



Connections: Experimental Design

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Connections: Experimental Design

Current debates about the avant-garde and design range between claims that design merely reproduces strategies of the artistic avant-garde, and assertions that design is avant-garde by its very definition.¹

Connections: Experimental Design starts from a different premise. The significance of designs generated without client commissions, colloquially known as experimental design, lies not simply in the fact that they transgress particular conventions of certain mediums, as is standard in artistic avant-gardes. *Connections* aims instead to present works that question the ubiquitous means-end rationality of design's role in the production/consumption cycle of contemporary Western society, and examine possibilities for change.

Presenting a range of alternative design futures, experimental design is conscious of the practical implications in design and the futures that design creates. Experimental design in fact reveals ways of conceptualizing design as a significant and influential form of practice-as-research. The works in *Connections* challenge enduring myths that design is ahistorical, antithetical to convention, and simply pursues innovation for its own sake. The underlying theme in the exhibition is that experimental practice is one area of design where practitioners in design, engineering, and fine art comment reflexively on institutional convention, instrumental reason, and renegotiate relationships with an indeterminate audience, but necessarily address concerns in the wider population.

Design and the avant-garde

A number of influential perspectives about the avant-garde in design criticism are informed by those put forward in the fine arts context by art theorists Peter Bürger² and Hal Foster.³ Bürger asserts that the historic avant-garde aimed to subvert and overturn institutional conventions so that fine art would become available to a wider constituency than only cultural elites. Countering Bürger's claim that the avant-garde was a failed project and therefore no longer relevant, Foster claims that sustaining neo avant-garde art practices provides an important space to challenge institutionalized practices as they evolve. In general terms, much design criticism tends to either transpose Bürger's Marxist analysis of the artistic avant-garde and its demise, thereby rejecting any relevance of the avant-garde to design; or argue that Foster's understanding of the possibilities of the artistic avant-garde applies to design with only minimal recognition of design's specific history, aims, status and ambitions.

Design critics such as Guy Julier, following Bürger's claim that the avant-garde is no longer relevant, argue for a renewed commitment to the idea of design as a service or consultancy.⁴ Design critics such as Rick Poyner, by appropriating Foster's analysis, legitimate the perceived benefits of resistance to convention and advocate increased agency for designers.⁵ While Julier's and Poyner's commentary provide many insights into the mobilization of the artistic avant-garde in design, a third perspective, that of art theorist Thierry de Duve, is particularly relevant when experimental design challenges design's audiences.

Conventions as social pacts

In contrast to Bürger's and Foster's claims debating the merits of the avant-garde, de Duve understands the avant-garde as arising from a response to broken social pacts. By implication de Duve challenges Bürger's view that the avant-garde was limited to a historically specific context, and Foster's advocacy of the avant-garde as a necessarily continuous institutional critique. For de Duve "any broken ... tradition signals a pact broken with a faction of the public, at the same time as a demand for a new pact addressed, as the case may be, to another faction."⁶ De Duve argues that the avant-garde addresses conventions as social pacts in recognition of how pacts omit certain groups in society.

While it is becoming a central rule of trade for artists, design is rarely discussed in terms of social pacts. Although the convention of the design brief may appear to be a parallel, conceiving of artistic conventions as a mutual agreement between two parties removes an overemphasis on individual liberty that underpins both Bürger and Foster and their interlocutors in design, Julier and Poyner. The implications of de Duve's suggestion that the conventions that derive from social contracts between multiple agencies shifts, in design, the emphasis from the individual practitioner and extends it to include the client, supplier, end-user and so on.

While at first glance these roles may seem definitively prescribed, in design practice there is significant scope to suggest that this is not always the case. For example, in experimental practices a client may not be involved in the initial design genesis, and if they are their role is limited to providing an open brief. Open briefs do not specify an expected outcome, but instead, describe aspects of a complex problem, such as multiple stakeholders' experiences of a particular situation. In turn, suppliers are often drawn into the earliest stages of this type of design to contribute expertise in current technologies and material processes.

As such, experimental designs, or open briefs, with multiple stakeholders, reflect in design some aspects of the conditions that de Duve describes in his argument that modern artists are no longer certain whom their specific audiences are.

Often discussed in design debate as “wicked problems”, open briefs are increasingly common. Urban planning theorists, Horst Rittel and Melvin Webber, introduced the term “wicked problems” in a discussion of second-generation systems theory.⁷ They differentiated wicked problems from “tame problems”, that they defined as addressing only a singular objective within a framework of well defined rules.

In contrast, wicked problems are less defined. More recently, design critic Richard Coyne has argued that wicked problems are not aberrations of the model of well defined problems, but that “wickedness is the norm. It is tame formulations of professional analysis that stand out as deviation.”⁸ Coyne asserts that Rittel and Webber argued against the early systems based rationalism of the design process by proposing that “the design process, and any other professional task, is only very poorly explained in terms of goal-setting, constraints [and] rules.”⁹ Rittel and Webber argued that design is, in fact, an iterative process of argumentation between the various stakeholders and designers involved.

Design and “dissentment”

De Duve explores how for the avant-garde “the other is in the medium”.¹⁰ Following art critic Clement Greenberg, de Duve argues that in contrast to “academic” artistic production that treats the medium as “a means ... in the service of an end which is to reach the public, with whom the pact is sealed in advance,”¹¹ the avant-garde practitioner is “more sensitive to the fragility of aesthetic pacts, ... he is more alert, more alarmed, perhaps more panicked by the indeterminacy of his addressee.”¹² For de Duve the result of the uncertainty of who works are intended results in practitioners addressing the medium:

as though it embodied the addressee. For him,
the other is not at the end of a chain of communication, and the medium is not a
channel or a means. ... The medium is the
other. It embodies and materializes the
otherness of the addressee.¹³

Implicitly refuting Bürger’s opposition between the avant-garde and modernism, de Duve emphasizes that what is more important is how the avant-garde relate to the conventions of the medium and how “a relation to the other is inscribed, deposited and embedded” in the medium.¹⁴ De Duve argues that the avant-garde challenges homogeneity in a “sentiment of dissent.” According to de Duve, this sentiment is one “for which all the figures of negativity can be appropriate—the feeling of emptiness or insignificance, the feeling of destruction, the feeling of conflict, of being ripped apart or separated.” For him the sentiment of dissent responds to an ethical respect for social difference.¹⁵

