CRITICAL DESIGN AS CRITIQUE OF THE DESIGN STATUS QUO

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Abstract

Contemporary design practice (and theory) is growing up. There is evidence to support the emergence of a new breed of designer who is able to reflect on her or his role in society, and to be critical of what they make and what the resultant consequences of that may be. Design is often used as a vehicle to criticise and comment on issues, highlight problems and shortcomings in society, and present views and perspectives. This suggests that design is at a distance and impartial, but the truth is otherwise. Design is ideological and an expression of the values mediated by the designer and commissioned by others. This is the status quo: affirmative design. When design steps away from this position and critiques itself, critical design is the result. Presenting alternative perspectives and reflecting on the role of design is its purpose. This paper will address this emerging phenomenon that originated in product design, and the discourse extant to the work of Dunne and Raby. By identifying the characteristics of critical design and visualising the pathways, processes and consequences that distinguish it from affirmative design, the paper will argue that design practices, other than product design, can be scrutinised according to this model. Furthermore the virtues of the designer's authorial voice will be extolled as reflexive of this and necessary to establishing a culture of design critique, and to positioning critical design as an integral, important and necessary part of design discourse.

Keywords: critical design, affirmative design, design critique, design authorship, design discourse

Introduction

Design occupies a position of ambivalence, bestriding the concerns of capital and culture (Hill in Mazé and Redström 2007:1). This uncertainty about the role of design within society has resulted in several attempts to define the borders of the practice with many designers holding to the belief that design is much more than merely a professional practice: it is a fundamental human activity. "Outside of nature, [designers] are the prime creators of...experienced reality", according to Harold Nelson and Erik Stolterman (2012:11), and the "ability to design...determines our humanness". More than twenty years ago Victor Margolin (1989:28) stated it thus: "Design is as much expression of feeling as an articulation of reason; it is an art as well as a science, a process and a product, an assertion of disorder and a display of order". Social values and theories about how the 'world works' are intrinsic to the products of design. They are "representation[s] of arguments of how life should be lived" (Margolin 1989:28) communicated through design and are a manifestation of the social role of design. Design rhetoric has "directly influenced the actions of individuals and communities, changed attitudes and values, and shaped society in surprisingly fundamental ways" (Buchanan 1989:93).

There is criticism (implied as a form of "being against") of the ambivalent role adopted by design (referred to by Hill in Mazé and Redström 2007:1), and calls for it to become more socially proactive. According to Poynor (2004:1) this negative view of design's ambivalence does not lead to social transformation. What is needed is critique, as an in-depth evaluation that draws attention to, and questions the inadequacies of, society's current assumptions about design.

[Critique] is a question of discovering what must and can change and be transformed in people's lives...It is a question of stating critically how people live, or how badly they live, or how they do not live at all. (Lefebvre 2002:18).

In the context of design, this intensity of questioning is akin to critical reflection. Here design's ambivalent position towards culture and capital requires a critique of its role within everyday life so that new possibilities for a more meaningful social role for design may be revealed. Being critical mostly exists momentarily within the studio critique or in written design discourse. Dilnot (2008:177) questions the implications of criticality in relation to design:

But what are we to make of the critical when we deploy it as a noun? What does criticality describe? And what would it be to have the critical not just as an occasional moment, but as that which defines the very state of being of a [design] practice?

These are unpopular questions in both a professional and academic sense. Imagining the critical dimension of design is loaded with implication as it raises the question of whether design should always be bound to its traditional role as the bridge between art and capital (Gretinger in Dilnot 2008:177). Design that emerges from outside of the marketplace is treated with suspicion and regarded as "unrealistic" or "escapist" (Dunne and Raby 2001:59). The dominant stance suggests that design should deny itself any critical knowledge and should instead favour translating the tasks assigned to it by the market place – the practice of design is therefore abjured of any critical stance.

