind by invading it with thoughts of the artist’s body at work” (2000, 96). He describes the painter’s materials as an alchemy of water and stone, medium and pigment. Mixed in infinitely mutable proportions, their application is subject
Figure 6 Aquaculture 2008, oil on canvas, 61 x 92cm

Figure 7 The Bride 2007, oil on canvas, 60 x 90cm
Figure 8 Isomorphic 2012, oil on canvas, 61 x 46cm

Figure 9 Testing the Consequences 2013, oil on canvas, 101.6 x 101.6cm
to all the variability and fluidity of their natural properties.

Water has no fixed form, only translucence and weight, so its depiction is always imprecise. As a symbol it is intrinsically ambiguous, escaping precise outlines or definitive qualities. The conjunction of light and water dazzles vision, confusing and refracting shapes into dissolving apparitions.

Irigaray writes

Withdrawn into a strict deprivation of all exercises of the sensibility and imagination, the subject will observe the world like the pilot of a ship taking to the open sea where nothing determines the perspective but the limitless nothing to be seen. (Irigaray 1985, 185)

In this passage, the empty expanses of the open ocean allude to the position of the feminine as a silent and invisible matrix aligned with the natural world and the senses, erased by the clinical gaze of Cartesian rationalism. In my work, the marine world is restored to view, supplying an alternative universe where naturalism can produce the most surprising and mesmerising forms. The convolutions of coral, the ruched globes of jellyfish, and the ribbons of tentacles and fronds convey restless movement, as in the rippling drapery and swirling ornamentation of the baroque (The Bride, 2007, figure 7). The arabesques shaped by water demonstrate the way in which humanity is enfolded into the environment in “lapping waves... an infinity of tiny folds endlessly furling and unfurling” (Deleuze 1993, 98).

In his studies of the psychology of the “material imagination” expressed in a poetics of the elements, Gaston Bachelard identifies water as an impoverished realm of the imaginary, commonly associated with the superficial play of its shimmering surface that symbolizes “hidden, simple and simplifying” attributes (1982, 5). Its metaphoric signification is most often focused on playful and capricious surface effects: decorative rather than profound. This view disturbingly repeats the stereotype of nature and the feminine as inexpressive and unreliable. However, Bachelard also points to the “rare occurrence” where water appears in images that evoke its elemental substance, its most enduring characterisation, that of “mysteriously living matter” mediating between life and death (1982, 12). As one of the four basic elements of the neoplatonic cosmology linked to the four humours of human nature, water was traditionally associated with the phlegmatic temperament, corresponding to darkness, night, winter, and tears (Panofsky 1972, 206–07). These sorrowful properties give weight and gravity to the sunlit radiance of surface water, creating a metaphorical complexity that replicates the generative richness of natural bodies of water.

The beings I depict drifting in this luminous element are shaped for its density and buoyancy. Aquatic organisms adapted to inhabit the incessant flux of current and tide are finned and fluted, sinuous, contoured, and filigreed. Sleek imitations of their morphology are applied to the streamlined prosthetics humans have adapted for floating, swimming and diving. Amphibious creatures are reshaped when they enter the water, their forms refined by the pressure of a weightier element. Human bodies respond with gestures of flight; arms are spread like wings, legs stretched into the slipstream. Water caresses limbs into streamlined and compressed shapes, blunting the senses with an unfamiliar closeness. Faces are distorted or obscured, and the need for goggles or breathing equipment disguises their features and deflects their gaze. The face-to-face encounter is softened into an awareness of a floating body, suspended in a shared element. Speech is impossible, so gesture and touch become the primary means of communication (Isomorphic, 2012, figure 8).

In the slow unfolding of the painting process, the optical immediacy of memory and photography is shifted by the rhythms of touch into a record of duration. No longer the perfect, stilled capture of time, but a porous skin of translucent and opaque layering lit by the white canvas ground, the paintings display an undisguised sedimentation. The images create mobile synergies of mimesis and improvisation, presenting the intertwining of the human and natural worlds as a co-dependence, both biological and figurative (Testing the Consequences, 2013, figure 9).

As an intuitive, exploratory interplay of matter and affect supported by a directed, organised and
Where aesthetics converges with ethics even (Ettinger 2006, 146–47). A creative practice is podcasts/transcripts/viral_landscapes.asp.


INTRODUCTION
Modern design communication no longer engages our tactile senses. Eighty-three percent of the sensate signals that humans process are delivered to their brain through their eyes and ears, and, perhaps because of this, the digital revolution gives preference to sight and hearing over the remaining three senses. Graphic communicators have to ask “what about the remaining seventeen percent?” (Witham 2005, 6) If they fail to ask this question, they miss out on delivering some valuable sensory information, removing touch from the communication equation.

Along with this loss of an emphasis on touch, the digital revolution, which began around 1980, has been responsible for a loss of creative freedom for many designers and typographers. Since the introduction of the desktop computer in the late 1980s, graphic design has also undergone a revolution where the need for traditional skills—such as typesetting, paste-up, and finished art—have all but disappeared. What was once a profession reserved for a few is now available to anyone with a computer and an Internet connection (Cole 2005). Royalty-free stock images, free fonts, and professional-quality templates have enabled anyone with even basic skills to create ‘designs’ as competent as any pre-computer designer (Austin 2002). As a result, graphic designers are seeking new ways to express themselves creatively and uniquely, and there are few designers who work exclusively in typography.

My studio research seeks to discover whether engaging with touch is an effective way for graphic designers to reinvigorate their creativity and produce innovative communication within the digital design landscape.

CONTEXT OF THE RESEARCH
Design theorists agree that the digital revolution has changed the graphic design landscape forever, with the widespread use of desktop computers and the Internet having had the most impact (Heller et al. 1997; Heller and Ballance 2001; Cole 2005; Oxman 2006; Armstrong 2009). However, there are divergent opinions about the future of graphic design. Some argue that the computer is an essential ideation tool for all design domains (Jonson 2005), and others view new technology not as the cause of the problem but the solution (Noble 2003). Yet another authority, Steven Heller, one of the leading exponents of graphic design theory and history, insists that the computer is simply an aid to the design process and that the future of the discipline lies with the designer’s ability to innovate (Heller and Talerico 2008).

While the full effect of this digital revolution on the field of graphic design is still being debated, it is clear that the fate of typesetting was decided in the 1980s (Bigelow and Day 1983; McCoy 2001; Spencer 2004). As an arcane art form, traditional typesetting barely exists and digital typesetting is the widespread practice (Heller and Meggs 2001). Regardless of the technology used, however, the fundamentals regarding the use and handling of typographic conventions appears to have remained intact, and the theoretical underpinnings of typography, in terms of history, are as valued today as they have always been (Gill [1931] 1993; Stockl 2005; Lewis 2007; Lupton 2010).

THE DESIGNER AS VISUAL ARTIST
Because of the changes in the digital design landscape, in many cases, the role of the graphic designer is now more passive, one of “consulting, styling and formatting” (Cole 2005). Many graphic designers are also creating their own visual art and self-initiating projects to help build their profiles as visual artists, but also to reinvigorate their creativity within their commercial work (Austin 2002; Wragg 2011). One such designer/artist, Troy Archer, describes himself a “night illustrator” (2010), in reference to the time of day he is able to work on these self-generated projects.

This need for Archer to ‘invent’ a term hints at a deeper issue, and the interchangeable
vocabulary in use—including ‘designer’, ‘fine artist’, ‘visual artist’, ‘illustrator’, ‘typographer’, and ‘commercial artist’—demonstrates the desire many graphic designers have to define these terms for themselves (Heller 1997; Lionni 1997; Fegan 2008; Sagmeister 2009; Bantjes 2010; Boccalatte 2011; Little 2011). Indeed, an argument could be made for the introduction of a new expression that describes the ‘designer “slash” artist’ as occupying a hybrid space between the ‘designer-for-hire’, who works to a commercial brief, and the ‘fine’ artist, who creates work to satisfy their own brief.

The “designer as entrepreneur” (Heller and Talerico 2008) is a well-established term, used to describe a cross-section of graphic designers who develop their own products for sale, with the companion term “designer as author” (Rock 1996; Heller and Lutig 2011) also gaining traction. The School of Visual Arts (SVA) in New York has been running its graduate program for the ‘Designer as Entrepreneur’ since 1998 (SVA 2011) and program chairs Steven Heller and Lita Talerico have championed the concept ever since.

Apart from creating their own products or working beyond the brief as a way to reinvigorate their creativity, a growing number of graphic designers are advocating a return to the tactile, handmade, and bespoke in reaction to the generic, machine-made, mass-produced offerings of twenty-first-century digital graphic design (Witham 2005; Perry 2007; Wray 2009).

Rather than rejecting the computer outright, many theorists and graphic designers argue the case for combining the computer with the tactile qualities of handmade elements (Associates, Millman, and Chen 2006, 2007), and most designers would regard ‘tactile design’ as a combination of both word and image. When I began to research the area, I discovered the lack of any serious investigation into tactile design within academic discourse; publications on the topic are primarily design showcases and ‘coffee-table’ books filled with images and cursory introductions. Any formal research into the subject of ‘touch’ tends to take one of only two approaches (discussed below), and very little of it addresses design or communication in any way other than to discuss learning aids for the vision-impaired.

TOUCH AND THE HAPTIC

The first group of ‘touch researchers’ examines vision-impaired people and ways to increase their sensory awareness through touch (Schiff and Foulke 1982; Edman 1992). The second group examines the psychology of touch and cognitive processing in sighted people, often regarding childhood development (Zigler and Northup 1926; Bliss and Crane 1965; Lederman 1983; Loomis and Lederman 1986; Loomis et al. 1991), with psychologists Jack Loomis and Susan Lederman leading the field in this research.

The terms *haptic* and *tactile* appear interchangeable in everyday language, due in most part to a misunderstanding of the actual meaning of the terms, but when authors address the haptic, they usually specify a form of nonverbal communication (McLaughlin et al. 2001; Tiest 2010), often using machines. Haptic sensory information is formally defined as being either tactile or kinesthetic (Youngblut et al. 1996, 117) and so, while my work might rely on a certain apprehension in the haptic sense, without any actual movement or physical interaction, it remains (for the moment) purely tactile and visual. All researchers agree, however, that some form of touch is vitally important in developing one’s understanding of the world and aids in communication—both verbal and nonverbal—and Suzette Elgin’s (1997) research demonstrates this is especially so for people she defines as “touch focused”.

THE NEW AESTHETIC

An emerging group of visual artists currently exploring the haptic possibilities of ‘machine vision’ are known as the ‘new aesthetic’. New media artist James Bridle pioneered the idea of the new aesthetic, and coined the term while curating an online gallery in 2012. Cyberpunk author Bruce Sterling became the primary advocate for the new aesthetic when he wrote a rambling 5000-word essay for *WIRED* magazine (2012) after attending a South by Southwest Panel discussion that Bridle chaired.

Sterling’s article, which describes the new aesthetic as an “eruption of the digital into the physical” (2012), instigated a wide range of lively, positive online discussion and responses (Cox 2012; Rhizome 2012; Sefton 2012)—as well
as some less-excited responses (Jackson 2012). Nevertheless, all the responses recognised that a body of visual art that recreates the digital aesthetic in the tangible world is already seen in fashion, sculpture, and homewares, but the graphic design field, and typography in particular, has yet to capitalise on this new aesthetic, and this is something my work seeks to address.