De Duve claims that the avant-garde appeals to an audience who share with the artist a sentiment of dissent or an understanding of the limits of convention and their broken social pacts. De Duve’s claims resonate with theorists Max Horkheimer’s and Theodor Adorno’s critique of instrumental reason. According to philosopher J.M. Bernstein, Horkheimer’s and Adorno’s analysis is that instrumental rationality leaves out “sensuous particularity” and “rational ends,”¹⁶ for the sake of an “[i]llusory universality [that] is the universality of the homogeneous same.”¹⁷ As Bernstein points out the negative dialectic of Horkheimer and Adorno is relevant to contemporary contexts where “reason which was to be the means to satisfying human ends becomes its own end, and thereby turns against the true aims of Enlightenment: freedom and happiness.”¹⁸ De Duve’s invocation of the avant-garde’s regard for the other is significant. If we consider the brief as the medium in design, the cooption of the brief by experimental designers creates a different set of responsibilities and a different range of possibilities

for design. This manoeuvre by designers provides both a measure of celebrity, and a criticality aimed at remaking pacts in countless variations of products, attitudes, and strategies. As de Duve points out, this kind of process “presses the other whom he addresses to accept the challenge of renegotiating the technical-aesthetic conventions of the medium.”¹⁹ De Duve’s comments regarding the avant-garde’s attitude to the audience is significant in experimental design because it sets up a complex of inter-relationships rather than merely focusing on designers’ transgressive tactics.

The inter-relationship of conceptual and aesthetic interpretation

In contrast to assertions that experimental design is distinct from mainstream practice because it is conceptually motivated and indifferent to formal resolution,²⁰ de Duve’s skepticism about the opposition between conceptual and aesthetic aspects of art interpretation also rings true for experimental design. He claims that instead of distinguishing the conceptual from the aesthetic, it might be better to acknowledge the twin judgements of an intuitive aesthetic response to a work, and a reflection on that judgement as the point at which “the comprehension of the work attains its conclusion.”²¹ For de Duve:

All the ‘conceptual’ work of interpretation—

and I put the word between quotation marks, so convinced am I that almost nothing in art is a matter of concepts or theory in the strict sense of the words—is left hanging between two judgments: a first judgment, aesthetic and perfectly intuitive, from which the desire to understand the work is born, and the same judgment, but in a form nourished by reflection.²²

In design it is the aesthetic and intuitive that is often privileged over the conceptual. While experimental designers are often said to prioritize the conceptual over the aesthetic, it is not exclusively so. Works included in *Connections* present tensions between the aesthetic of the work and the conceptual drivers and social contexts they address. These tensions create an oscillation between the twin judgments that de Duve describes.

The separation of art and design as specialisations

While de Duve reworks categories and relationships between modernism and the avant-garde, art critic Helmut Draxler rethinks the axes of art and design. Unquestioningly accepting the separation of art and design as specializations, according to Draxler, blocks the possibilities of “critically addressing the relations and historical dynamism between the categories.”²³ Like Coyne, Draxler argues that specialization is a key barrier to a critical expansion of design’s self-understanding. Based on this claim, his contention is that as long as the polarization of art and design is maintained, criticism is kept “within the tracks laid down by specialization,” and “will do no more than reproduce the logic of specialisation.”²⁴ Instead, Draxler proposes reshuffling the categories of art and design so that “the relations and historical dynamism between the categories” can be critically re-evaluated.²⁵ Draxler refuses the separation of art and design in Bürger’s criticism of the cooption of avant-garde strategies in advertising, and claims that Bürger is motivated by a pessimistic attitude towards the “ongoing decline of artistic integrity working hand in hand with institutional and commercial success.”²⁶ Like de Duve, Draxler shifts the focus to the conventions that are challenged, rather than only the stated aims of the artist or designer. In this way he emphasizes that the significance of practice is as a site where differences are negotiated. According to Draxler the “constitutive tension” of design is “a compromise between commission and authorship.”²⁷ From this perspective he recommends interdisciplinarity as the core of design’s institutional critique, and as such argues against design merely appropriating the “the logic of transgression that avant-garde art pursues.”²⁸

Contesting Foster’s rally against design, Draxler suggests that Foster’s argument makes no sense in the context of fine arts where artists explore servicing relationships as critique in institutional contexts, for example art works where artists mimic service roles such as museum guides. He counters Foster’s proposal that fine art needs to maintain its distance from design by arguing that:

To put it bluntly, a reference to design might be seen today as a constitutive factor for artistic practice. Whereas since the 1960s artists have continuously sought to explore the space between art and design, theory has remained caught up in the old modernist oppositions that come with a purely negative concept of design.²⁹

Draxler views Foster’s vision of “the world as contaminated by design” as a “totalizing approach, in that it desires to see the world as a single entity.”³⁰ Foster’s polarization of art and design for Draxler is riven with a “Gnostic” purity. He suggests that the relationship between art and design is more productively thought of as “a bipolar set of relations, in which various options are expressed as to what can be seen as art within bourgeois societies.”³¹ Draxler addresses how design can be rethought, caught as it is between “conformist logo design and fantastic visions of social change,”³² and points to design history to argue that in fact design is historically tied to reflections on its agency in wider social networks.