Despite this, there are a range of diverse perspectives emerging in contemporary design that run counter to traditional views on what design is and what it should be about. There are increasing examples of critical approaches in a range of different design disciplines. Many designers are attempting to use their "practices, their processes, methods, materials, products and modes of production" to contribute to the greater discourse within the discipline as a means to antagonize the prevailing conditions of design (Mazé 2009:388).

These approaches are labelled as critical design practices, located outside the conventions of accepted practice by opposing "utility, technological agenda, and financial gain" (Malpass 2009:289) and have emerged as a reaction against the "orthodoxy and protocols of [traditional] design method" (Ball and Naylor 2006:11). These practices serve as a contribution to disciplinary discourse on a meta-level, reflecting on ideological or intellectual questions within design and thereby locating the unique concerns arising from the discipline. These practices use the idea of critical thinking to ensure an understanding of a designer's own concerns about design (Bowen 2007:14). Critical thinking in design practice expands the cultural and aesthetic potential of the discipline. This kind of design is labelled as critical design and can be understood as a form of experimental design that seeks to "extend the medium ... in the name of progress" and searches for new experiences through aesthetic prowess (Dunne and Raby 2001:58).

The emergence of critical design

Rather than searching for new avenues of disciplinary progress, one such form of critical design practice has materialized to focus on design's social role and has become known as critical design (Dunne and Raby 2001:58). It seeks to challenge the predominant model of production and consumption by offering alternative perspectives, exposing design's current values as unsatisfactory. Usually produced as artefacts for exhibit rather than sale or utility it is "less about problem solving and more about problem finding within disciplinary and societal discourse" (Mazé 2007:211). The opposite is affirmative design (Dunne and Raby 2001:58), leaving the predominant understanding of design unchallenged by producing products that conform to cultural, social and technical expectations. Critical design critiques affirmative design by producing products that are reified with alternative values and ideologies. These products take on the form of artefacts, prompting the reader to reflect on the alternative ideologies they have been presented with and consider them according to their own values. In this way, critical design takes a critical theory approach to design.

In presenting design as a critique of ideology, critical design focuses on the ability of criticism to manifest as design through the formulation of alternatives that question what is known about society, and in so doing, reveals alternative possibilities. The "critical" in critical design suggests its correlation to the multifaceted area of critical theory, which emerged as an alternative to 'traditional theory', as espoused by Max Horkheimer's essay, *Traditional and Critical Theory* (1972). Traditional theories of society have the objective of understanding and explaining society. By contrast, critical theory seeks to critique and challenge society as a way of bringing about social transformation. Simply stated, traditional theory focuses on understanding society, and is a form of social research that accepts the status quo. Critical theory by contrast is research that seeks to influence social change (Crotty 2003:113).

Critical theory challenges society through critique, which can be understood as an alternative interpretation of society, with the intention of "[liberating] human beings from the circumstances that enslave them" (Horkheimer 1972:244) and "emancipation and enlightenment, at making agents aware of hidden coercion, thereby freeing them from that coercion" (Geuss 1981:55). Central to critical theory is the critique of ideology, where ideology is viewed as "a particular worldview that privileges certain interests and hides this fact by making the current state of affairs appear natural" (Stahl 2008:4). Likewise, critical design's critique centres on the relationship between design and ideology, where design plays a fundamental role in the propagation of ideology. As stated by Dunne and Raby (2001:59): "Design helps to create and maintain desire for new products, ensures obsolescence, [and] encourages dissatisfaction with what we have". Here design plays an integral role in spreading capitalist values and making such an ideology seem natural. Critical design therefore questions the assumptions of the design discipline with the intention of encouraging awareness of Guess' (1981:55) hidden coercion of ideology embedded within designed products. Critical theory forms the theoretical underpinning of critical design practice, where they both aim to unmask the ideologies and the power structures at play within the practices of society and challenge what is presented as reality, thereby clearing the path for social awareness and change. Importantly, critical design does not argue for a way of designing that is free from ideological content, rather it highlights the fact that design is always ideological (Dunne 1999:30).