The surveyed body of literature would suggest that graphic designers are struggling to adapt to the changes to their profession, and a way forward might be to develop a range of ‘designed’ products under the guise of ‘creative entrepreneur’, or work to self-generated briefs under the guise of ‘visual artist’. The goal here would be to raise their profile and regain control of creative outputs, as well as inject newfound creative energy into their commercial work. There also appears to be a return to the handmade as an antithesis to the slick, on-screen aesthetic, but the new aesthetic makes light of this dichotomy by staging one unexpectedly in the realm of the other.

In response to some of the issues raised by changes in the digital graphic design landscape, I plan to build a profile as a designer/artist and create pieces of tactile typography that encourage audiences to touch them both in a gallery context as well as in print or via online platforms. By producing pieces of graphic communication that are ‘haptic’ rather than purely visual, I am hoping to reintroduce touch into the communication equation.

THE DESIGNER/ARTIST

My studio research into tactile typography began in 2009 and has undergone three stages or phases of evolution since then. The first stage explored the ways graphic designers find new expression for their work through visual art and considered how this research might inform my own studio practice. This initial research resulted in the second stage of my work—a body of visual art that was purely typographic, a reflection upon the unique perspective of a ‘graphic designer as visual artist’. The work also became handmade and tactile as a result of positive audience engagement with the work. These and the third stage will be discussed in more detail below.

Suzanne Boccalatte (2011) suggests artists and designers are different because of who their work is for—artists make work for themselves, and designers make work for an audience—and this is an essential difference when classifying visual artists into groups. Celebrity graphic designer Stefan Sagmeister looks at this division another way: “Artists look down on designers and designers don’t care about artists” (2009, 179). If this is the case, people trying to work within both spheres could well find themselves isolated from both, and indeed this emerged as the crux of the issue for the majority of designer/artists I researched.

Heller addresses this issue in his introduction to Design Culture (1997), arguing that graphic design occupies some kind of ‘netherworld’ between art and commerce. My own initial research was not concerned with one sphere versus the other; it tried to find a place or identity for the group of people who belonged, in part, to both.

While celebrity graphic designers such as Sagmeister have managed to build careers where their self-initiated creative work is essentially subsidised by their clients, for the majority of contemporary graphic designers, this is simply not an option. Commercial work often comes with a set of inbuilt conditions brought about by the whims of clients, tight deadlines and budgets, and marketplace demands (Lionni 1997), all of which make it a limited platform for self expression to appear.

The result of this change brought about by the digital revolution is a new group of creatively frustrated graphic designers who seek to indulge in ‘design for design’s sake’ to enjoy their craft without a budget or client in mind. Discussing Edits by Edit, one such self-generated project, Nicki Wragg (2011, 22) argues that this process of designing for the sheer joy of it results in a playful experimentation that “liberates the mind and frees the soul”, and ultimately filters creativity back into the designer’s commercial projects.

Illustrator Ian Noble (2003) suggests that illustrators and image-makers can use new technology to not only explore how it affects the construction of images, but also to produce, promote, and distribute these personal creative projects that do not originate from a commercial brief or client. This approach is advocated by the aforementioned SVA program; in the introduction to his book The Design Entrepreneur (2008, 10),
Figure 1 Flat, White, and Spaces 2011, vinyl on white MDF, triptych, 90 x 40cm each (details)
WE ARE ALL A PART OF THE SAME THING

Figure 2 We Are All Part of the Same Thing 2011, pin and string, 90 x 40cm
Figure 3 Relax and Unwind 2011, pin and string, 120 x 90cm
Figure 4 | I Could Do Anything . . . 2011, pin and string, diptych 90 x 40cm
My research into the ‘designer as visual artist’ evolved at this point to ask a new question: in an age where digital technology and mass production has instigated a return to craft and the handmade, how will audiences respond to typography-made-tactile? In her introduction to Handmade Graphics, Anna Wray hypothesises that the highly polished images produced by designers working on computers occur because the elements of chance, materiality, and texture are lost within the new process, and asks, “with the digital aesthetic becoming the norm, could it simply be that creatives are growing tired of staring at screens?” (2009, 3) Wray’s question addresses the reasons designers are craving a return to craft, but what about audiences’ desire for the unique and handmade? Is it due to the ubiquitous nature of digital communication or the homogenisation of global brands?

While text has been the focus of numerous visual artists, typography as an art form is unique to graphic design. The majority of other forms of visual art draw heavily upon image and abstraction, whereas graphic design relies primarily on typography (Stockl 2005). My studio work tends to focus exclusively on typography, and it evolved to becoming ‘tactile’ because of the positive audience response I received to my analogue outputs.

My studio work examines ways to make typographic messages engaging by re-imagining the digital aesthetic in unexpected ways. The visual language of the digital interface is something so familiar to modern Western audiences that often people don’t realise what they are looking at until they see it presented out of context. I find that using unexpected materials generates revived engagement with the pieces, and the tactile stimulation I get from each new work encourages play and experimentation.

As my research has progressed, a subset of designer/artists have emerged who combine analogue techniques with their digital work to give three-dimensionality to their gallery pieces, rather than exhibiting the digital works themselves or printed reproductions. I gravitated towards creating pieces where the work is first created in a digital environment but then produced as a
physical ‘analogue’ object; the result is a unique, ‘one-off’ piece.

Using this methodology, I produced a series of experimental tactile typography pieces for competitions and group exhibitions from April to December 2011, resulting in a haphazard body of work. Surprisingly, some of these pieces were popular with people frequenting websites, such as Tumblr, Pinterest and Facebook, and several of the pieces became ‘shared’ by thousands of people. In particular, We Are All a Part of the Same Thing (2011, figure 2) was ‘shared’ on Tumblr by over 22,000 people in one instance, and over 15,000 times again just recently (Tumblr 2011).

Further analysis into this phenomenon revealed that the work that gained the most exposure on the Internet due to ‘sharing’ were those that said something the audience could relate to—We Are All a Part of the Same Thing, Relax and Unwind (2011, figure 3), and I Could Do Anything . . . (2011, figure 4), in particular—but they were also pieces in which the tactility is visibly evident.

In a digital photograph, subtle textures and low relief are difficult to translate. I realised that, when faced with the actual work, audiences want to touch my pierced and vinyl pieces the most, but the nail and string pieces—where the tactility is evident in the visual—are more widely shared on the Internet, as evidenced by a survey of Pinterest in 2011.

After a while, I became influenced by reading online viewer comments and found myself producing more of the work that was most popular in order to keep the impetus going. As a designer, it is only natural to want to improve audience response and interaction—after all, the feedback loop is an essential component of how designers are trained to communicate. However, for a visual artist, this process can be distracting. I was more concerned with exploring new materials, but the Internet audience indicated one material was more popular than the others and this began to influence my studio practice.

GOODBYE HELVETICA

These tactile typography ‘experiments’ culminated in a milestone exhibition in February 2012. I was asked to propose an idea for a solo show in a refereed research gallery called T-Space at the Surfers Paradise Transit Centre. The space was
a deconstructed, newly refurbished, glass-and-concrete construct within the transit centre, and the show coincided with the end of my own year-long project (for which I had made a public declaration) of devoting myself to one typeface and one typeface only—Helvetica.

I proposed an idea for a show called *Goodbye Helvetica*, a unique typographic installation, and love letter of sorts, with the various pieces relating to what I did and didn’t like about Helvetica and how I felt about the ‘relationship breakup’ (figures 5, 6, and 7). I was concerned that the audience would be too scared to touch the work in a gallery, so I made an installation instead (*Goodbye Helvetica*, 2012).

The installation took five weeks to complete and was well received among my peers as evidence of how graphic design can transcend a gallery space by way of typographic installation. It was rewarding to see visitors in the installation space interacting with the pieces, but their response to the tactility was not what I had expected. The projection piece elicited the most interaction, and the floor piece, by its very nature, was walked all over, but the ‘visual art’ nature of most pieces failed to engage the audience to touch them at all. I had mistakenly thought it was the gallery construct that prevented people from touching the works, but the audience was still reluctant in a deconstructed installation space.

As T-shirt designer Eddie Zammit (2011) observed when he visited the designer/artist Jeremyville’s ‘salon’, most galleries are quite literal in format, even though the works contained in them are not, and, as I discovered, the audience is prepared to revere any work as ‘art’ no matter what it is or where it is displayed.

**REFLECTIVE PRAxis**

My experience revealed that when faced with a work of art, the audience responds best when they feel it is ‘safe’ to touch the pieces. The Internet audience appears to respond best when they can see a piece is labour-intensive and visibly tactile, though there may be other, unspoken, responses that the audience is unlikely to comment on in a blog format. I personally respond best to a piece when it is enjoyable to make because of my own tactile response to the materials.
This left me with a choice. Should I make work where touch was the paramount concern for the audience, such as clothing, furniture, or textiles? Or should I make work where I enjoyed the sensation of making it, and disregard the importance of the audience touching it? The haptic apprehension experienced by the audience when viewing digital reproductions of the work was an unexpected outcome and has subsequently afforded me a degree of freedom when it comes to displaying the work.

As a result of this reflective process, I was reminded that the computer is just a tool, part of the creative process, something I knew as a junior designer, but forgot as digital technology evolved. As I looked around, it seemed that designers everywhere were also starting to realise this and I began to witness a return to the hand-made in design (Perry 2007). However, a return to the analogue that rejects the digital outright is foolish and is akin to throwing the baby out with the bathwater. To be clear, I am interested in revisiting the tactile and hand-made from the perspective of the digital.

It also became evident at this point that the Internet audience was gravitating towards my pin-and-string pieces; even though there were thirty assorted works on my website at this stage, many people sifted through the works and curated their own virtual galleries of just the pin-and-string pieces (Deny 2012).

The audience response to tactile typography as an art form has been very positive, with many hundreds of such images being ‘shared’ on image-sharing websites since I coined the term in 2011. The most popular of these pieces appears to share common attributes: the audience can relate to the words within the piece; the tactility of the materials is evident; and the work appears to be labour-intensive.

I was fascinated and surprised by the interest shown by audiences in how time-consuming my piece was. There has been recent media coverage of the idea of “slow media”, and professor of journalism Jennifer Rauch suggests that we are “observing a moment of transformation in the way that many people around the world think about and engage with mediated communication” (2011). The term slow is widely understood as a reminder to take our time with things, such as the
The new aesthetic is a burgeoning art movement in which the digital aesthetic is reproduced using analogue, three-dimensional techniques. The work produced by this group of artists is highly relevant to the digital-communication culture that graphic designers currently work within (Sterling 2012). However, as typography is notably absent from this body of work, I feel my tactile typography work within the digital aesthetic is well positioned to make a significant contribution to the new aesthetic movement as a whole.

Founder James Bridle sees the new aesthetic as “a blurring between ‘the real’ and ‘the digital’, the physical and the virtual, the human and the machine” (2012). He discusses at great length his thesis of “machine vision” and the idea that art should be the result of the partnership between artist and machine. According to David Cox (2012), “The New Aesthetic invites us to have fun with urban space; to instantiate bits of virtual vision into it.” In his interview with Bruce Sterling, Cox argues there has always been a move to the physical, ever since there were media (2012).

There is potential here for a new phase of development in my work, for it to become a series of touchable objects, rather than visual art hung on a wall, since, traditionally, the gallery or installation environment discourages touch. Despite my best efforts, treating tactile pieces in the same way as traditional visual art distances the audience, and tactile typography needs to be handled in order for audiences to experience its full effect.

The majority of current new aesthetic works produced by others would fall into the categories of sculpture, fashion, textile, and object, rather than traditional visual art, but as a graphic designer, I feel most comfortable producing pieces within my own sphere of reference, such as books and soft furnishings.