Aesthetic feeling for difference

Similar to de Duve’s argument that the avant-garde re-makes conventions as social pacts, and by doing so defends tradition rather than transgresses it, Draxler suggests that Jacques Ranciere’s theory of the regimes of the aesthetic provides more insights for understanding the interrelationships of art and design because it sees them as complementary.³³ Draxler contends that identifying “differences” and “interrelationships” between art and design is one way towards understanding how the “historical division between them came about”.³⁴ Drawing from Ranciere, Draxler argues that, if perceived in terms of “interfaces between categories” the relationship between art and design “begins at the point of difference between two or more realms and then goes on to move across this difference to make a relationship between the realms visible.”³⁵ For Draxler interfaces are “the social and media forms in which difference and points of reference can be negotiated.”³⁶ The examples he mentions of interfaces between art and design include “conceptual design” and “commercial art.” According to Draxler the exchanges between art and design are “the expression of complex mutual interaction” and not simply differences between mutually exclusive fields.³⁷

Experimental Design Now

There are dangers in identifying similarities across fields, and inadvertently minimizing key aspects of a subject of study that similitude creates. However, de Duve’s and Draxler’s accounts of the avant-garde

and the relationship between art and design access an interpretation that *H_edge* rebuts delimiting design to form, function, and fitness-to-purpose. *H_edge* by ARUP Advanced Geometry Unit (AGU) draws from the Indian Rope Trick and recent analysis that the Indian Rope Trick is an exemplar of invented history. Although the legend existed in India for centuries, its status as urban myth is thought to have been triggered by journalist John Elbert Wilkie, for the *Chicago Tribune* in 1890. The Indian Rope Trick recounts a legend of a fakir, or holy man, who throws a rope into the sky that mysteriously, forms a rigid structure.

According to the myth, the fakir sends a young boy up the straightened rope, and enraged when the boy will not return, follows him. After body parts fall from the sky, the fakir descends and gathers the disassembled body into a basket. Miraculously, the boy emerges from the basket intact. Wilkie's speculation that the trick is an example of mass hypnosis by a magician extends rather than contradicts the mythological character of the story. At one level, *H_edge* connects the precision of engineering to the power of urban myths, where illusions are accepted as fact. As such, it alerts designers to the dangers of only elaborating conventions, rather than questioning their veracity.

H_edge reveals the doubling effect of the Menger sponge, a mathematical algorithm that describes spaces between two and three dimensions by representing a permeable infinitely divided edge. As a structure *H_edge* both divides and connects space in a maze formation. The work exemplifies how to devise techniques that avoid the obvious, and thereby the endless reproduction of convention, by originating from a different starting point. The diffusion of inside and outside in *H_edge* suggests that architecture is made by people forming spaces and questions the inflated claim that architects make spaces that create peoples behaviours. *H_edge*'s perforated walls also demonstrate how the ARUP AGU aims not merely to challenge architecture but to engineer solutions that address sustainability. In taking a holistic and more complex view, *H_edge* demonstrates that the act of making and doing tests theories, and does not merely illustrate them. Paramount to this approach is a belief that extends across engineering, art, and design, of the necessity to publish and exhibit these experiments, and to translate from diverse sources, a vision that can propel audiences into new ways of thinking and exploring what is possible.

Like ARUP AGU, Dunne and Raby challenge modern design as "a style beyond style, a world of permanently valid forms."³⁸ Distinct from ARUP AGU, Dunne and Raby can be interpreted as projecting irrational fears about rationalist discourse onto robots, or simply utilizing the predispositions of robots to behaving in particular ways. Their work draws from Surrealism to imply that robots too have an unconscious and are augmented by their dreams. From this perspective, Dunne and Raby present alternatives to the ever-infinite progress that technology is touted to bring. *Technological Dreams Series No. 1* raises questions about the Enlightenment principle of progress, and wonders aloud, materially, about what might happen if we recognize the vulnerability that technologies, such as email, do not easily convey. Robots for pathos, shyness, neurosis and fearful twitching can now act out the anxieties we conceal.

Dunne's and Raby's techniques of defamiliarization mirror the artistic avant-garde but contour them, and thereby transform them, to the specific contextual limits of design. The uncanniness of the *Technological Dreams Series No. 1* is that the robots emote and bring to life Andre Breton's challenge to understand "the strange symbolic life that even the most definite and common objects lead in dreams."³⁹ Instead of the automata the Surrealists favoured, for instance the *Young Writer* inscribing "marvelous" endlessly,⁴⁰ Dunne and Raby mock the instrumentalisation of design by exaggerating its affects. For over ten years Dunne and Raby have disturbed the status quo in design's search to account for what it does, and have foregrounded the contradictions in design's relationship to end-users. They show the relevance for design of Breton's mandate that "The imaginary...is that which tends to become real."⁴¹ The hyper-rational or conceptual design recognized by Draxler can be interpreted as the core of Dunne's and Raby's approach to design. The push of the rational to the extreme of irrationality in their work, drawing from the sentiment of dissent observed by de Duve, connects to Jenny E. Sabin's investigations of textiles. Specifically textiles generated by a mix of early computation (the Jacquard loom) and mathematical models for measuring sound (the Fourier series).

Sabin's *Fourier Carpet* creates an ornamental pattern from two mathematical formula, the *sine* wave and the *cosine* wave, in a Jacquard weave of black and white wool. Updating the Modernist mandate that forms express function, the weaving represents form as a process of construction, one that is removed from the handmade traditions of craft. Named after Joseph Fourier, the inventor of mathematical equations for the measurement of sound, the weaving symbolizes aspects of the interlocking of process, form, use, and material

in functionalist design. In this case the process is an end in itself, not a means to achieve another purpose. Sabin's self generated weaving integrates industrial revolution technology, digital technology, and speculations by a 19th century scientist. Juxtaposing this combination of technologies and science challenges

design's misguided preoccupation with defining practice as only a deterministic process. While conceptual in orientation, *Fourier Carpet* prompts the twin judgments of intuitive aesthetic response and critical reflection noted by de Duve. Like *H_edge*, Sabin's work draws from representations of mathematical formula cut into fragments, but in Sabin's case presents a paradoxical juxtaposition the relationships between digitization in design, architecture, and weaving.

Although connected to *Fourier Carpet* by its reconceptualization of an aspect of design, *Re-magazine* by Jop van Bennekom is distinct in that it engages in the polemics of the authorship versus service debate. By producing a magazine that presents a range of individuals' search for identity through autonomy, van Bennekom challenges assumptions that increased agency and control is a positive for design. Since van Bennekom has claimed that *Re-magazine* is a reflexive interrogation of design's standards, it can also be interpreted as an allegory for design. *Re-magazine* points to the futility if not impossibility of design achieving self-sufficiency, and demonstrates that by definition design is fundamentally context dependent. *Re-magazine* raises questions about the purposefulness implicated in the notion of design as service. While unauthorized polemical publications and critical pamphlets have existed since the invention of the printing press, *Re-magazine* is essentially engaged in a critique of its own production and reception. *Re-magazine* is an experimental design that negotiates the values of autonomy and the implications of societal management as the crucial normative value in design (whether in terms of social reformation, or purity of function), and draws out how graphic design relies on many social pacts at any one time. As a designer-initiated collaboration *Re-magazine* presents a double ambition: to gain a certain amount of control over the means of production without idealizing autonomy; and at the same time to test and critique the conditions and conventions of magazine design. *Re-magazine* demonstrates in these ways the enabling limits of graphic design.