Imagining the implications of this theoretical position is gaining currency within design discourse. It emanates from within the field of product design and is a result of dissatisfaction with the ideological underpinnings of the current design paradigm. Critical design suggests a parallel role for design, as an experimental space, to explore the idiosyncrasies of human nature through design. It has been popularised within design discourse by the product design duo Anthony Dunne and Fiona Raby, identified by the design media as the leading proponents of this form of design. They suggest that providing a label for a specific design activity (in this instance, critical design) is "a useful way of making [the] activity more visible and subject to discussion and debate" (Dunne and Raby 2007:1).

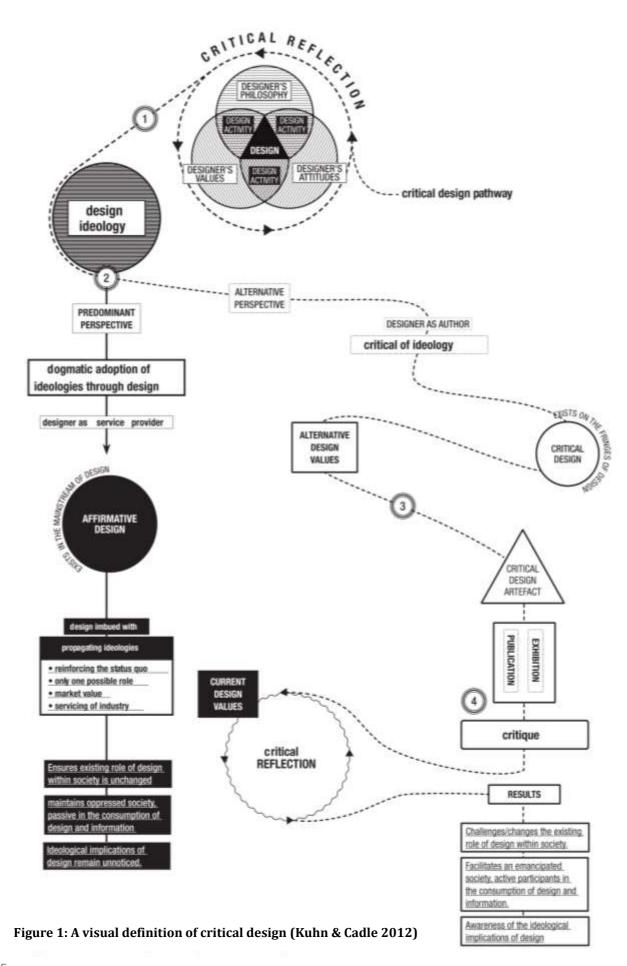
Dunne and Raby create critically designed artefacts as an embodied critique of the relationship between product design and the propagation of consumer culture as an ideology. They use the process of designing such an artefact and its imagined use as a way to encourage critical reflection about the role of consumer products within society. Their intention is to reveal the limited user experiences offered by design's current role within society; a role that unthinkingly facilitates the dogmatic adoption of capitalist ideology. Although Dunne and Raby have been credited with popularising the term "critical design", they believe there are many others who share similar attitudes and objectives, who would not necessarily refer to their practices as critical design — designers are re-evaluating mainstream design and directing their practice towards critique and reclaiming design as a medium to invoke critical reflection (Bowen 2009:92). This represents a growing trend of designers questioning the nature of design and its current role within society and consequently the need for a deeper understanding of what constitutes this specific form of critical design practice.

Critical design is frequently misrepresented within popular writing on design. Journalists tend to be preoccupied with the novelty or the gimmick embodied by the artefacts, often ignoring the critique offered by critical design. Its influence bears witness to many designers merely imitating the offbeat aspects of critical design (Debatty 2007:3) capitalising on idiosyncratic consumer appeal. Dunne and Raby (2007:18) believe that critical design runs the risk of ending up as a sophisticated form of design entertainment with too much emphasis on the humorous aspects of the artefacts and too little emphasis on the critique. They believe this situation can be avoided by engaging with complex and challenging issues and by playing an active role within public discourse about the social, cultural and ethical impact of design within society's everyday environment.