THE WAY FORWARD

The final body of work for my PhD therefore will most likely be tactile, typographic, and presented in a traditional gallery, but in a way that encourages touch (an analogue representation of a digital typographic aesthetic); for example, a book and series of objects in an environment that encourages interaction. Part of the challenge for me is to break through the boundaries
contained within the traditional gallery construct and engage the audience to touch the pieces. I am undecided whether this is a doomed task that distracts me from the research focus, as demonstrated by my previous endeavours, and whether it may be easier to stage the exhibition outside of a traditional construct.

By referencing the digital aesthetic in the work, but making it clearly non-digital in its output, my work makes a clear comment on their relationship. The visual joke is something that is enjoyed in person when people ‘get it’ and something that is enjoyed over the Internet as a ‘shareable object’.

Touch itself will most likely be the subject matter for the new works I am creating. They will be statements about the demise of touch or the relationship between touch and the digital realm, or simply be touch-focused statements that allow for the viewer to draw their own conclusions about the importance of touch.

Very few visual artists explore tactile typography in its analogue form, with reference to the digital aesthetic of new media artists in the way that my work does. Evelin Kasikov is the only other visual artist that I know of who explores digital typography in an analogue format, and her recent work is moving away from typography towards the visual image (2011).

My studio practice has recently evolved to examine how digital technology could be used in partnership with the artist in the way that Phillip Stearns’s does. He employs a hands-on approach to creating works using electronics. His Glitch Textiles (2011) are of particular interest because their random patterns are generated using rewired or broken cameras and output as textiles.

CONCLUSION

The introduction of the desktop computer has been responsible for a wealth of changes to the graphic design landscape, in particular, the decline of the graphic designer’s inclination to stimulate the tactile senses. Instead they favour the convenience of keyboards, trackpads, touch screens, and smooth coated papers that promote anonymity.

Typography as an art form is also undergoing reinvention as a result of the digital revolution, but the use of type is still embedded within graphic design as a primary tool of communication. If it is to be preserved, the art of typography must have a clear and renewed focus as a visual art form.

According to my research findings, online audiences appreciate written messages more if the typography is executed in a way that is clearly time-consuming, creative in its use of materials, and exhibits a visual tactility rather than being solely digital in its appearance. Touch, it would appear, is not solely for communicating with the vision-impaired.

In the digital era, graphic designers have demonstrated a need to creatively express themselves outside of their commercial work and tactile typography is emerging as a unique form within the field of graphic design—fuelled by the popularity of online image sharing. My research sets out to discover if engaging touch is an effective way to reinvigorate communication and my own creativity. At this early stage, the results are overwhelmingly positive.

Over the last two years, I have established the term ‘tactile typography’ (see Google) within the online design community, and built a new body of visual art that has raised my profile as a designer/artist considerably. I seem to have straddled the divide between graphic design and fine art.

There are many graphic designers working within the companion areas of typography and fine art, writing their own briefs to reinvigorate their creativity and raise their profile as visual artists, but none of them are using tactile typography specifically to reinterpret the digital aesthetic in ways that can be touched and experienced. This gap is one my studio research aims to fill. By referencing the digital aesthetic in the real world, my ‘slow’ tactile typography gives new appreciation and awareness of typography as an art form to an audience over-saturated with ‘fast’ digital messages. The resulting body of work fits within the emerging confines of the new aesthetic: time-consuming artefacts of the digital world made real.

REFERENCES


Rivers are often contested zones. They are used to demarcate territory, separating states and countries; they offer precious resources in the form of fresh water and transport; and they bring the aquatic and the terrestrial into close proximity, connecting inland areas to the sea. Through two works of my own and those of several others, this paper examines works of art that address the roles a river is perceived to perform for a city. In particular, my work examines the context of a river in flood, and when flooding causes the “use value” of a river as a waste-disposal mechanism to be reversed. Underscoring this is the role of risk, and how risk underpins the perception of a river as a contested place.

To understand the riparian—the river’s edge—as an area where the social construction of nature can be summarily challenged, one only has to read Val Plumwood’s account of her close encounter with a crocodile, “Being Prey” (Plumwood 1996). As an artist living and working in Tasmania, I am aware of the role that rivers have played in the formation of the state’s self image; they are necessarily part of reflecting on Tasmania as place, as is mindfulness of the state’s social and economic divide in relation to ecological issues.

Tasmania’s contested relationship to its natural environment is well known, particularly regarding forestry, with the Tasmanian Forestry Agreement Bill having stalled in the Upper House of Tasmanian Parliament for some months (Howard 2012; The Wilderness Society 2012). However, its most infamous contestation regarded a river—the struggle to keep the Franklin River from being dammed in 1983. With the close proximity to wilderness being a key reason to live and practice in the state, many Tasmanian artists address issues of ecological debate or sustainability in their work, including Bea Maddock, David Stephenson, Neil Haddon, and Ray Arnold. Since returning to live in Tasmania after a twenty-four-year absence, my practice, long based on the social construction of nature, now engages with the concept of the river as a rich locale for re-evaluating the nature/culture interface.

Underpinning my research is that which Klaus Eder, author of the book The Social Construction of Nature, terms the “use value” of the natural world (Eder 1996, viii). Rivers have a clear use value, providing avenues of transport, water to drink, waste disposal, and irrigation. These functions are highly regarded by Western industrial culture, more so than other value systems, such as those that acknowledge the aesthetic, recreational, or ecological implications of the place made by a river. These qualities were highlighted in the struggle for the Franklin River, and are central to key environmental “river” texts of the international ecological movement throughout the twentieth century, such as John Graves’s Goodbye to a River (Graves 2002).

While many artists seek to reinforce notions of the aesthetic and communal benefit of rivers, my interest lies in the idea of its use value, its social construction, and what happens when that use value is interrupted. Since moving to a flood-prone area, my particular interest is in what happens when a river floods and its “resource” as a site of waste disposal is reversed, with contaminants and sewage coming back into the urban area that produced it. It questions human agency in relation to nature at several levels: who lives by the river and is most directly affected (who is “at risk” and who “takes risk”); who dumps in the river, perhaps miles away from the problem (who “creates risk”); and who is responsible for keeping rivers and people separate, and rivers themselves clean (who “manages risk”)?

There are other artists who have investigated such interruptions. For example, Olafur Eliasson challenged cultural ennui with natural forces through large-scale public “intervention” works in the urban context. In one of his best-known works, Green River, Eliasson put a harmless bright green dye into the rivers of cities such as Los Angeles, Stockholm, and Tokyo, creating a
startling landscape that was at once beautiful in its psychedelic colouring and frightening in its revelation of the city’s river as a living thing that may have suddenly become contaminated. His interest was in showing people in the city as they walk by that a space has dimensions, has time, and that water flows through the city with time and makes the city negotiable, tangible; it makes a difference if you do something or not . . . the idea of the city not being a picture. (TED 2009)

In an interview between Eliasson and curator Hans Ulrich Obrist about Green River, Obrist proposed that the artist’s idea . . . was to make the city visible for its inhabitants, who no longer take any notice of the way it works or what’s special about it. What you did was aimed at challenging their perception of their environment as something changeless and reassuring. (Obrist 2002)

To this, Eliasson responded:

Right. I wanted to get a fix on how the river is perceived in the city. Is it something dynamic or static? Something real or just a representation? I wanted to make it present again, get people to notice its movement and turbulence. For a few minutes there it was “hyperreal”. (Eliasson in Obrist 2002)

In the interview, Eliasson also explained how the first of these projects originated, and that he prefers to carry out his public acts of interventionist practice with no advance notice or media, so that it appears to be spontaneous. This spontaneity gives his work not only a sense of surprise, but, as Obrist detected, creates a rift in the normality of urban existence. Like a flash flood or an oil spill, there is little warning; this is not akin to the highly anticipated and closely tracked landfall of a hurricane, but rather the unexpected groundwater contamination from hydraulic fracturing (“fracking”). It’s the corollary, the collateral damage from previous action exercised elsewhere, temporally or physically. Although Eliasson acknowledged the risk he took in executing the work (that the project might not work properly; that he might be stopped by passers-by from putting the colouring powder in the river), I posit that an intervention work such as Green River deals with the concept of risk, and how risk is identified or ignored in relation to how we interact with our environment. In turn, risk is part of what defines or transforms a place into a contested place; a river becomes contested when it goes “wrong”.

One scenario Green River clearly references is the possibility of an urban river becoming contaminated; the acid green Eliasson used is symbolic of extreme impurity, even poison. If such a scenario were to occur, the river would become a site of contestation, causing a cascade of questions that demand answers: where the source of the poison was located, who was allowed near the river while it was in this state, what resources could be drawn from the river, what any downstream effects would be to all life forms, and what avoidable risks (known or unknown; overt or covert) were taken that caused the contamination. Green River speaks of risk that results in a sudden and dramatic change to a place, possibly irreversible, and certainly indicative of something amiss.

While the effect of dramatic change may cause a place to become a contested zone, so does the anticipation of dramatic change to an area. Risk can be characterised as dramatic change with a negative complexion: the fear that things will not be as they were, of loss. Authors such as Deborah Lupton and John Tulloch examine the concept of risk in cultural and social theory and how this has changed over time (Lupton 1999; Tulloch and Lupton 2003), while artists such as Lucy Bleach work with the concept of risk through an ephemeral sculptural practice; Bleach researches communities who live close to volcanoes (Bleach 2012). When I returned to Tasmania and began working at the Tasmanian College of the Arts, University of Tasmania, I found myself situated in a floodplain—a contested space where policy about who could use the area and how was being written, abandoned, and re-written—and I became intrigued with the issues of risk, power, and responsibility that such contested
spaces present. The floodplain of Launceston, Tasmania, known as Inveresk/Invermay, held the spectre of the return of waste dumped in the river by Launceston’s ageing sewage plants, and this developed as a focus of the two new works presented in this paper.

The subject of my recent research has been the North Esk River that flows into Launceston. The North Esk is tidal for some kilometres, and joins with the South Esk to make the Tamar River estuary. Flooding occurs at the point where the two Esks form the Tamar. In order to contextualise my work and Tasmania’s apparent preoccupation with its rivers and their control, it is worth providing a brief background on Launceston’s river history since the time of colonisation. Through this one can also see the fresh water supply and waste-removal function that the rivers serve.

Sited in Tasmania’s north, Launceston is the third-oldest city in Australia. With a current population of just over 100,000 (Australian Bureau of Statistics 2011), it was the first city in Australia to be supplied electricity by a hydroelectric scheme, and the first to have an underground sewer system. There is a genteel Victorian fountain in the city square that celebrates the novelty and achievement of water reticulation to the city, which dates from 1859.

The fountain was sculpted by Mathurin Moreau and produced by the Val d’Osne Foundry in France (figure 1), where the design won a gold award at the Paris World Fair in 1855 (Ratcliff 1995). As an item that could be ordered from the Val d’Osne catalogue, several copies of this fountain exist around the world, including Buenos Aires and Boston. Like these others, the Launceston fountain features Neptune, Glatea, Amphitrite and Acis (Public Art Around the World 2012; Tasmanian Government 2012).

For a small city, this is a very elaborate fountain, but what most interests me is one of the plaques that accompany it (figure 2), which focuses on the engineering required to tame the water and nearby rivers, and bring them to town.