Saul Griffith's and Selena Griffith's *iCycle Bridge* is a flat-pack bicycle, constructed in polycarbonate, that problematizes the relationships between design, global warming, and petroleum-based products as raw material. *iCycle Bridge* operates on a number of registers regarding transportation. As a flat pack bicycle *iCycle Bridge* structurally references a local symbol, the Sydney Harbour Bridge, and recuperates, most practically for developing economies, an effect of mass-production. That is, the bike can be constructed once shipped. Developing a bicycle in this way draws from Thonet's, and more recently Ikea's, strategy of designing mass produced units as so many spare parts that are then shipped knocked-down and sold at cheaper prices. However, there is a contradiction here in that *iCycle Bridge* is a mode of transportation that provides an alternative to petroleum based transport that is constructed in a petroleum based material.

Locating the historical references for *iCycle Bridge* reveals several possibilities for this contradiction. The work can be interpreted as a combination of Dada artist Marcel Duchamp's readymade artworks, the *Bicycle wheel* (1913) and *Hat Rack* (1917), as well as referencing the *AEO seating system*, designed for Cassina in 1975 by Andrea Branzi at Archizoom. Branzi's description of the *AEO seating system* could equally apply to *iCycle Bridge* in that "the object achieves its unity only when assembled."⁴² The combination of *iCycle Bridge*'s construction in polycarbonate, the intention to ship it to developing economies, and its decoration with a structural motif from Sydney's Harbour Bridge, raises questions about function, narrative, and decoration, as well as questions about the social pacts that aid programs construct. Design's involvement in international aid programs can create the waves of consequence that were noted by Rittel and Webber, and that are sometimes omitted from accounts of design aid programs' efficacy. Perhaps it is this wicked problem that is reflected in *iCycle Bridge*'s contradictory materiality.

In contrast to *iCycle Bridge*'s modeling of design as cooperation, Anne Wilson's animation *Errant Behaviors* comments on the connections between urban design, antisocial behaviour, and 'things' behaving badly. Like *Re-magazine*, the stop-film animation emphasizes the irrationality of unlimited autonomy. The diverse aberrations of threads and their antagonisms in *Errant Behaviors* create a series of puppet plays about emotional tangles. *Errant Behaviors*' joke about certain variants of Modernist design's faith in truth-to-materials presents, from the practitioner's point of view, what it feels like when threads 'go their own way.' Like Dunne's and Raby's *Technological Dreams Series No. 1*, *Errant Behaviors* presents dystopia for our reconsideration and reflection. The animation illuminates how the rationalization of business-as-usual is just not always possible when dealing with materials.

Hot Box by Ana Mir and Emili Padros (Emiliana) points out that business-as-usual is not a useful approach when designing with people either. Recombining design and desire in terms of commodification, they update critiques of aestheticization and decontextualization in design as it was described by curator Emilio Ambasz, and design and architectural critic Manfredo Tafuri in 1972.⁴³ Both Ambasz and Tafuri refuted a popular trajectory they perceived in design at that time where unique decorative items alienated design from

its surroundings. They argued against design traveling too far “into the dangerous realm of the ‘autonomy’ of the object.”⁴⁴ Extending Ambasz’s and Tarfuri’s claims to the contemporary context, *Hot Box* revives these concerns by presenting design as a site of contradictions between autonomy, desire, design, and commodification. Like the radical designs in the 1960s and 1970s, *Hot Box* confounds expectations of design generated by the Design Reform movement of the mid nineteenth century, and the Good Design movement of the 1950s. The Design Reform movement’s aim to change society through design according to the principles of nature as they were expressed in Gothic architecture,⁴⁵ and the aim of the Good Design movement to reduce the ethical complexities of design to self-evident structures devoid of decoration, are clear cut in their objectives.⁴⁶ In contrast *Hot Box* recontextualizes prostitution, so that it is not ignored from a position of moral purity that only turns a blind eye to what it cannot control. Albeit paradoxical in that Emiliana’s critique of design’s aestheticization involves a sex worker standing on a pedestal, *Hot Box* is an imaginative shift that includes the current reality of diverse moral codes in design, and the social pacts each may require.

Hot Box’s practical function, of providing warmth and light for street sex workers, makes visible the fact of prostitution, but does not reduce design simply to visual appearance. The model for design proposed by Emiliana in fact conceptualizes the complexity and paradoxes of pleasure, voyeurism and safety. One implication of the work is that it critically negotiates and reveals the surplus and effects of contemporary commodity cultures for groups marginalized by rationalist design models. Emiliana critiques the accepted norm that defines design as a form of moral purity but does so by renegotiating the role of desire in design. From this perspective, *Hot Box* represents through design the respective effects of sexual commodification and pleasure not for the sake of improving design but in ways that aim to intervene in and transform social pacts.

Unlike Emiliana, Marti Guixe does not believe that design can solve political problems. He claims that “these problems can only be solved politically.”⁴⁷ As a demonstration of the interactions between design and politics, Guixe’s title *Autoband* refers to the German Autobahns and their function as propaganda for Nazi Germany’s ideal of rationalism. While it is widely acknowledged that their use as propaganda outweighed the Autobahn’s effectiveness as military infrastructure,⁴⁸ *Autoband* reveals the mythologizing of functionalism in design. From this basis *Autoband* is a toy designed to teach children how to negotiate the political assumptions underlying design decisions. A recurring theme in Guixe’s designs is how “decoration becomes information”.⁴⁹ By understanding information as the new nature and demonstrating the abstraction of nature to symbols, Guixe presents an interactive reconsideration of the political impact of infrastructure renovation. The dry informational tone of Guixe’s work exposes the absurdity of one tendency in Modernism, as a result of efficiencies, towards imposing social control through design. Guixe, now practicing as an “ex-designer”, explores modern design’s formulaic reductivism. Like Sabin, Guixe makes acerbic observations regarding information and decoration. Like *Technological Dreams Series No. 1*, *Autoband* points to the political implications of design conventions by hyper-rationalizing them. He turns design’s self-understanding of its social pacts with others upon design itself.