How then can critical design be identified (and therefore practiced) and what are the processes and pathways that need to be followed to achieve this? Although critical design is presently and predominantly located within a product design paradigm, that does not preclude applying its underlying principles to 'reading' or commenting on other design forms. How can this be achieved? By determining the characteristics of critical design and affirmative design, a visualisation of the relationship between the two types of design activity is possible. Consequently, the criteria that distinguish critical design from affirmative design can be extracted and used to identify, or analyse and understand, critical design artefacts and practices, or to produce critical design artefacts.

Towards a visual definition of critical design

Figure 1 maps the characteristics of affirmative design against those of critical design. As a visual definition it effectively represents a rubric that can be used to identify the distinguishing characteristics of affirmative design and critical design. Criteria can then be extracted by which a designed artefact can be analysed to determine is affirmative/critical design credentials.



Introduction to the visual definition: Critical design in brief

The pathway towards creating critical design (depicted by the dotted lines) emerges from critical reflection about the current role of design within society. It emanates from an alternative design perspective that arises from this critical reflection, which eventually reveals the latent ideological underpinnings of designing and valuing one particular way of thinking over another. This alternative perspective represents a different possibility from the current design paradigm. It is therefore critical of the ideological nature of design and suggests that the predominant perspective of design is only one possibility amongst many. The alternative design perspective offers new possibilities for design through the embodiment of alternative design values into designed artefacts. These artefacts are disseminated through exhibitions and publications where they can be interpreted by the readers (readers) as a critique of the prevailing perspective held by affirmative design. Presenting 'design as critique' encourages reflection on the ideological nature of design, which consequently reduces entrapment of users/consumers within certain ideology sets.

The key aspects that constitute the pathway towards critical design are:

- 1. Critical reflection: The importance of *critical reflection by the designer* and recognition of design's ideological underpinnings
- 2. Perspectives: An *alternative design perspective* that challenges the status quo and traditional values and positions the designer as author
- 3. Processes: Alternative values, combining fiction and reality, that drive the design process
- 4. Consequence: The production of *critical artefacts as conceptual models* that facilitate *critical reflection in the reader*.

The relevant numbers in parentheses correspond with these aspects on the diagram (Figure 1).

Critical reflection (1)

The central premise of affirmative design and critical design is that critical reflection on design reveals that it is an ideological activity, with designers embedding their values, attitudes and philosophy into the act of designing (Poynor 2003:120; Dunne and Raby 2001:58). However, many designers still believe that design is a neutral form of communication. Slavoj Zizek (2005:1) suggests that the current design epoch describes itself as "post-ideological" but within design lies a "disavowed ideological dimension" – the products of design embody the ideologies that create them. Even within objects that express innocuous functionality there exists a latent ideological underpinning. For instance, designers communicate meaning that exceeds the functionality of a product, implying that there is reflexivity of meaning at work; the product expresses the ideology of functionalism as its meaning rather than being purely functional (Zizek 2005:4). Unwitting coercion into the dogmatic adoption of an ideology is the result of the latency hidden within the ideological underpinnings of a designed product. Design generally facilitates a culture of consumption, and the unthinking adoption of consumerism as an ideology leads to design maintaining a society of passive consumers.

Perspectives (2)

The ideological nature of design can then be interpreted from two perspectives, either affirmative or critical of design and ideology. The former, being the predominant perspective, reinforces the current understanding of design and propagates the dogmatic adoption of the currently held design values. Here the designer's role is defined as service provider and is measured in market value. This perspective occupies a position of "market populism", a term used by the American cultural critic Thomas Frank, in *One Market Under God* (2001:XIV), to describe that which is susceptible to a market-determined consensus. It embraces the current economic and political state of affairs, the status quo as the only possible reality requiring no counter argument in the form

of criticism or dissent. This form of design is, according to Dunne and Raby (2001:58), known as "affirmative design" because it re-affirms the status quo by eschewing anything outside the market place as "escapist" or "unreal" (Dunne and Raby 2001:59).