The plaque notes the building of a weir, a water race and diverting tunnel, as well as cast iron pipes and brick reservoirs. The start of work on the sewerage scheme is also noted. All of these things are about creating lines, and confining water to those lines; as soon as lines are drawn, a site of
contestation becomes a possible. These lines are between the aquatic and the terrestrial, a line that fundamentally separates humans from many other life forms; we can’t live without water, but we cannot live in it. In their practice, landscape architects Anuradha Mathur and Dilip da Cunha focus on the idea of water, and the line marked out between water and urbanisation. Through their practice, they seek to address:

How water is visualized and engaged in ways that lead to conditions of its excess and scarcity, but also the opportunities that its fluidity offers for new visualizations of terrain, design imagination, and design practice. (National Architecture Conference 2012)

In their extended practice, Mathur and da Cuhna operate as landscape architects, artists, and advocates, deconstructing the act of drawing lines, and the belief that doing so is an appropriate way to relate to water. They advocate a re-imagining of living with areas that flood, especially estuaries and alluvial plains. With roughly 60 percent of the world’s population residing along estuaries and their coasts (Lindeboom 2002, cited in Wolanski 2007, 1), this is an area of interest that impacts many people. Mathur and da Cunha are highly regarded for their work, including designs, works of art, and plans that address areas that flood, such as along the Mississippi, and Mumbai, which increasingly floods due to monsoons and record rainfall (see figures 3 and 6).

While in Australia for the 2012 National Architecture Conference in Brisbane, itself a city recovering from flooding the year prior, Mathur and da Cuhna attended a radio interview in which they proposed that the concept of flood is the result of drawing a line; only when water crosses a line we have drawn, usually a property line or other lineal demarcation of territory, do we call it a “flood” (ABC Radio National 2012). They work to develop a more nuanced relationship between land and water, noting that to separate them foregrounds the terrestrial, subjugating water to a backgrounded zone. While the land/water binary sits alongside the other binaries we create for ourselves, such as urban/rural—and is perhaps why we take it as fundamental—Mathur and da Cuhna emphasise that water is everywhere, rather than on one side of a binary. They are not alone in their identification of urban flooding as a social construction; authors Vogt, Willis, and Vince have specifically addressed this in relation to Launceston, noting that residents in the floodplain are “simultaneously ‘risk-takers’ and ‘at risk’”. They explore how this affects flood preparedness and emergency management (Vogt, Willis, and Vince 2008). However, Mathur and da Cuhna take a different approach through their work, reconceptualising the boundary line that demarcates a flood.

Their working method, which includes individual works of art and exhibitions, is influenced by that of James Corner, who, with photographer Alex McLean, published Taking Measures across the American Landscape (1996). This seminal text incorporates “the planometric or synoptic view in aerial photographs, maps and collage-drawings to represent ... operational imperatives” in relation to contemporary landscape practice, which Mathur, once a student
of Corner’s, has continued in conjunction with da Cuhna (Waldheim and Erickson 2002).

The northern campus of the Tasmanian College of the Arts not only sits in a floodplain but in a tight bend in a tidal river, very close to where it joins another river to form an estuary. The first question that was posed to me on my first day of work was whether I was aware of the flood management plan. Images of impending disaster are common in areas prone to flooding, and in Launceston this includes maps provided by the local council that are freely available on their website, showing what would happen in a one-in-100-year flood if there were no levees. However, there are levees in Launceston, about ten kilometres of them, which have recently been reconstructed and strengthened (figures 4 and 5).

Nevertheless, the risk of flood is a continuing worry, and is part of what defines the area, the last flood, in 1929, having killed twenty-two people and damaged 2000 buildings (Maiden 2009).

Indeed, the strengthening of levees is argued by some to lead to a “levee paradox”, where the reduction in flood threat stimulates development in the floodplain, thereby creating higher potential economic loss, which is then represented as a “risk” (Smith 2009). Mathur and da Cuhna’s approach broadens the dialogue around risk through opening the interpretation of mapping and the act of drawing a line, both of which are key in their work along with the use of historical maps depicting “fluid” landscapes (da Cunha 2012).

For many years my practice has examined the cultural construction of nature, and takes several different forms. Living in a city that floods, and being responsible for a large building full of staff and students situated in a floodplain, has directed my practice toward addressing the role of water in our lives. I began with investigating the North Esk, the tidal river that circles the School at the east, and to a lesser extent, the Tamar Estuary, which is to the west. As I learned about Launceston’s history of water control, and its “first” of having an underground sewerage system, I became aware that it also, therefore, has the most aged sewerage system in the country.

I investigated where the sewage plants were, and which of them would be likely to affect my workplace if there were a flood, as floods cause backpressure in sewerage systems. Launceston’s
geographic position is not unusual, nor is its ageing sewerage system, which is common to many post-colonial countries. However, “the Tamar and its tributaries drain a catchment area of approximately 10,000 square kilometres, comprising over one-fifth of Tasmania’s land mass”, which is a very large area (Australian Government Department of Sustainability, Environment, Water, Population and Communities 2012).

This means that flood control, ecology, environmental protection, and economy are competing imperatives when living with the Esk Rivers and Tamar Estuary in Tasmania. Estuaries provide rich alluvial plains good for agriculture, so it is unsurprising that they are so attractive to human development.

In Mathur and da Cunha’s book *Soak: Mumbai in an Estuary*, the authors note:

Mumbai’s estuary . . . does not work by probabilities and control as master plans do. Instead it works by possibilities and resilience, absorbing and deflecting. It calls not for end scenarios but initiations, seeds that evolve by a visual, political and technological fluidity and agility that befits the temporality, uncertainty and complexity of a terrain between land and sea. (Mathur and da Cunha 2009, 8)

Tasmania’s Tamar Estuary is the subject of many reports and surveys, due to attempts to improve its health and flow. Coastal oceanographer Eric Wolanski notes that estuaries are subject to degradation through sedimentation from deforestation and erosion; poor practices, such as overgrazing, overfishing and trawling; removal of wetlands; excessive nutrients caused by sewage and animal waste, as well as other pollutants. And, while dams stem flows, dykes and levees increase flows into the estuary ecosystem by removing the “buffer zone” provided by natural floodplains (Wolanski 2007, 2–10). Wolanski notes that:

Because it progressively fills with sediment, an estuary has an age, akin to a living organism in evolution. It starts with youth, it matures, and then it becomes old; it can be rejuvenated. (Wolanski 2001, 1)
While efforts are currently being made to rejuvenate the Tamar Estuary, it appears that not as much work is being done on the North Esk River. I set about my own mapping of the river, starting where it meets the Tamar Estuary and going upriver to a point above the first sewerage plant, above where the tides end due to a weir, to the first fresh water recreational area outside the metropolitan area. Called Corra Linn, this is an area where the river forks around a small island, then re-joins, making a sharp 90-degree angle through the dolerite rock for which Tasmania is known. The upper reaches of this direction are a source of Launceston’s drinking water, and Corra Linn is a picnic and swimming spot, the geomorphology making for combination of swift and slow water.

Simultaneously, I began research on the health of the North Esk, and learned that, like many rivers, it occasionally suffers from high levels of *E. coli* bacteria, particularly in times of flood. Further research led to an image that had a strong visual sense of flow and also a right-angle bend, which aligned with the sharp change in direction of the river at Corra Linn. The image was of genetically modified *E. coli*, modified to fluoresce. Having no microbiology lab of my own and this particular image being unavailable, I sought another *E. coli* image from a stock-photography business, and coloured it green to mimic the fluorescent image. I then had thousands of postcards printed up, as rivers are often the subjects of postcard imagery because they are sites of recreation and navigation. But it was not the picturesque I was engaging; rather, it was the microscopic affect on the macroscopic.

These postcards were mapped to the plan of the North Esk river, to form a work titled *LumenEsk*.
Figure 10 LumenEsk 2011, postcards, 1800cm length. Photographer: Evan Starkey.

Figure 11 LumenEsk (detail) 2011, postcards
(figures 7–12). It covered the area from Corra Linn and its island and progressed over a length of eighteen metres across the floor in the Academy Gallery in Launceston, shown here.

The idea that the *E. coli* in the river could be luminescent, so that one could see what effect humans have on the river’s health, became a way to portray data regarding *E. coli* levels in the river.

I worked to the plan of the river to understand where it had looped back on itself over time, and where it had been straightened near urban development. In this large format, the sinuous curves of the river are apparent, including where oxbow lakes have formed, and sharp right-angle bends in the upper reaches where the river runs through dolerite stone formations.

By contrast, Mathur and da Cuhna employ and advocate the need to represent rivers in section rather than in plan, which is a different visual approach. In much of their work, their relationship to the representation of data is conventional, no doubt out of necessity. Working in the fields of landscape architecture and urban planning, they often need to engage with engineers and researchers in presenting and combining other datasets (Bressie and Horwitz 2012). Their approach to measuring, like that of Corner, is to be accurate but interpretative, as noted in foreword of their book *Soak*:

The work of Anuradha Mathur and Dilip da Cunha inspires us to create a wetter, softer, science of the city, which might allow number, measure and border to soak up the messages of the human sensorium, of memory and dreaming, which soften the lines between density and lived demography. . . . It produces an ever-shifting medium through which the “production of locality” is enabled. (Appadurai 2009, viii)

Later that same year, I created another work that focused directly on the site at Corra Linn, in response to it being the last “clean” freshwater recreational area of the river before it arrives the city. I chose the recreational area because of its recognisability, and because it is part of the idea of the commons; that which is owned and cared for by all.
Figure 14 Fluid Dynamics 2011, toilet tissue, 850 x 700 x 100cm. Photographer: Evan Starkey.

Figure 15 Fluid Dynamics 2011, toilet tissue, 850 x 700 x 100cm. Photographer: Evan Starkey.
This work, titled *Fluid Dynamics* (figures 13–17), re-imagines the topography around the site of Corra Linn, and is constructed entirely of toilet tissue.

In *Fluid Dynamics*, the river is constructed as a walkway through the work, which makes the line drawn by the river an active part of viewing the work, and highlights the linearity with which people conceive of the river, our interpretation of it as a boundary.

Directing viewer navigation though the river’s path would normally only be carried out by those in kayaks or rowing sculls; much of the river in the upper reaches is in a deep gorge, and well known to kayakers, while the lower reaches in the floodplains are often dotted with sculls. The area portrayed is from the upper reaches, just where the river rapidly exits a gorge. Only where the right angle off the island appears does it open up and therefore slow in speed, and this is the site of the picnic area.

The formation of the walking path through the work aligns with the course of the river, and therefore places one in the river, rather than on the side bank, from which a river is usually observed and objectified through the gaze. The tissue that forms the work would move slightly as one walked through it, in response to the movement of air. The dynamic and fluid nature of the tissue references not only the “dirty work” a river does for a city, but also water’s surface in turbidity, and whiteness in froth or pollution.

This installation is the second in what I intend as a series looking at rivers and flood plains as contested places, and expands the dialogue on nature beyond that of “use value”. Part of what I wrote for the catalogue essay for this exhibition fits well as a closing statement:

> Through our own living processes, we engage with this system of ebb and flow everyday; we take from the river, and we add to it. We are part of its system in a fluid way, both literally and metaphorically. This relationship is dynamic. The river also operates as a body—constantly moving and changing, being healthy or becoming ill, even its course changing over time. Just as trees are water pumps, drawing water from the ground and aspirating it into the air and therefore back...
into the water cycle, we are a part of the water cycle. Our interactions with rivers form part of that relationship. (Sierra 2011)

REFERENCES


Corner, James, and Alex S. MacLean. 1996. Tainting Measures across the American Landscape. New Haven: Yale University Press.