Conclusion

Each work in *Connections* creates a different relationship with the design-user and with divergent classes of design-users. Both Emiliana’s regard for the provision of safe working conditions for sex-workers in *Hot Box*, and *iCycle Cruiser*’s propositional value as a flat-pack form of transport for shipment to developing economies, comment reflexively on social and environmental crisis. Some of the works in the exhibition are represented by photographic or video documentation because design is sometimes best represented in use, for instance *Hot Box*; or because video documentation of the conceptual issues in the work are discussed by designers in ways that reveal aspects of the work that by itself design cannot, for instance the *H_edge* documentary. The questions each work asks is what will design be in the future, and what are the futures these designs produce? Understood within de Duve’s observation that the avant-garde are sensitive to social pacts, and that pacts are subject to change, these works demonstrate the critical thinking at work in contemporary experimental design.

In contrast to examples of critique in design that are promoted by say Phillippe Stark,⁵⁰ the experimental designs and artworks included in *Connections* do more than mimic strategies derived from the artistic avant-garde. The works can be better understood as demonstrating the contingency of practices that challenge the divisions between art and design. While many are embedded in the design domain, these works present tensions that prompt the oscillation between judgments of intuition and reflection observed by de Duve in fine art. Although they can be said to explicitly transform strategies derived from the artistic avant-garde, in some ways they operationalize Draxler’s claim that design is tied to social reform in ways that are unlike the artistic avant-garde. Works by Marti Guixe, Dunne and Raby, Anne Wilson, and Jenny E. Sabin, for example, satirically exaggerate the effects of instrumental approaches to design that value measurement and

control over the experiences of the design user. Other works such as *H_edge*, *iCycle Bridge*, *Re-magazine*, and *Hot Box* create narratives that point out the contradictions of some of design's traditions. Albeit distinctive in their concerns and approaches, what these works can be said to share is not simply a transgressive attitude, but a critical reflection of design's self-understanding, now.

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Endnotes

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- ² Peter Bürger *The Theory of the Avant-Garde* University of Minnesota Press, Minneapolis, 1972/1984
- ³ Hal Foster *The Return of the Real. The Avant-Garde at the End of the Century*. MIT Press, Massachusetts, 1996
- ⁴ Guy Julier *The Culture of Design*, Sage Publications, London, 2000
- ⁵ Rick Poyner *No More Rules: Graphic design & postmodernism*, Laurence King Publishing, London, 2003
- ⁶ Thierry de Duve *Clement Greenberg between the lines*. Editions Dis Voir, Paris. 1996 p.63
- ⁷ Horst Rittel and Melvin Webber "Dilemmas in a General Theory of Planning" *Policy Sciences* Vol 4, 1973, p 155-164
- ⁸ Richard Coyne. "Wicked Problems Revisited", *Design Studies* 26, 2005, p.12
- ⁹ *Ibid.*, p.6
- ¹⁰ Thierry de Duve *Clement Greenberg between the lines*. Editions Dis Voir, Paris. 1996 p.49
- ¹¹ *Ibid.*, p.65
- ¹² *Ibid.*, p.65
- ¹³ *Ibid.*, p.65-66
- ¹⁴ *Ibid.*, p.49
- ¹⁵ *Ibid.*, p.66
- ¹⁶ J.M. Bernstein (Ed.) *Theodor W. Adorno. The Culture Industry*, Routledge, London and New York, 1991/2003, p.6
- ¹⁷ *Ibid.*, p.7
- ¹⁸ *Ibid.*, p.5
- ¹⁹ Thierry de Duve *Clement Greenberg between the lines*. Editions Dis Voir, Paris. 1996 p.66
- ²⁰ See for example Rick Poyner, & E. Booth-Clibborn (Ed.s) *Typography Now: The Next Wave* London, Internos Books, 1991
- ²¹ Thierry de Duve *Clement Greenberg between the lines*. Editions Dis Voir, Paris. 1996 p.25
- ²² *Ibid.*, p.25
- ²³ Helmut Draxler "Letting Loos(e): Institutional Critique and Design" A. Alberro and S. Buchman (Ed.s) *Art after Conceptual Art*. MIT Press, Cambridge, Massachusetts. 2006 pp.151-160. p.152
- ²⁴ *Ibid.*, p.151
- ²⁵ *Ibid.*, p.152
- ²⁶ *Ibid.*, p.153
- ²⁷ *Ibid.*, p.155
- ²⁸ *Ibid.*, p.156
- ²⁹ *Ibid.*, p.152
- ³⁰ *Ibid.*, p.152
- ³¹ *Ibid.*, p.154
- ³² *Ibid.*, p.158
- ³³ *Ibid.*, p.155
- ³⁴ *Ibid.*, p.154
- ³⁵ *Ibid.*, p.160
- ³⁶ *Ibid.*, p.160
- ³⁷ *Ibid.*, p.159
- ³⁸ Herwin Schaefer *The Roots of Modern Design. Functional Tradition in the 19th Century*. Studio Vista, London, 1970. p.3
- ³⁹ Andre Breton *What is Surrealism? Selected Writings* Pluto Press, London 1978 p.135
- ⁴⁰ Hal Foster *Compulsive Beauty* MIT Press, Cambridge Massachusetts 1993 p.5
- ⁴¹ Andre Breton *What is Surrealism? Selected Writings* Pluto Press, London 1978 p.207
- ⁴² Andrea Branzi *The Hothouse. Italian New Wave Design* Thames & Hudson, London 1984 p.77
- ⁴³ Emilio Ambasz (Ed.) *Italy: the new domestic landscape* Museum of Modern Art, New York, 1972
- ⁴⁴ Manfredo Tafuri "Design and technological utopia" E. Ambasz (Ed.) *Italy: The New Domestic Landscape*, MoMA, New York 1972 p.388
- ⁴⁵ For example John Ruskin *The Stones of Venice* Faber, London 1853/1981
- ⁴⁶ For example Edgar Kaufmann jr., *What is Modern Design?* Museum of Modern Art, New York, 1950. Excerpts reprinted in Carma Gorman (Ed.) *The Industrial Design Reader*. Allworth Press, New York, 2003, p146-151
- ⁴⁷ Brigitte Rambaud "Interview with Marti Guixe" in Ed van Hinte (Ed.) *1:1* Rotterdam: 010 Publishers 2002 p.90
- ⁴⁸ Paul Betts *The authority of everyday objects*. University of California Press, Berkeley/Los Angeles/London, 2004 p.45
- ⁴⁹ Ed van Linte (Ed.) *1:1 Marti Guixe*, 010 Publishers, Rotterdam, 2002. p.85
- ⁵⁰ Guy Julier *The Culture of Design*. Sage Publications, London 2000