The alternative design perspective, which is critical of design ideology, challenges the design status quo through its criticism of the values held by affirmative design. This form of design is known as "critical design". From this perspective, the designer's role is antithetical to the-designer-as-service-provider translating the needs of industry. This is as an effort to reclaim the intellectuality of design and to challenge affirmative design's propagation of a society of passive consumers. Gretinger (in Dilnot 2008:178) concurs: "criticality in design...signal[s] the desire to explore other forms of practice...than those permitted by the market". Dunne and Raby (in Freyer, Noel and Rucki 2008:265) suggest that designers acknowledge the ideological dimension of design and play the role of critically engaged "design authors", where the designer is active in the definition of values embedded in the products of design and questions the ideologies that are rhetorically embedded in such products. Critical design transcends previous debates of design authorship, which resulted in the subjective "egomania" and self-expression related to the old-fashioned views of authorship. Those involved in this new form of design authorship stress their role as collaborators and participants in the design process as a means of circumventing the subjectivity associated with previous notions of design authorship. Critical design sees authorship as a humanising process, which serves as an advocate for idiosyncrasy in design. In a similar way to literature, authorship does not suggest that the reader adopts a passive and uncreative role in the communication process (Dunne and Raby in Freyer et al. 2008:265), rather users are encouraged to be protagonists navigating through the communications landscape.

The role of user-as-protagonist, as an active collaborator within the reading of a design, emerges as an alternative to the current understanding of users within society. This alternative view of design and society has the objective of questioning the limited range of psychological and emotional experiences offered by affirmative design, which it does by acknowledging the "complex, contradictory and even neurotic" nature of the users of design (Dunne and Raby 2007:16). The affirmative design view of society is that people are "obedient and predictable", which in effect limits design from fully engaging with the complexities inherent in human nature.

According to Dunne and Raby (2007:8) critical design has emerged as a new form of design activity mainly because society is "incredibly complex [and our] social relations, desires, fantasies, hopes and fears" are very different from those at the beginning of the twentieth century, even as many of the ideas stemming from mainstream design have their basis in theories from that time. Affirmative design is a signifier of the failure of design to progress at the same rate as the technological, political, economic and social advancements occurring within society at the beginning of the twenty-first century (Dunne and Raby 2007:8). Challenging the status quo is one of the many ways that design is evolving in order to remain relevant to today's society. This alternative perspective is an effort to reflect the complexities of human nature instead of depicting society as "easy to satisfy consumers" (Dunne and Raby 2010:131).

Processes (3)

An alternative view of society results in alternative values being used within the design process. Dunne and Raby's, A Manifesto (2009), proposes these alternative (and provocative) values (Figure 2). Column "a" represents the values currently held by design and can be understood as affirmative design values. Column "b" lists the alternative values held by critical design. The affirmative design values presented in column "a" reflect the predominant understanding of design, while the critical design values depicted in column "b" reflect new possibilities for design.

(a) [b] affirmative critical problem finding problem solving design as process design as medium provides answers asks questions in the service of industry in the service of society for how the world is for how the world could be science fiction social fiction futures parallel worlds fictional functions functional fictions change the world to suit us change us to suit the world narratives of production narratives of consumption anti-art applied art research for design research through design applications implications design for debate design for production satire concept design conceptual design consumer citizen person user training education makes us think makes us buy provocation innovation ergonomics rhetoric

Figure 2: A Manifesto (Dunne & Raby 2009)

As part of the critical design process, alternative values are used like raw materials that are shaped into the critical artefact. This can be considered as a "materialized form of discourse" (Seago and Dunne 1999:17) where the critical artefact exceeds mere "commentary" or "quotation" and itself becomes a "physical critique" (Mazé and Redström 2007:9).