Figure 17 Fluid Dynamics [detail] 2011, toilet tissue. Photographer: Evan Starkey.
The performance space is one of response, as is its design. Key practitioners in scenography—the field of performance design—have interrogated a response to developments in their cultures, reforming stage design in the process. The concept of the stage as a machine is taken from Edward Gordon Craig’s *scenes*, Vsevolod Meyerhold’s *machine*, and Oskar Schlemmer’s *mechanistic organism*; the stage is a space for performance rather than a representation of location. This article explores this stage machine within today’s digital culture, and proposes that the incorporation of interactive, real-time technologies have led to a *digital stage machine*. Unlike a traditional theatrical set, the digital stage machine offers a process-orientated performance through interaction. As such, this machine-for-performance can offer unlimited variation in its configuration.

As a scenographer, I chose to continue the theme of response demonstrated by my predecessors, which led to a practical investigation of the digital machine. This article details the combination of studio-based investigation and literary research that formed my research. Conducted as part of an Honours degree at Queensland University of Technology (QUT), this project embraced a practice-led research methodology within the field of postdramatic performance (Lehmann 2006). Practice-led research can be understood as research “initiated in practice, where questions, problems, challenges are identified and formed by the needs of practice and practitioners”, and the “research strategy is carried out through practice” (Gray in Haseman 2010, 3).

In order to discern the machine’s potential, I decided to produce a functional example, which I achieved through a combination of short experiments (Figure 1), creative development, and the installation, programming, and testing of my final machine within a performance venue. Opened to the public for eight showings, this responsive environment interacted with its inhabitants to co-create an aural and visual response to a selected text—in this iteration, Shakespeare’s *Hamlet*. Its success would be based on the machine’s ability to respond to its users with the creation of engaging imagery and sound, which altered the composition of the space. The stability of the system would also be a factor.

This paper begins with an overview of the field of scenography, highlighting the theme of response evidenced by early practitioners. This theme moves the discussion towards a consideration of digital culture and the technology it produces. I examine the influence of these tools on the concepts of time and the audience, before identifying the shift towards process-orientated performance design. The latter half of the paper details the studio processes undertaken through this research, and concludes with a description and assessment of my completed machine.

**SCENOGRAPHY AND THE STAGE MACHINE**

To understand the influence of digital technologies on the stage machine, it is necessary to examine the field of stage design. Scenography is a holistic approach to composing the space in which performance occurs. No component is privileged in the production of meaning. Instead, all the elements of the space—staging, sound, lighting, projected imagery, text, direction, actors, and audience/spectators—are considered vital to the performance experience. Joslin McKinney and Philip Butterworth suggest that scenography involves:

> . . . the manipulation and orchestration of the performance environment [...] Scenography is not simply concerned with reception and engagement. It is a sensory as well as an intellectual experience [...] Operation of images open up the range of possible
Christopher Baugh argues the scenographer and their role is now “universally accepted” as being “artists who have responsibility for all the visual and aural contributions of theatre and performance: the stage setting and properties, costume design, lighting and sound design” (Baugh 2005, 84). The stage machine is a conceptual cornerstone of scenographic practice; the advent of this machine as “a physical construct that theatrically locates and enables the public act of performance” is directly linked to the early practitioners of scenography (Baugh 2005, 46). In these machines for performance, the “scenographic environment is controlled by the performer” (McKinney and Butterworth 2009, 142).

The stage machine concept can be traced to the practice of Edward Gordon Craig (Baugh 2005, 47), who argued that “while impersonation is in the theatre, the Theatre can never be free” (Craig 1911, 36). Craig suggested the stage was “composed of strangely contradictory elements; of the organic and the inorganic hopelessly clinging together” in a “parody of purpose” (Craig 1983, 40, 41). Only by embracing one or the other could theatre begin to create art of its own (Craig 1911, 30). His practice responded to these concerns as he attempted to “[construct] a single working setting whose variety would be inexhaustible” (Craig 1983, 103). This flexible space rejected traditional design conventions, offering a stage that facilitated performance without replicating any ‘real’ location.

Bauhaus practitioner Oskar Schlemmer also investigated the stage as machine in response to the mechanisation of his German society (Wick 2000, 267, 269; Schlemmer 1972, 126–127). Like Craig, Schlemmer saw the stage as a space to respond to the issues of his era, rather than a place to recreate locations in a traditional manner. His practice suggested that through the motion of form, light, and colour—at first as separate elements, and then as a heterogeneous collection—the theatrical space becomes moving visual artistry:

Such kaleidoscopic play, at once infinitely variable and strictly organised, would constitute—theoretically—the absolute visual stage (Schaubühne). Man, the animated being, would be banned from view
in this mechanistic organism. He would stand as “the perfect engineer” at the central switchboard, from where he would direct this feast for the eyes. (Schlemmer 1961, 22, original emphasis)

Schlemmer proposed a space that is infinitely flexible and responsive, yet tightly structured; a space where the human form is not necessary for performance to occur, but the elements of the stage itself perform (Schlemmer 1961, 22). Schlemmer’s theories also began to recognise the role of technology in the act of performance.

Concurrently, Vsevolod Meyerhold was responding to the mechanisation of Russian culture. Together with designer Lyubov Popova, he offered one of the clearest examples of the stage machine in the design for *The Magnaminous Cuckold* (1922). This abstract construction is “most associated with the concept of scenography serving as a machine, a constructed, functional place for the making of theatre—a physical framework for performance” (Baugh 2005, 62).

Lastly, the more recent work of Joseph Svoboda provides further evidence of the stage machine. A seminal figure in the field, his “scenography brought together the moving scenes of Craig and the constructed, self-referential theatricality of Meyerhold [creating] a ‘text’ of performance using the materials and technologies of theatre as a palette of opportunities” (Baugh 2005, 93). Svoboda recognised technology’s potential to take the “empty void” of the stage space and not simply build a machine to stand on stage, but convert it into a “larger, endlessly transformable machine” (Baugh 2005, 93).

Thus, the work of these scenographers represents a response to cultural shifts and to past practice. Craig, Schlemmer, Meyerhold, and Popova rejected the traditional stage in the spirit of the modernist movement. Several decades later, Svoboda’s response to these artists was made possible through the new technologies afforded to him. All recognise the role that design, and the technology that comprises design, plays in the performance act. In turn, this has challenged me, as a scenographer, to reconsider the stage machine concept within our current digital culture.

**Digital Culture**

Charlie Gere suggests that the “pervasion of digital technologies in society” is due to the “last 30 years [which has] seen both the rise of globalisation and the domination of free market capitalism, the increasing ubiquity of information and communication technologies, and the burgeoning power and influence of techno-science” (2002, 10). The advent of such technologies has led to a new “distinctive digital culture”, where “digital can stand for a particular way of life of a group or groups of people at a certain period of history” (Gere 2002, 12). The post-information society (which spanned from the early 1970s to the late 1980s) gave birth to a digital generation—“a generation defined in and through its experience of digital computer technology” (Buckingham and Willet 2006, 1). Gere suggests the digital is “far more than simply either discrete data or the machines that use such data”; instead, it “defines and encompasses the ways of thinking and doing that are embodied within that technology, and which make its development possible” (Gere 2002, 11, 13).

Digital culture has changed the field of performance, and practices—including robotics, virtual reality, sensing/activating equipment, and telematics techniques—are increasingly interrogated on the stage. Johannes Birringer argues these digital technologies have “altered artistic practices and aesthetic experiences” (2008, xvii).

As Philip Auslander suggests, this “attenuated incursion of media technology” within the performance space gives rise to issues of mediation and mediatisation, while challenging the concept of “liveness” (1999, 26). The “intermedial” performance space emerged from these challenges; in it, “boundaries are softened [and] we are in-between and within a mixing of spaces, media and realities” (Chapple and Kattenbelt 2006, 12). The digital performance genre emerged from this shift to the intermedial. Birringer applies the term “digital performance” to “performances that depend on the use of digital interfaces” (2008, xii), and Steve Dixon suggests it includes “all performance works where computer technologies play a key role rather than a subsidiary one in content, techniques,
aesthetics, or delivery forms” (2007, 3, original emphasis). Many practitioners in this field use the digital stage machine, as they seek out “ways to incorporate technology as an essential response to what is happening around them” (Palmer 2007, 109). These include, in rough chronological order:

• The American-based Troika Ranch, which was founded in 1993 by Mark Coniglio and Dawn Stoppelio. The term “troika” is rooted in the Russian word for “trio”, and is a reflection of the company’s combination of dance, theatre, and media (Saggini 2003; Kepner 1997, 14). In works such as *Future Memory* (2003) and *16 [R]evolutions* (2006), they use interactive technology, such as motion sensors, to create performance spaces that respond and adapt to their inhabitants. Such designs offer the infinite variation suggested by the digital stage machine. Troika Ranch also supply the program that controlled the projection system of my machine, *Isadora* (2012);

• Klaus Obermaier, whose *Apparition* (2004) used sensors on a dancer’s body to alter projected video in real-time, allowing the stage to become the “infinitely variable” environment that Schlemmer discussed (1961, 22);

• Chunky Moves, whose *Mortal Engine* (2008) used extensive projection mapping, motion sensors, and laser technology to create an responsive performance environment that was in constant interaction with its inhabitants;

• William Forsythe, whose online performance object *Synchronous Objects* (2012) “reveals the interlocking systems of organisation in *One Flat Thing, Reproduced* originally staged in 2001” (*Synchronous Objects: Introduction* 2012). Motion sensors and post-production visualisation map the relationships within the space, allowing the technology and design to act as a performance in its own right (*Synchronous Objects: Alignment Annotations* 2012).

**THE TOOLS OF DIGITAL PERFORMANCE**

The practitioners listed above interrogate the new tools of the digital performance field: interactive, real-time technologies. These technologies—which include live sound and camera feeds, motion sensors, programmable interfaces, and immersive interactive environments—can be considered as the building blocks of the spaces that early scenographers, including Craig, Schlemmer, and Meyerhold, proposed. They also allow a design to be composed through an interactive relationship with its inhabitants. The *Oxford English Dictionary* defines ‘interactive’ as “pertaining to [a] computer or other electronic device that allows a two-way flow of information between it and a user, responding immediately to the latter’s input”. Birringer understands an “interactive system” as one that “allows performers or audience members (users) to generate, synthesise and process digital objects within a shared real-time environment experienced through sensory engagement” (2008, 110). These definitions present two important concepts. First, interaction occurs immediately, in real-time, where the changes in the system are not prepared. Second, the human interacting with the machine can be assigned a new title: the user.