Cecil Balmond & ARUP Advanced Geometry Unit (AGU)

Deputy Chairman and Fellow of the engineering firm ARUP Cecil Balmond established the ARUP Advanced Geometry Unit (AGU) in 2000. The AGU is led by Balmond's concept of engineering as an aesthetic and creative activity, and is informed by master planner Charles Walker's reconceptualizing of engineering in an atelier model. Collaborators on *H_edge* include structural engineer Daniel Bosia and cross-disciplinary practitioner Francis Archer.

In the engineering of innovative structures Balmond and the AGU challenge architectural conventions. Balmond was born and educated in Sri Lanka before traveling to London for post-graduate studies, and his interest lies in the genesis of form using numbers, music and mathematics as vital sources. Projects on which Balmond has collaborated include the Seattle Library and CCTV project in China with Rem Koolhaas (2004 & 2008), the Coimbra Footbridge in Portugal with António Adão da Fonseca (2006), the Victoria & Albert Museum and Imperial War Museum with Daniel Libeskind (1996 & 2001), and a series of collaborations on temporary summer pavilions for the Serpentine Gallery in London. Balmond's commitment to engineering as an aesthetic practice involves speculative projects, such as *H_edge* (2006), and collaborations with artists, such as Anish Kapoor on the sculpture *Marsyas* at Tate Modern Art Gallery (2003).

A committed teacher, Balmond lectures at architectural schools internationally. He was appointed visiting Kenzo Tange professor at the Harvard Graduate School of Architecture, Saarinen Professor at Yale University School of Architecture and now holds the Paul Philippe Crét Chair at Penn Design as Professor of Architecture. Walker is unit master at the Architectural Association in London, while Bosia is a Fellow of the Non-Linear Systems Organization at PennDesign. Archer's background is in teaching mathematics and theoretical physics at the Architectural Association and the Bartlett School of Architecture in London. Publications by and about Balmond's work include *Informal: the informal in architecture and engineering* (Prestel, 2002), *Serpentine Gallery Pavilion 2002: Toyo Ito with Arup* (Telescoweb.com 2002), *Number 9: The Search for the Sigma Code: nine fixed points in the wind* (Prestel, 1998), and *Natur und abstraction: lehrstuhl Jose Luis Mateo* (Actar, 1995).

***H_edge*, 2006**

H_edge is an experiment in the use of geometry and modular materials to create new organisations of space. The project exists on three levels: the mathematical geometric, the architectural-spatial and the structural-tectonic. ...*H_edge* has the aim of traversing the boundaries of mathematics, art, architecture and engineering, exploring new opportunities of complexity¹

H_edge comprises 5200 aluminum plates and stainless steel chain organized according to the Menger Sponge. *H_edge* constructs a new structure that replaces Platonic forms of functionalist design (sphere, cone, square) with a maze of punch-cut geometric human silhouettes and chain.

¹ Cecil Balmond

Jop van Bennekom

Jop van Bennekom has initiated three magazines since graduating from the Jan van Eyck Academy in 1997, Amsterdam: *Re-Magazine*, *BUTT*, and *Fantastic Man*. Van Bennekom's initiation and implementation of magazine publications are recognized for questioning conventions in contemporary celebrity culture media. Rather than elaborate the cult of personality, issues of *Re-Magazine* (1997-2004) devote entire issues to unknown individuals, and represent their quotidian experiences in layouts that invert magazine format conventions, foregrounding aspects of contemporary life that we take for granted. Similarly, instead of reproducing stereotypes of gay masculinity, *BUTT* magazine (2001-) presents individual points of view. As an alternative or critical comment on presenting fashion on anonymous mannequins or super models, *Fantastic Man* (2005) focuses on redefining fashion according to individuals who ignore or interpret fashion directions by repurposing fashion markers in idiosyncratic ways, moustaches and tweed for example.

Re-magazine, 1997-2004

Re-magazine was a quarterly publication begun by Jop van Bennekom as a student project at Arnhem Academy of Art and Design, the Netherlands. The first eight issues each focused on an aspect of life that is often neglected in mainstream magazines. The subject matter of these issues explored idle thoughts, providing for example a guide to connecting with one's past, and a reflection on the nature of boredom. In 2002 van Bennekom reconfigured *Re-magazine* to present the perspective of a single contributor per issue. Since this shift each issue of the magazine presents a text and image portrait of an ordinary individual in layouts that appear almost un-designed. Un-designed in the sense that the magazine comprises informal photo essays modeled on snapshots and typography comprising only headings, body copy, and rules. In contrast to commentary that valorizes van Bennekom's increased agency and control in combining the roles of writing, photography, editing, and art directing, it can also be argued that the un-designed quality of *Re-magazine* challenges the design convention that better design results from more designer autonomy. Issue 9: of *Re-magazine* entitled "John" published in 2002 is the first issue of the second iteration of *Re-magazine*. It presents a narrative of a man who asks questions about the effects of a designed life and claims that John "In search of unconditional freedom, ... radically distances himself from the world, with the ultimate purpose of getting closer to its core".¹ John's strategy for achieving independence or retreat from external influences is to disappear and abandon his possessions, home, partner, and job. John removes himself from his assigned social roles and presents his story as a protest against limited autonomy and as a bid for total freedom.