The critical artefact is usually disseminated through exhibition and publication (Bowen 2009:190) and often takes on the form of scenarios shown in books or films that include the designed artefacts (Dunne and Raby 2001:65). In these scenarios, "fictional" or "unreal" values are used in an ambiguous way to encourage the reader to contemplate why the values embodied in the scenario seem unusual (Dunne and Raby 2001:63). Critical design achieves this level of ambiguity by communicating these unconventional values in a "straightfaced" manner with "products and media visualised in fine detail" leaving the reader unsure of whether to take the scenarios or artefacts literally or not (Pullin 2009:122). Critical design uses this ambiguity deliberately as a technique of engagement to provoke a reaction from the reader, mixing fiction and reality, and borrowing from existing commercial structures. "Suspension of disbelief" is a vital method of engaging with the reader: the critical artefact has to strike the perfect balance between being unusual or strange yet grounded upon real human behaviour. If the values within the artefact are too conventional, they will be absorbed without any critical reflection on behalf of the reader. "Too weird and they are instantly dismissed, not strange enough and they [are] absorbed into everyday reality" (Dunne and Raby 2001:63). In order for critical design to be effective, it must create an experience that Martin Amis refers to as a "complicated pleasure" involving the user in a narrative rather than prescribing a generic use. (in Dunne and Raby 2001:63). The idea of a complicated pleasure is something that Dunne and Raby highlight in relation to critical design. Dunne (in Moggridge 2007:595) relates this to design by asking, "How can you design products that provide complex and complicated pleasures, that stimulate our imaginations, create dilemmas, make us think, and rather than smoothing out our lives, actually create glitches?"

Dunne and Raby offer a suitable analogy for these two very different sets of design values. Metaphorically speaking affirmative design can be compared to the genre of the 'Hollywood blockbuster' through its mostly limited range of intellectual engagement, where the "emphasis is on easy pleasure and conformist values" (Dunne and Raby 2001:45). Its opposite, critical design is then film noir, which seeks to confront the values of conventional cinema genres through its dark, disturbing visual style and thematic content, focusing on complex human emotions and behaviour such as "disillusionment, melancholy, hopelessness, pessimism, moral confusion and guilt" (Blaser and Blaser 2008:5). According to Dunne and Raby (2001:46), imagining this concept in the context of design results in:

Design Noir. As a [design] genre [...] would focus on how the psychological dimensions of experiences offered through [design] can be expanded [...] this product genre would address the darker, conceptual models of need that are usually limited to cinema and literature.

By taking influence from the genre of film noir in the form of "Design Noir", critical design questions the lack of complex emotional and psychological experiences offered by the current role of design. When it is assumed that the role of design is only to make things positive or 'nice', it prevents designers from engaging with characteristics of human nature that are usually considered to be negative (Dunne and Raby 2007:17). Critical design uses these negative values in a positive way by highlighting the alarming possibilities of the current design paradigm in the form of a "cautionary tale" (ibid.).

The cautionary tale is a form of narrative that warns the reader of the consequences of certain actions or current behaviour. Many works of literature have a way of tapping into the conscience of society by means of their hopes and fears and expose the latent problems within society that have yet to be identified (Hellerung 2005:2). In a similar way, dystopian science fiction uses dark, extreme, over-dramatized, worst-case scenarios of the future as a critique of the consequences of current trends, societal norms or political systems. Where depictions of the future usually appear in works of science fiction, critical design uses the idea of "value fiction" (Dunne and Raby 2001:63). Instead of imagining new elements of science or fictional technology, critical design exhibits exquisitely designed critical artefacts that envision the social values that could possibly emerge in the future as a result of rapid advancements in technology. The apparently "ugly" dystopian vision of the future is undermined by the aesthetic perfection of the artefacts. The reader is forced to face their objections to this presented vision and is challenged to reflect on design's currently held values (Pullin 2009:122).