**REAL-TIME**

According to the *Oxford English Dictionary*, ‘real-time’ is understood as “designating or relating to a system in which input data is processed quickly so that it is available virtually immediately as feedback to the process from which it emanates”. Gere’s *Art, Time and Technology* (2006) explores the development of such systems, suggesting real-time not only describes current technology, but society’s shift towards instantaneity as it strives for faster connections, “one result of which is that technologies themselves are beginning to evolve ever faster” (2006, 1). He asserts that such technology developed as a response to a paranoia phenomenon in late-1960s America (Gere 2006, 109). The Cold War gave birth to equipment that now forms the basis of all computing systems, including “video displays, effective computer languages, graphic-display techniques [. . .] multiprocessing and networking” (Gere 2006, 102). Since its origin in early warning systems and missile delivery programs, this technology has depended upon stimulus to function. Initially, this stimulus was passive—for example, the detection of an aircraft by radar. As computing advanced and its applications expanded, the input became direct and intentional—for example, typing into a keyboard. In these later cases, the user of the system was the source of the machine’s stimulus.
As the definitions of interactive provided above suggest, the audience member can be reimagined as ‘user’. Inside the machine, the separation of the work of art and the audience is challenged because, “in interactive art there is no audience but, strictly speaking, only users and interface participants” (Birringer 2008, xxiii). Writing on the subject of performance design, Birringer argues a user is not a passive receiver, but an active participant within the space, “who experiences not a static completed work, but an intelligent, responsive environment [that] requires the participant to engage with the various interfaces that control and mediate the aesthetic as well as psychological processes the work harbours” (Birringer 2008, 179). In my search for a functioning digital stage machine, I wanted to connect a different type of body to the design. While trained performers are skilled at engaging with space, I needed to challenge the machine to adapt to any circumstance or user. As such, uninformed members of the public were invited to attend short performances of the machine, where they provided stimulus and worked with the space to create the performance act. Within such a space—where only the system and the user exist—the traditional idea of theatrical product is superseded by the act of performance itself.

interactive, real-time technologies challenge our perception of liveness and the machine. They allow us to move beyond relying on text and performers to creating works through using technology itself. The digital stage machine therefore suggests a shift from performance as *object* to performance as *process*. This is a common thread of both digital and postdramatic performance. Lehmann suggests that in “contrast to other arts, which produce an object, [in performance] the aesthetic act itself (the performing) as well as the act of reception (the theatre going) take place as a real doing in the here and now” (2006, 17). Birringer sums up this ontological shift towards process by suggesting that “the techniques of interaction have begun to imply a shift from form to experience”, where
the concept of “liveness” applies not only to the “entities we can access with the machine”—the virtual gamer, the Facebook friend—but “also to the machine itself” (Auslander 1999, 62). We can therefore consider the machine as a living system, capable of responding to external influences—a co-creator in the response to the chosen text/story, performing alongside the user.

**THE CHANGED ROLE OF THE OPERATOR WITHIN THE MACHINE**

As a final note to this section on the theory underpinning my studio research, it is necessary to discuss my own role within the machine. The interactive nature of the digital stage machine changed the role of the systems operator. Extensive preparation went into structuring the performance, which is discussed in the following section. However, my role was not to adhere rigidly to these prepared cues, or attempt to recreate the same performance product each time. Rather, I acted as mediator between the technology and the users, adapting to changes in both systems. For example, I constantly monitored and adjusted the volume of microphones and speakers to guarantee feedback issues did not arise. This did not restrict the users’ experience, but rather, prevented unpleasant technical errors occurring. As Birringer suggests:

\[\ldots\] to program interfaces between performers and the computer implies the creation of an unstable, open system where control parameters can be continually negotiated if collaborative interaction is the desired aesthetic effect. (Birringer 2008, xxv)

By acting as the intermediary between the technology and the users, I was able to continually negotiate the machine’s reaction to its participants. The potentially unstable system was carefully managed to avoid a single technical issue in any of the public showings (figure 2).

**PRACTICAL INTERROGATION OF THE INFLUENCE OF DIGITAL TECHNOLOGY**

My investigation into the influence of technology was founded on my study into scenography, digital performance, and the systems-orientated approach. The two systems that converged inside...
of my machine—the technology and the user—were explored through a variety of artistic practice. This practice was broken into four parts:

- Model box experiments;
- Sound experiments;
- Phase One—creative development and user testing;
- Phase Two—final installation, programming, user testing, and showings.

Both phases of my practical research took place in a performance studio space within QUT. Nicknamed ‘The Studio’, this venue provided a starting point for my investigation of space. I needed to separate the users from traditional notions of performance, and this black box venue, with its lack of proscenium, removed the physical barrier that typically divides the stage and audience space. Birringer’s theories support this assessment, as he argues, “the proscenium is the dilemma, as long as theatre practitioners remain committed to the presentational staging of multimedia works for the consumption and aesthetic contemplation of the audience” (Birringer 2008, 189). Before Birringer, Adolphe Appia made a similar case in For a Hierarchy of Means of Expression on the Stage (2010):

Here, then, is the key point for the reform of the drama [...] the playwright will never liberate his vision if he continues to see it as necessarily connected to the line of demarcation between the theatrical production and its spectator. That separating may be occasionally desirable, but ought never to constitute the norm. From this it
follows […] that the usual arrangement of space in our theatres should slowly evolve towards a more liberal conception of dramatic art. (2010, 87)

The digital stage machine embraces this “liberal conception of dramatic art”, working in a venue that blurs the lines of stage and audience space (Appia 2010, 87; McAuley 2010, 90).

For my exploration of the influence of digital technology on the stage machine, I selected *Hamlet* as a response material, which I chose for its importance in the practice of influential scenographers, and the wealth of visual material it has generated in recent years (films, text adaptations, etc.). The machine was not to perform the original story; rather, through interaction with the users, it would co-create a visual and aural response to Shakespeare’s tragic tale.

**MODEL BOX EXPERIMENTS**

**No. 1, 12–21 March 2012**

I began by responding to Schlemmer’s theory of the “mechanised organism” (Schlemmer 1961, 22). I constructed a bare 1:20 scale theatre model box, taking dimensions from the Studio (figure 3). To better understand Schlemmer’s ideas of the stage machine, I studied his diagram of the cubical laws that govern a space (Schlemmer 1961, 22). I redrew the diagram in various ways, and then replicated it using red ribbon within the scale model box. I lit the results in various ways, exploring what “intangible forms” were created when focused light was introduced to the space (Schlemmer 1961, 21). This showed how Schlemmer understood the
space of a theatre, and was a chance for me to begin my own response to the stage.

**No. 2, 21 March 2012**
This experiment continued my response to Schlemmer’s diagram, while also exploring the stage designs of Meyerhold and the Russian constructivists. These artists recognised practicality as the sole criterion of stage design, and “condemned all that was merely depictive, decorative, or atmospheric” (Braun 1998, 178). Designs such as *The Magnanimous Cuckold* (1922) were characterised with cogs, wheels, geometric shapes, and strong lines. This experiment involved further abstraction of Schlemmer’s diagram, substituting materials and inserting contrasting shapes and letters (figure 4). As in Experiment 1, I practiced responding to a stage space, this time through the lens of the Russian constructivists.

**No.3, 4–24 April 2012**
With a firmer understanding of how early practitioners approached the stage machine, I now needed to explore the potential of available digital technology. I began by researching early 3D projection techniques for cinema (Zone 2007). Depth of image was achieved by stretching “a large number of regularly spaced parallel copper wires” across the stage space, and then rear-projecting on those wires (2007, 168). I constructed several strips of transparent fishing wire, and placed these strips in the bare model box in the vein of Schlemmer’s diagram. I projected different video content onto these strips, from the front, rear and sides of the model box (figure 5). This revealed the effectiveness of rear projection as compared to front projection, and shaped the placement of my projectors in Phase Two. It also informed the choice of video content I played through the system, favouring content that was highly contrasted and clearly defined, as opposed to more subtle options.

**SOUND EXPERIMENTS**

**No.1, 18 May 2012**
In response to Gere’s discussion of John Cage’s so-called “silent piece” *4’33”*, I conducted a sound experiment to capture the sounds of my machine’s “environment” (Gere 2006, 94). This involved recording the sounds of a data projector in different locations on the device (figure 6). The resulting audio encouraged me to create the soundscape of my final design by amplifying the equipment in real-time. (Due to system reductions, this idea did not come to pass. Instead, I used the recordings from this experiment to create the soundscape used in the performances.)

**No. 2, 22 May 2012**
This experiment loosely responded to a work titled *Rebound’s Lab* discussed in *Performance, Technology, and Science* (Birringer 2008, 195) in which the dance floor was equipped with a complex sound system allowing for “spatial...
Figure 8 Creative Development: Phase One

Figure 9 Playing with live camera feeds

Figure 10 Testing different materials as projection surfaces

Figure 11 Draft design sketches
Figure 12 Final version of the digital stage machine

Site One

Site Two

Site Three

Site Four

Figure 13 Sites 1–4
dislocation of sounds”. This prompted me to consider how the environment of a space sounds; however, unlike Sound Experiment No.1, it was the user in the space who I was interested in, rather than the technology. I placed plate microphones in a circle, and then walked between them while recording (figure 7). I had considered using this as another source of audio for the soundscape, but the resulting audio was uninteresting. However, this inspired me to use microphones as interfaces for influencing vision, rather than means of capturing sound. This was possible using the software program Troika Ranch’s software brainchild Isadora (2012), which was to be the main focus in Phase One.

PHASE ONE
12–16 June 2012
Phase One was the creative development period of my practical research in the Studio. Working independently, I divided my time between the following goals:
1  Learn TroikaTronix’s Isadora (2012) v.1.3 by reading the manual and watching the online tutorials;
2  Install various parts of the potential system, to a) learn how to operate them in situ, and b) discern whether they are appropriate and relate to my research (figures 8–9);
3  Consolidate my design and concept ideas to create a draft design by the end of the week.;
4  Test the digital stage machine—irrespective of its level of completion—with unrehearsed users.

System testing was a crucial part of Phase One. I needed a fresh perspective to gauge the machine’s potential and learn how users would approach such an environment. To facilitate this “user testing”, I invited several students into the Studio on the final day of development (Birringer 2008, 195). I had prepared ‘stations’, each with a different type of interactive interface. I asked each participant to explore the stations, giving instructions but allowing room for exploration. After these activities were completed, I questioned the users about their experience interacting with the technology and received feedback that helped structure their roles.

During Phase One, I tested possible components of the system and solved various problems. I
Figure 15 User at Site 3 speaks into a microphone that is heard in the headphones at Site 2

Figure 16 The user at Site 4 reads text into a microphone while manipulating a webcam
Figure 17 The clear plastic strips that divide the space act as projection surfaces

Figure 18 Text (Hamlet’s final words) is projected onto the floor
Figure 19 The banner

Figure 20 Various Hamlet films were sampled and projected throughout the space
trialed potential projection materials and sketched the first draft of the design (figures 10–11). I considered how people would move in the area and tested various types of interaction. In the following weeks, I traced the path of the users through the machine, and how they would interact with each other and the technology. These decisions informed the final design of my machine, which was installed and completed during Phase Two.

PHASE TWO
16–28 July 2012
In the finalised digital stage machine, the influence of interactive, real-time technology on performance, space, and the user was tested. Phase Two involved the installation, programming, and public performances of this machine. As discussed, the black box nature of the Studio space was integral to my machine. However, the lack of a prosenium arch was not enough to alter the spatial relationship of the systems. As such, the users were not placed in the seating bank, but instead were made to stand on the stage.

This allowed interaction with the technology to occur. The stage design of the machine consisted of a circular rostra pathway, four wide strips of transparent plastic, and a large transparent projection screen rigged diagonally above the pathway (figure 12).

The circular pathway guided the user through the performance. The four rostra pieces in the corners of the pathway were sites of interaction. Numbered between 1 and 4, each had a different interface setup including cameras, microphones, and headphones (figure 13).

As this iteration of the machine was a response to Hamlet, I related these four interactive sites with four characters from the text. The type of interaction that occurred was based on the personality and story arc of these characters:

• Site 1—Polonius. Actions: Stood still and was captured by a camera, which was projected in real-time. The intensity of the feed was manipulated by Site 3’s microphone (figure 14);
• Site 2—Ophelia. Actions: Listened to the voice of Site 3’s user through headphones, and
transcribed what was said onto paper. This was captured by a camera and projected;
- Site 3—Gertrude. Actions: Spoke text into microphone, heard only in the headphones at Site 2. Voice also manipulated the camera feed of Site 1 (figure 15);
- Site 4—Claudius. Actions: Read text into a microphone and was heard throughout the venue. Also manipulated a webcam, the feed from which was projected onto the other sites (figure 16).