¹Jop van Bennekom *Re-Magazine* #9 "John" 2002, p.1

Anthony Dunne and Fiona Raby

Industrial designer, Anthony Dunne and architect Fiona Raby, are partners in the design practice Dunne and Raby. Professor Dunne is also head of the Design Interactions Department at the Royal College of Art. They have worked in Tokyo and London and include Sony U K, Panasonic, France Telecom and the Science Museum, among their client commissions. Dunne and Raby were founding members of the Critical Design Unit, and taught in Computer Related Design, Design Products and Architecture at the Royal College of Art from 1994-2005. Dunne and Raby use design as a medium to stimulate discussion and debate amongst designers, industry and the public about the social, cultural and ethical implications of existing and emerging technologies. Their projects have been exhibited and published internationally and are in the permanent collections of MoMA and the Victoria & Albert Museum. Dunne and Raby have written several books including *Design Noir* (Princeton Architectural Press 2001) and *Hertzian Tales* (The MIT Press 1999/2005).

Dunne's and Raby's *Technological Dreams Series No. 1* presents a DVD demonstration of anxious robots. Taking seriously the prospect that in the future it is likely that robots will perform mundane tasks around the house, Dunne and Raby contemplate whether they will become neurotic, in one way or another, while acting as receptacles for their users fears and anxieties. *Technological Dreams Series No. 1* provokes debate about how we would like to relate to technology other than in fantasies dominated by triumphant science fiction.

Technological Dreams Series, 2007

One day in the future robots will do everything for us. It's a dream that refuses to go away. There are several historical lines of investigation: trying to create a human or animal, some kind of android, trying to do specific tasks that are too dangerous or unpleasant for humans, and the invisible robot which is here already, in your car, in the city, automating everyday actions and assisting us.

Robots are destined to play a more significant part in our daily lives over the coming years. But how will we interact with them? What kind of new interdependencies and relationships might emerge? These objects are meant to spark a discussion about how we'd like our robots to relate to us: subservient, intimate, dependent, equal?
Robot 1: This one is very independent. It lives in its own world getting on with its work. We don't really need to know what it does as long as it does it well. It could be running the computers that manage our home. It has one quirk; it needs to avoid strong electromagnetic fields as these might cause it to malfunction. Every time a TV or radio is switched on, or a mobile phone is activated it moves itself to the electromagnetically quietest part of the room. As it is ring shaped, the owner could, if they liked, place their chair in its centre, or stand there and enjoy the fact that this is a good space to be in.

Robot 2: In the future products/robots might not be designed for specific tasks or jobs. Instead they might be given jobs based on behaviours and qualities that emerge over time. This robot is very nervous, so nervous in fact, that as soon as someone enters a room it turns to face them and analyses them with its many eyes. If the person approaches too close it becomes extremely agitated and even hysterical. Home security might be a good use of this robot's neurosis.

Robot 3: More and more of our data, even our most personal and secret information, will be stored on digital databases. How do we ensure that only we can access it? This robot is a sentinel, it uses retinal scanning technology to decide who accesses our data. In films iris scanning is always based on a quick glance. This robot demands that you stare into its eyes for a long time, it needs to be sure it is you.

Robot 4: This one is very needy. Although extremely smart it is trapped in an underdeveloped body and depends on its owner to move it about. Originally, manufacturers would have made robots speak human languages, but over time they will evolve their own language. You can still hear human traces in its voice.¹

¹Anthony Dunne and Fiona Raby *Technological Dreams Series*, 2007

Saul Griffith And Selena Griffith

SAUL GRIFFITH

Saul Griffith is an Australian inventor living in San Francisco. His work in the United States began with his PhD at Massachusetts Institute of Technology. Griffith's approach to problem solving elaborates low cost product and distribution design that is inspired by open source computation models. Griffith's accessible products and graphic instruction sheets, for instance *Howtoons* and *Instructables*, provide guidelines for DIY design and remove design from any preoccupations with the rarity and connoisseurship that is often associated with design exhibited in museum and gallery contexts. Griffith's designs practically reveal the internal logic of material behaviours. One *Howtoons* provides instructions for children to construct a hovercraft with a CD and a balloon. Such designs invoke wonder that ingenuity is possible with detritus you might find behind the couch. Griffith's extremely practical projects include *Thinkcycle's* machinery for the production of *Low-Cost Eyeglasses*, and a load weighing 'smart rope'. Both address problems that affect rural and developing economies, with minimal financial investment.

SELENA GRIFFITH

Selena Griffith is an Australian designer, artist and academic based in Sydney. She has worked across many design and art fields including industrial / product, graphics, textiles, interior, jewelry, printmaking, photography and sculpture. Griffith has a strong interest in socially responsible design and design as a vehicle for change and consumer education. She believes in close collaborative relationships with manufacturers to ensure the best outcomes for her designs in production. Griffith currently coordinates the Design Management and Practice and Interactive Systems courses at The College of Fine Arts, University of New South Wales.

iCycle Bridge, 2002

iCycle Bridge by Saul Griffith and Selena Griffith is a clear polycarbonate flat pack bicycle. Attending to the ubiquitous bicycle by reworking its material, the way it is shipped, and the integration of an iconic form (that of the Sydney Harbour Bridge) highlights the issues around sustainability, the nature of transport in cities, and the role design plays in engineering solutions.

Marti Guixe

Marti Guixe's designs provide critical commentary about design's social role in commercial design contexts, such as Camper Shoes, worldwide; Sala Vincon, Barcelona; SSK, Berlin; and the Milan Furniture Fair, Italy. Guixe presents performances of food preparation that imagine alternative consumption practices such as inhaling food through air-conditioning units (*SPAMT*), and present critiques of instrumentalist approaches to design in cakes decorated as pie-charts of recipe ingredients (*I-Cakes*). Guixe's designs and performances emphasize the responsibility of designers and the importance of reflexive practice. Regarded by many audiences as entertaining, Guixe's performances and design objects also demonstrate a serious commitment to evaluating the implications of contemporary design systems and the transformation of design culture. Guixe has guest-lectured at Escola Elisava, Barcelona; Escuela Tecnica Superior de Arquitectura de Alicante; Les Ateliers L'ENSCI, Paris; Netherlands Design Institute, Amsterdam; Fabrica, Teviso; Escola Eina, Barcelona; Design Academy, Eindhoven; and Goethe University, Frankfurt am Main. Monographs about Guixe's practice include *1: 1* (010 Publishers 2002), *The Marti Guixe Cookbook: a meta-territorial cuisine* (Imschoot 2003), and *Toy Weapons: User Manuel* (Edizioni Corraini 2005).