Consequences (4)

The objective of the critical design process is not to create new products as a way of solving a design problem. Its primary objective is to instill a level of critical reflection within the reader – "design that asks carefully crafted questions and makes us think" (Dunne and Raby in Pullin 2009:121) – or user of such critical artefacts. The artefact becomes a conceptual model, where the arrangement of materials, form, content and context project the conceptual elements of the artefact into the foreground. The critical artefact uses alternative values to prompt critical reflection in the reader in the following way:

- 1. The reader or user is presented with the critical artefact depicted within a scenario through the medium of publication or exhibition.
- 2. The alternative design values are played out within the artefacts and scenarios in a straight-faced, ambiguous way.
- 3. The reader or user then considers why the values within the artefacts and scenarios seem alternative, unusual or fictional.

- 4. The critical reflection occurs when the reader or user weighs the alternative values against the existing values of design.
- 5. Critical reflection results in a new awareness of the ideological dimension of design.
- 6. Awareness of the fact that design is ideological results in a society that plays an active role within their consumption of products and information through design.
- 7. Those engaging with critical design become emancipated from the hidden coercion embedded within design and ideology.

Conclusion

Critical design is a space for design and the imagination, unconstrained by market forces, client pressures, consumer desires and the like. It is a conceptual adventure in design underpinned by critical reflection, and a platform from which to imagine design futures, present solutions to as yet unidentified problems and it is a vehicle that draws attention to the challenges affecting the human condition.

The visual definition presented in Figure 1, and subsequently discussed in this paper, attempts to demystify critical design, to show it as a conscious and deliberate activity that has the power to transform how we think about design and how that challenges the affirmative design status quo. The pathway to engage in this dialectic follows the key aspects of *critical reflection*, *perspectives*, *processes* and *consequences* identified in the diagram. It also suggests that critical design is able to embrace the entire spectrum of design activity, existing as it does, in a conceptual realm, communicating meaning through abstract ideas and designing with values rather than raw materials. These design values are embodied in context-specific tools, methods and techniques used to create critical artefacts.

Anthony Dunne and Fiona Raby may be the pioneering practitioners of this scrutiny of the interface between design and culture, but it is clear that issues affecting the everyday world – sustainability, education, communication, health, amongst others – require that designers play a more active role in questioning the existing condition and proposing alternative solutions. Acknowledging that they have an authorial voice and encouraging students of design and design practitioners to critique the existing condition opens up the opportunity for reflexive practice. And perhaps as parallel activities critical design can bring richness to affirmative design by presenting less predictable solutions.

References

Amis, M. 1987. Einstein's monsters. London: Penguin.

Ball, R. and Naylor, M. 2005. Form follows idea: An introduction to design poetics. London: Black Dog.

Blaser, J. and Blaser, S. 2008. No place for a woman: the family in film noir. *Film noir studies*. [Online]. Available: http://www.filmnoirstudies.com/essays/no_place.asp [28 March 2011].

Bowen, S. 2007. Crazy ideas or creative probes? Presenting critical artefacts to stakeholders to develop innovative product ideas. *Proceedings of EAD07: Dancing with Disorder: Design, Discourse & Disaster*, Izmir, 11–13 April 2007.

Bowen, S. 2009. A critical artefact methodology: Using provocative conceptual designs to foster human-centred innovation. Sheffield: Sheffield Hallam University. (DPhil thesis) [pdf]

Buchanan, R. 1989. Declaration by design: Rhetoric, argument and demonstration in design practice. In Margolin, V. (ed.), *Design discourse: History theory criticism* (91–110). Chicago: The University of Chicago Press.

Crotty, M. 2003. The foundations of social research. London: Sage Publications Ltd.

Debatty, R. 2007. Designing critical design – Part 1: Jurgen Bey. *We make money not art blog*. [Online]. Available: http://we-make-money-not-art.com/archives/2007/03/designingcriti.php [10 February 2011]

Dilnot, C. 2008. The critical in design (Part one). Journal of writing in creative practice. 1(2): 177–189, June 9.