The users were given instruction cards that loosely suggested when they start these actions. By following these instructions and interacting with the machine, the users co-created the performance. Each showing ran for approximately ten to twelve minutes.

Each site had a clear strip of plastic connected to it. Built from dozens of strands of clear polyfilm, these strips evolved from my Model Box experiments earlier in the year. They acted as a projection surface and, in the case of Sites 2, 3, and 4, as a barrier between the user and the rest of the space (figure 17). When the light and projection on these strips faded, it indicated the site was ‘deactivated’. This convention, combined with snippets of text projected on the floor, guided the users through the performance (figure 18).

Above the space was the large transparent screen or ‘banner’. The sheer size of this rear-projection screen united the performance space; arching above the pathway, it represented the key theme or character in the performance—in this case, Hamlet. I decided not to assign Hamlet to a user site, in case it placed too much focus on one user. He was represented by the largest set element, which captured and dispersed images and camera feeds onto the entire space (figure 19).

The visual and aural content of the performance was scavenged from various Hamlet-based resources, including video and audio from several films (figure 20). Text adaptions such as Heiner Müller’s Hamletmachine (Müller 1984) were used; the words spoken by Site 3 (Gertrude), and scribed by Site 2 (Ophelia), were Ophelia’s monologue (figure 21).

The digital stage machine performed eight showings, during which I acted as mediator between the two systems in the space. I also observed the efficiency of this machine I had designed. As discussed in the beginning of this article, success was to be assessed by two factors: the creation of engaging imagery and sound through interaction between machine and user; and the stability of the system. It is difficult to objectively determine how engaging the machine's output was during each showing. However, I argue that the combination of multiple forms of media (lighting, sound, projection, and tangible scenic elements), which responded and adapted in real-time to the presence of the users, ensured the space was constantly in motion. By inviting the users to offer their own images and voices to the space, the performance process engaged them more holistically than a traditional work would. Also, the uncertain element of the users guaranteed each showing was unique. These factors, combined with the pre-recorded projection and audio content, suggests that the machine was an engaging and interesting space in which to be.

As discussed earlier regarding the operator, the stability of the system was achieved through subtle mediation. The machine was tested to adapt to different vocal qualities, different operators of cameras, and this was successfully managed by slight adjustments on my part. Perhaps further research and advanced technology could produce an entirely independent machine—one that does not rely on an operator or mediator, but instead senses the presence of the user/s and begins the performance act.

Not everything was a success; many of the users commented on their unease in such a space and, while I had not intended to make the role a comforting one, I did not want anxiety to prevent people engaging with their actions. The answer to this problem lies perhaps in my own approach to the showings. While I rejected many forms of traditional theatre, I, as operator, kept myself distant from the audience. They only received written instructions and, once inside the space, I was able to help them. Why did I place a wall between us when I intentionally removed the wall between the space and the audience? This fault could be addressed in the future, with possible changes including a direct address to the users before the showings commence.
CONCLUSION
The digital stage machine tested the influence that technologies have had upon the performance space. Such systems were found to question the “liveness” of the machine, and the design itself became as much a performer as the audience (Auslander 1999, 62). This living, adaptive environment also reorganised the role of the spectator, encouraging interaction rather than passive observation. The shift from ‘audience’ to ‘user’ was a direct response to the result of the interactive, real-time systems in the space. As such, the technology moved the focus from performance product to process, and each showing was a unique, unrepeatable occurrence. Finally, the digital technology challenged the machine’s operator, as my focus changed from controlling the system to mediating the interaction between system and user.

In my role as scenographer, I responded to the current digital culture, using its technological tools to design the machine’s systems-orientated environment. This theme of response continues the practice established by Craig, Schlemmer, Meyerhold, Popova, and Svoboda. Thus, through my studio-based practice—-informed by critical theory—I was able to produce a functional example of the digital stage machine that allowed me to observe the influence of digital technology on the performance space.

REFERENCES
Isadora v.1.3.0f2 (Software: Mac OS X and Windows XP). TroskaTronix, Berlin, Germany.
While graphic design as a profession is still relatively new, for most of its existence, practitioners have been criticised for their role in damaging the environment and society through the outputs they produce and the organisations for which they communicate. In 1964, Ken Garland’s *First Things First Manifesto* condemned an industry wasting talents on “trivial purposes, which contribute little or nothing to our national prosperity”. He proposed “a reversal of priorities” and challenged designers to stop congratulating themselves for work done to sell “slimming diets, fattening diets, deodorants, fizzy water, cigarettes, roll-ons, pull-ons and slip-ons” and focus more on “more useful and more lasting forms of communication” (1964, n.p.). Victor Papanek (1985, 68) also criticised the emphasis the industry placed on consumerism and proposed that 10 percent of a studio output be devoted to activities in contemporary social, environmental, financial, and ethical spheres.

This criticism has continued through to this millennium, with an updated *First Things First Manifesto* published in 1999, and with authors, such as David Berman (2009), who repeat Papanek’s 10 percent output proposal. This scrutiny has increased as the broader population realises that the current state of being is one of unsustainable growth—as indicated by numerous reports, from *Our Common Future* (1987) by the World Commission on Environment and Development to more recent reports, such *The State of the World* (2006) by the Worldwatch Institute.

This paper examines two design paradigms that attempt to address these criticisms—‘green design’ and ‘design futures’ (both of which will be defined below)—and how both have been relevant to my work as the creative director of graphic design studio, Liveworm. At this studio, which is embedded within the Queensland College of Art, Griffith University, commercial projects are undertaken within an environment modelled on a typical ‘industry’ studio; however, all work is completed by Bachelor of Design students who are majoring in Visual Communication Design. As Liveworm’s full-time creative director, I guide and advise students through each of the projects.

As I will discuss further in this paper, concepts and methods from the green-design paradigm have proven easy to implement within this environment, while adopting a design futures philosophy has been a far more complex undertaking. This process is best described as a continual ‘work-in-progress’; however, the effort required in moving towards adopting various design futures philosophies as a core model is essential in effectively addressing the criticisms levelled at graphic design.

The general response of graphic design practitioners and studios to the problem of wasteful and environment-damaging production methods has been to examine and alter these methods. Essentially, they have modified the production methods and technologies the studio communicates with. This shift in paradigm has commonly been referred to as ‘sustainable design’, ‘environmental design’, ‘environmentally conscious design’, ‘triple bottom line design’, ‘eco-friendly design’, and many other variations. For the purposes of this paper, it will be referred to as ‘green design’. Brian Dougherty explains the common understanding of green design as:

> . . . a matter of finding and using better physical materials. Designers may research things such as recycled and tree-free papers; or try to find nontoxic inks; or devise folds and structures that result in less waste.
> (2008, 10)

‘Design futures’ is an emerging design paradigm spearheaded by the work of design theorist Tony Fry. The design futures philosophy is based around the concept that current design practice is a problem in itself—instrumental in the ever-
expanding unsustainability of our society and therefore contributing to the rapid depletion of our environment. Fry (2012, 117) asserts that this practice of “defuturing” that design is party to is “a historically embedded process that has taken and is taking the future away”.

Many designers and studios have enthusiastically embraced ‘green design’ principles, and adopted new production methods, including using recycled paper stocks, and less harmful inks and glues. They have also engaged suppliers who have examined and altered their processes according to green-design principles. Clients have also contributed in their requests of designers—for example, they may specify that their publications be printed only on recycled paper.

This has coincided with a move away from printed material in favour of digital output as this is seen to be less harmful to the environment and society at large (even if there is some evidence that the energy required for online publication is actually greater; see Vinyard 2009). Specific areas of graphic design, such as packaging, have also undergone a transformation, with emphasis being placed on examining materials used as well as systems, storage, and transportability (Jedlicka 2009).

The rhetoric promoting green design to its practitioners is persuasive and best summarised by Susan Szenasy, Metropolis magazine’s editor-in-chief, in her speech to the American Institute of Graphic Arts’ National Conference in 2003. During this rallying cry, she proclaimed:

Designers today stand on the brink of being seen by society as essential contributors to its health, safety, and welfare. If you—together with the other design professions—decide to examine the materials and processes endemic to your work, as well as demand that these materials and processes become environmentally safe, you will be the heroes of the twenty-first century. (Szenasy 2003)

Powerful and emotive statements such as these have coincided with a large volume of green-design literature that typically includes clear and practical steps to producing green-design outcomes. Common in this literature are existing case studies that are aesthetically beautiful, expertly photographed, and well presented.
An excellent and much-celebrated demonstration of a green-design approach can be found in the *Clever Little Bag* packaging for Puma shoes (Shouraboura and Bertone 2011). This project was undertaken by the renowned design studio fuseproject, located in San Francisco.

The project saw a traditional Puma cardboard shoebox redesigned and replaced with a reusable canvas bag that featured a minimal and glue-free cardboard insert (Lehrer 2011). The project was not insubstantial; according to the fuseproject website, it involved twenty-one months of study, research, and development (fuseproject 2012). The website also provides the following information about the project:

Why is it so clever? By providing structure to a cardboard sheet, the bag uses 65% less cardboard than the standard shoe box, has no laminated printing, no tissue paper, takes up less space and weighs less in shipping, and replaces the plastic retail bag. (fuseproject 2012)

The new packaging is clever; it resulted in a reduced amount of waste and CO₂ emissions in production and shipping. The impact of the packaging in the sports-store context is also pronounced (figure 1); when grouped together on display, the bright red bags visually overpower all other shoe brands around them. This isn’t the only branding benefit gained from the project: the bag can be re-used after purchase, and the Puma website displays photos of enthusiastic customers showing their different uses for the bag post purchase.

According to Dougherty’s definition, this is a great green-design outcome—it has sought out an alternative material, the structure is considered, it creates less waste, and it can be re-used by the consumer after purchase. The design was also applauded by the design industry, winning numerous awards, including Yellow Pencil Winner, Packaging, Core77 Design Award 2011; and Winner, Graphics/Identity/Packaging, GOOD DESIGN Award 2011.

While fuseproject worked hard to apply green-design principles to the packaging, it is worth considering the production principles used for the shoes themselves. Interestingly, at the time that the *Clever Little Bag* was being launched, Puma was being critiqued in an investigation into environmental harm caused by factories in China—factories owned by suppliers that Puma engages to make some of its products, including shoes (Greenpeace, 2011). Specifically, the report targeted toxic wastewater produced in these factories, which was being discharged into the Yangtze and Pearl River Deltas.

Puma’s own *Environmental Profit and Loss Report* (Puma 2011, 8) measures the environmental impact of the organisation and its many suppliers across several areas, namely water use, greenhouse-gas emissions, land use, other air pollution, and waste. The report reveals that 57 percent of Puma’s environmental impact is attributed to the production of raw materials (cattle rearing, rubber plantations, cotton farming, petroleum production, and other material), 19 percent to the processing of these materials (outsole production, insole production, textile embroidery and cutting, adhesive and paint production, leather tanning, petroleum refining, cotton weaving, and dyeing), and 18 percent to the final manufacturing stages (shoe manufacturing, apparel manufacturing, accessory manufacturing) of these products.

Puma swiftly responded to the Greenpeace investigation with a pledge to incorporate Zero Discharge of Hazardous Chemicals (ZDHC) in its supply chain by 2020. According to its own report, Puma is also investigating the environmental sustainability of its materials with plans to ensure 50 percent of its products will be “made of more sustainable materials compared to the original material” by 2015 (Puma 2012, 39).