Autoband, 1999

*Autoband: Hometoy to play 'highway construction' where children learn abstract concepts such as politics, lobbying, public relations, public opinion, ecology, territoriality. The toy is a tape with a pattern of a three-way highway printed at scale 1:250.*¹

Autoband recalls the Nazi regimes development of Autobahns across Germany. As design historians point out, the German Autobahns functioned as symbols of German nationalistic unity more than they contributed, as was often touted, to military mobilization during the Second World War. The propaganda function served by the German Autobahns, built by previously unemployed workers, and later indentured foreign labour, captured the rationalized dreams of national unity. Marti Guixe's *Autoband* tape is simple in that it is packing tape printed with a highway lane-marking pattern. But its effect is delirious in that it represents with childlike mania the impact of the motor car on modern culture as one stretches *Autoband* across a table, a room, or a gallery for that matter as if it were the real world.

¹ Ed van Linte (Ed.) *1:1 Marti Guixe*, 010 Publishers, Rotterdam, 2002. p.46

Ana Mir & Emili Padros (EMILIANA)

Ana Mir and Emili Padros collaborate in the design studio Emiliana. Their design commissions include Nani Marquina, the Contemporary Cultural Centre of Barcelona (CCCB), playground equipment manufacturer Richter Spielgerate, the chocolatier Enric Rovira, and NH Hotels Group. Emiliana's self-initiated designs are targeted to highlight under-represented issues, for example water shortages in Spain, the working conditions of street sex workers in the European winter, and issues of comfort and play in private and public environments. They have described their work as a form of communication, and at times therapy, for issues that are rarely discussed in relation to design. Emiliana's approach is grounded in a commitment to social justice and environmental issues. Their designs such as *Pillow Play* (1999), *Flying Carpet* (2002), *Gelapeutic Bath* (1999), and the *No Car Transport System* (1999) all evoke a subversively interactive relationship with products whose primary purpose is to reflect critically on contemporary society. Both Mir and Padros lecture at Elisava Design School, Barcelona, Spain, and Emiliana's work is in the permanent collections of the Fonds Nationale D'Art Contemporain (FNAC), France.

*We expect people to play a participative role in our designs. Sometimes this can be playful, physically active, or more intellectual. Whichever way, though, we want people to get involved.*¹

Hot Box, 2003

When in use *Hot Box*, measuring 18 x 60 cm, is elevated 40 cm from the ground. When not in use the box descends until flush with the pavement. Supplying a pedestal that provides heat and light for street sex workers creates a relationship to the design user that articulates some issues in design's imbrications in consumerism and desire. Emiliana critique the accepted norm that defines design as a form of control by foregrounding the role of desire in design. Works by Emiliana, such as *Hot Box* represent through design the respective effects of sexual commodification and pleasure with the aim to transform societal norms.

¹Henrietta Thompson "Barcelona Special" *Blueprint: Architecture, Design, Culture* June 2003 No 208. p.38

Jenny E. Sabin

Architect, artist and director of Cabin Studio, Jenny E. Sabin teaches in the Graduate Department of Architecture at University of Pennsylvania, and is currently Lead Researcher within the Non-Linear Systems Organization (NSO), a research group at PennDesign. Sabin's *Fourier Carpet* draws from her background as an artist and combines architecture, weaving and computational systems. *Fourier Carpet*, based on the Fourier series, a binary mathematical sequence for the analysis of sound, is woven in wool using an early computational model for computers, the Jacquard loom. This combination of advanced technologies for the production of craft based industrial products confounds traditional emphasis on the hand made in craft's history, and raises provocative questions about self-generating patterning processes afforded by novel combinations of historical and contemporary technologies. Sabin's work examines the contradictions of tradition and innovation through the recombining of existing albeit disparate systems.

Fourier Carpet, 2006

Fourier Carpet explores how mathematical modeling can generate designs. By manifesting binary code as decoration from one perspective *Fourier Carpet* confronts the expectation that craft is solely concerned with handmade traditions. Based on the mathematical algorithm, the Fourier series, a construct designed to measure the transfer of sound, the *Fourier carpet* juxtaposes the sine wave and cosine wave. Nowadays, the Fourier series is used to identify elements of an electrical signal such as background noise in an audio file, in the compression of JPEG images, and in the electrical engineering of telecommunication networks. Contradictory to these applications, the *Fourier Carpet* expresses the process or means by which the weaving is constructed as its own end rather than for the satisfaction of other purposes.

Anne Wilson

Anne Wilson is Professor and Chair at the Department of Fiber and Material Studies, The School of the Art Institute of Chicago. Wilson's work explores the interrelationship of urban planning and micro-worlds created in the woven forms of lace, and up close and personal encounters between animated characters constructed in discombobulated lace, thread and sewing minutiae. Texts about Wilson's work include *Portfolio Collection: Anne Wilson*. (Telos Art Publishing, 2001).

Errant Behaviors, 2004

*Because the play order is shuffled and there is no beginning or end, ongoing improvisational relationships are created. The frame-by-frame hand construction of animation is very much like the structural development of lace - a structure that accumulates part by part over time through sequences of motions with the potential to replicate and expand infinitely. The hand processing of both the animation and the textile displays aspects of foible, imperfection, curiosity, and irregularly. There are relationships between humor and darker aspects to the content in *Errant Behaviors*, evolving ideas about quirky growth, sometimes playful and sometimes sinister-seeming relationships, rude actions, repetitions and accumulations. The behaviors of *Errant Behaviors* have to do with aspects of impropriety, aggression and accident. Shawn Decker's sound compositions utilize both processed recorded and found sounds to create environments of sonic activity which mirror the behavior of the visual images. The sound in some segments has a singular presence; other segments have a more cinematic presentation; some employ partially synchronized sound within a sonic environment. There is consideration throughout of the relationships between natural, human, and synthetic rhythms.¹*

¹ <http://www.annwilsonartist.com/html/texts.html>