Dunne, A. 1999. *Hertzian tales: Electronic products, aesthetic experience and critical design*. Cambridge: The MIT Press.

Dunne, A. and Raby, F. 2001. Design noir: the secret life of electronic objects. Basel: Birkhauser.

Dunne, A. and Raby, F. 2007. Critical design FAQ. *Dunne and Raby*. [Online]. Available: http://www.dunneandraby.co.uk/content/bydandr/13/0 [16 June 2009]

Dunne, A. and Raby, F. 2009. A manifesto. *Dunne and Raby*. [Online]. Available: http://www.dunneandraby.co.uk/content/projects/476/0 [16 June 2009]

Dunne, A. and Raby, F. 2010. Between reality and the impossible. *Biennale International Design 2010 catalogue*. Saint-Étienne: Cité du design.

Frank, T. 2001. *One market under god: Extreme capitalism, market populism, and the end of economic democracy*. New York: Doubleday.

Freyer, C., Noel, S. and Rucki, E. 2008. Digital by design. London: Thames and Hudson.

Geuss, R. 1981. The idea of critical theory. Cambridge: Cambridge University Press.

Gretinger, K. 2007. Criticality in design – The blind spot. In Dilnot, C. 2008. The critical in design (Part one). *Journal of writing in creative practice*. 1(2): 177–189, June 9.

Hellerung, S. 2005. *The inhumanity of dystopia*. Roskilde: Roskilde University (MA thesis). [Online] Available: http://rudar.ruc.dk/handle/1800/1561. [22 May 2012]

Hill, J. 2000. Institutions of architecture. *Offramp* 1(7): 72–81.

Horkheimer, M. 1972. Traditional and critical theory. *Critical theory: Selected essays*. New York: Herder and Herder.

Lefebvre, H. 2002. Critique of everyday life: Foundations for a sociology of the everyday. London: Verso.

Malpass, M. 2009. Contextualising critical design: Classification of critical design practices. 8th European Academy of Design Conference, Aberdeen, 1–3 April 2009, 289–293. Aberdeen: The Robert Gordon University.

Margolin, V. 1989. Design discourse: History theory criticism. Chicago: The University of Chicago Press.

Mazé, R. (2007). Occupying time: Design, technology, and the form of interaction. Stockholm: Axl Books.

Mazé, R. 2009. Critical of what? In M. Ericson, M. Frostner, Z. Keyes, S. Teleman and J. Williamson (eds.), *laspis forum on design and critical practice: The reader* (379–397). Berlin: Sternberg Press.

Mazé, R. and Redström, J. 2007. Difficult forms: critical practices of design and research. *IASDR'07: International Association of Societies of Design Research 2007- Emerging trends in design research*, 12–15 November 2007. Hong Kong: Hong Kong Polytechnic University.

Moggridge, B. 2007. Designing interactions. Cambridge: MIT Press.

Nelson, H. G. and Stolterman, E. 2012. *The design way: Intentional change in an unpredictable world*. Massachusetts: MIT Press.

Poynor, R. 2003. No more rules: Graphic design and postmodernism. New Haven: Yale University Press.

Poynor, R. 2004. The time for being against. *Typotheque*. [Online]. Available: http://www.typotheque.com/articles/the_time_for_being_against [21 March 2011].

Pullin, G. 2009. Design meets disability. Cambridge: The MIT Press.

Seago, A. and Dunne, A. 1999. New methodologies in art and design research: The object as discourse. *Design issues*,15 (2): 11–17. Summer.

Stahl, B.C. 2008. Design as reification, commodification and ideology: A critical view of IS design science. *Proceedings of the 16th European Conference on Information Systems: Information systems in an innovative knowledge-based society*, Galway, 9–11 June.

Zizek, S. 2005. Design as an ideological state-apparatus. *ICOGRADA*. [Online]. Available: http://www.icograda.org/feature/current/articles274.htm. [13 August 2012].