Undoubtedly, fuseproject succeeded in creating a far more environmentally friendly packaging solution for which they should be recognised. The project was also an important step in the process that Puma is undertaking towards its production methods. Nevertheless, it is interesting that the packaging of Puma’s
shoes was given precedence over the products themselves.

The creation of Puma’s environmentally friendly packaging to ship environmentally harmful products highlights a flaw in the application of green-design methods in that the scope is often too narrow. On balance, it seems that the exercise, using Michael Braungart and William McDonough’s (2009) terminology, has just made Puma “less bad”.

By contrast, design futures recognises that if design practice casts its frame of reference wider than that of green design—incorporating not only the environmental but also the social, cultural, economical, and political spheres—it has the potential to make massive contributions to correcting the current trajectory and instead contribute to the process of “futuring” our existence (Fry 2009).

Like green design, this approach considers how messages are being communicated; however, it is far more ambitious in that it also considers what is being communicated. A far more complex and fluid paradigm, design futures, unlike green design, does not have a fixed ‘road map’ or easy one-sentence summary to follow. There are also few existing case studies.

Of particular interest to the field of graphic design is Fry’s exploration of the concept of “recoding” and the opportunity it creates for graphic design studios to “devalue people’s investment in systems, products, services and lifestyles that defuture, while at the same time, generating new ambitions and material desires bonded to life-affirming futures”. In a slightly more succinct form, Fry states that the practice of recoding has two purposes: “the exposure of the unsustainable” and “the declaration of means of sustainment” (Fry 2009, 82).

Another relevant theory is what Fry terms “platforming”—a strategy whereby a “platform of change” is established within an existing organisation (2009, 126). The aim of the platform is to create a sustainable form of the original organisation within which it can grow until it eventually replaces the existing structure.

Figure 2 Adbusters Media Foundation Blackspot sneaker 2011 © Adbusters
For design studios (such as Liveworm), this methodology is an ideal one with which to enable a smoother transition to an alternative model.

If the *Clever Little Bag* is an ideal green-design example, the *Blackspot sneaker* project by the non-profit organisation Adbusters Media Foundation (figure 2) is the equivalent design futures model. The latter differs from the former in that a creative team did not work within a limited scope in response to a client brief, but developed their own brief, defined their own scope, and created their own product (“The Blackspot Sneaker” 2004). Adbusters was able to create a product that considers the environment and society as well as a system that can be freely copied and proliferated further.

On first glance, the *Blackspot* is just like any other casual street-styled sneaker, and shares strong aesthetic links to the classic Converse *Chuck Taylor All Star* model. But, unlike many contemporary shoe manufacturers, Adbusters took many more factors into consideration to ensure that all production aspects are aligned with the highest environmental and ethical standards. Following an approach very much like green design, each shoe is constructed using recycled tires, hemp, and artificial, vegan-approved leather (Arevalo 2005). However, the approach does not start and end with the materials—the shoes are manufactured in a Fair Trade factory.

These sneakers have to be ordered directly from Adbusters or purchased from independent (typically, socially conscious and vegan-specific) retailers. This separation from the typical sneaker store is important as the consumer is made overtly aware that these shoes are not classified as just another shoe within a wider selection, and, as consumers, they know they have made an intentional choice. Thus, using Fry’s definition of recoding, the act of purchasing the shoes contributes to the exposure of the unsustainable alternatives—the consumer cannot buy the product without knowing there is something very different about it.

The Adbusters website states, “Our hope is that people with similar philosophies will be inspired by our experiment in grassroots capitalism and start their own business ventures...” (Adbusters 2012). The shoe acts as a declaration of what ‘sustainable’ entails, as each pair comes with information from Adbusters about their production methods and refers consumers to other campaigns they are part of.
While the paradigm shift towards green design is a positive step, the design industry has put far less emphasis on what it communicates through the work undertaken for a client’s project. Within a design-studio service-provider model, the message is always pre-determined and provided by the client through their project brief, and the role of the designer is to effectively communicate the client’s message.

This arrangement may lead to a socially and/or environmentally positive outcome if the client and the brief are positioned in such a way; however, this philosophy does not assist in the instance of a studio engaged by clients who contribute towards ecological or social destruction. Following this level of green-design rhetoric, if a design studio was asked to produce a publication for a coal-mining organisation, the answer would be to publish the document online or print it on recycled paper and ignore what is being communicated and by whom, choosing to only focus on how.

The difference in the examples of fuseproject and Adbusters is clear; Adbusters was able to consider the issue in a far wider paradigm than the restricted framework and scope imposed on fuseproject. The result is also clearly different; the Adbusters project created a green (and socially responsible) system and product while fuseproject was only able to create green packaging. When the additional benefits in the social, cultural, economical, and political spheres are taken into account, the deficiencies in a green-design approach become even clearer.

Alistair Fuad-Luke (2009, 49) notes that “significant shifts in individual and collective behaviour are required in combination with eco-effective design” to begin to address the various crises facing humankind. Other writers in the field, such as Fry (2009), agree, and also champion that this kind of paradigm shift is urgently required rather than just focusing on the way in which something is manufactured and the materials used to do so.

The green-design concept is easily understood and the changes involved are not difficult to implement. For design practitioners and studios, it’s clear to see how adopting the green-design paradigm into their practice can be seen as the best way to ‘do their bit’.

In Liveworm, incorporating the ethos of green design has been a straightforward process. A decision was made that paper stocks with high environmental standards should used
Figure 5 Consume magazine 2011, internal spread by Jessica Wong, Liveworm (David Sargent, Creative Director)
whenever possible; metallic foil stamps would be avoided; and print quantities examined and reduced if warranted. Our supply chain was also investigated, with the studio assessing print suppliers on not only price and quality but also their procedures, and client websites were shifted to webhosts that use green-energy-powered servers. The studio also investigated the amount of paper off-cuts when using an offset printing press and discovered that by using a page size just smaller than the ISO standard A4 portrait (16.8cm x 24cm), more pages per sheet could be produced, reducing the amount of paper wasted when trimmed. This is now used whenever possible and actively promoted as a cost-effective option to clients.

These methods quickly and easily became the default option and are often discussed with clients at the early stages of projects. However, incorporating design futures concepts has been far more challenging and complex. Where green design has firmer parameters, guidelines, and precedents, the philosophy of design futures is fluid, far-reaching, and still evolving. It also contains an element of the ‘unknown’, requiring those involved to “take risks, to venture out from one’s place of security”, as proclaimed by Fry (2000, n.p.).

My implementation of design futures in relation to Liveworm can be summarised as follows: projects and clients need to be critically examined; those with agendas that can be identified as harmful to the environment or society at large need to be replaced with more compatible clients and projects; and students within the studio need to be exposed to experiences and concepts outside of the current service-provider model.

Developing a platform of change within the studio has been the first important step. The platform was based on the simple premise that the studio would undertake projects for actively socially and environmentally responsible clients using the existing client base as a financial ‘safety net’. The platform started small, with the view of adhering to Papanek’s suggestion of devoting 10 percent of studio time to projects directed at contemporary social, environmental, financial, and ethical spheres. However, as the studio promoted finished projects through its website (which has been identified as the key interface for prospective clients), it attracted many more like-minded clients and projects. This has seen the amount of projects grow beyond that initial 10 percent—and continue to grow. The platform appears to be heading towards even more growth in the future.

A typical concern in undertaking projects for non-commercial clients is the level of financial remuneration involved. In terms of the projects Liveworm has completed to date, it has been discovered that many projects arrive with limited or no financial remuneration to offer. Nevertheless, a surprising amount of new clients have approached the studio with projects that have on-par funding with traditional commercial projects.

Figures 3 to 7 display a range of the project outcomes undertaken with this model. The Rainbow Bridge branding project (figure 3) was undertaken for Queensland Association for Healthy Communities. This initiative was aimed at providing crucial information to newly arrived or visiting lesbian, gay, bisexual, and transgender people in Queensland. Due to a majority of the funding for this organisation being cut (Sheldrick 2012), the initiative found itself with very little funding remaining to complete the project. Due to the platforming model, Liveworm was able to take on this project at a reduced fee.

The publication design for Walking the Path to Recovery (figure 4) was undertaken for the Yeronga Community Centre. This project was completed pro bono by Liveworm in exchange for being listed as a supporter of the centre.

Eating Disorders Queensland commissioned Liveworm to design the first issue of their Consume magazine (figures 5 and 6). The magazine delivered information on a range of contemporary youth issues (such as eating disorders, the environment, body image, sexuality, and religion) to high school-students throughout Queensland. This project had an adequate level of funding for our services; however, due to the importance of the messages promoted within the magazine, it was decided that the studio would provide work above and beyond the amount of hours charged to ensure the outcome was the best it could be.

An intriguing side effect of this new range of clients and projects has been the effect on student
designers. I have observed positive reactions from them that suggest that, because these projects have a greater inherent ‘meaning’ and are aimed at ‘doing good’, students enjoy working on them more than other projects and strive to do their best work on them. Earlier case-study-based (Stake 1995) interview research with students provides data that confirms this type of behaviour, as well as indicates that the enthusiasm and passion of the clients involved is another contributing factor to students’ work. Gathering more data from a wider range of students is the focus of future case-study-based research I plan to undertake.

Looking at these two paradigms and their influence on the studio, it is clear that both green design and design futures are essential ideologies to incorporate into practice. Adopting green-design methods has been an easy step for the studio to make; however, as discussed, adopting this approach alone is insufficient in the face of criticism now being levelled at the graphic design industry. As Fuad-Luke attests, a green-design approach needs to be combined with further behaviour change and the promotion of this change.

Could a recording project such as the Blackspot sneaker be something Liveworm may be able to undertake in the future? The projects and strategies that the studio has so far undertaken are a modest start towards this goal and have only scratched the surface of the multiple concepts and ideas found within the design futures philosophy. One certainty, however, is that these first few steps have been important and the trajectory the studio is now heading along is an imperative one.

REFERENCES
Dominique Falla is also known as the “Tactile Typographer” due to the specific nature of her art practice. She is currently a Doctor of Visual Arts candidate at Queensland College of Art (QCA), Griffith University, researching tactile and dimensional typography. Dominique is program convener of the Bachelor of Digital Media at QCA.

David Sargent is Creative Director of Liveworm and convenor of the Visual Communication Design program at QCA. He is currently completing his Master of Visual Arts at QCA. His research focuses on investigating alternative projects and practices in a student-run studio.

Tessa Smallhorn is a scenographer for live performance, specialising in projection systems and content. A researcher and lecturer at Queensland University of Technology (QUT), she is interested in the influence and application of digital systems on the performance space. Tessa holds a Bachelor of Creative Industries (Honours) from QUT.

Professor Marie Sierra is Head of the Tasmanian College of the Arts at the University of Tasmania. The focus of her art practice is nature as a social construct, and she publishes regularly on contemporary art.

Dr Anne Taylor is an artist and independent scholar. Since completing her PhD at QCA, she has continued her research into the ethical dimensions of contemporary art through feminist perspectives, as well as the role of the aesthetic experience in human interactions with the environment.

Dr Mark Titmarsh is a visual artist whose current work, executed under the rubric of 'expanded painting', is a form of painting as constructed colour that dissimulates into objects, videos, performances, and texts. He is also Lecturer in Interdisciplinary Studies at the School of Design, University of Technology, Sydney.

Associate Professor Cameron Tonkinwise is Director of Design Studies, Carnegie Mellon University, Pittsburgh, USA. For more than a decade, Cameron has published and taught on product service systems’ design and collaborative consumption—two areas of design that focus on using existing resources to create new products with low environmental impact.