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DESIGNED FUTURES

Design educators interrogating the future of design knowledge, research and education.

From Experiment to Social Action:
The shift in critical design

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Abstract

Critical design has been philosophically positioned as that which opposes the affirmative role of design as the status quo, offering itself as social critique located in the formalised spaces of museums and galleries. This paper contests that reasoning by firstly showing that in the contemporary sphere, criticality in design now resides in a more socially aware and humanistically engaged space. Design propositions can be expressed from the perspective of modes of enquiry that ask both What if? and How else? questions in the vein of Malpass and Slotnick. These then propose alternative ways of considering design not as a way of seeking answers but as a way of asking questions. Furthermore, participatory engagement and an understanding of the importance of community involvement in generating solutions have become normalised. This paper addresses this shift in thinking around the role of critical design, questioning how this may be addressed in design education such that it challenges affirmative design and foregrounds social awareness.

Keywords: Critical design, collaboration, participatory engagement, social awareness, design education

Introduction

Capital and culture bookend design and its role in society. Into the twenty-first century, Sparke (2013, p. 181) points out that this notion of design occupying such prominence between consumer desire, style and lifestyle, and social, cultural and economic roles, has led to its ubiquity. One may speculate on the inevitability of this viewpoint, as design and the creators of it, express 'our humanness' (Nelson and Stolterman (2014, p.11) and manifest, through 'design thinking' (Sparke 2013, p. 181) the cultural artefacts that have come to define us. It, therefore, seems entirely valid to investigate how the most recent 'category' of design, critical design, has evolved to encompass, not only the poetic and pragmatic but also the social and humanistic paradigms. This paper will contextualise critical design as it applies to the current era, and argue the case for an art-meets-design interface through presenting examples of collaborative student practice and discuss the value of participatory engagement in generating social awareness.

Critical design in context

Some 30 years back, before the emergence of the critical design concept, Victor Margolin (1989, p. 28) expressed design's role as the intersection of 'feeling' and 'reason', the unexpected and the rational, purposeful thinking and making, and creativity and logic. Embedded in the products of design are value systems, theories and ideologies that inform our worldview. Adding further layers to design's roles, Royal College of Art's, Anthony Dunne and Fiona Raby, in the 1990s, coined the term 'critical design', in reference to an activity that attempts addressing (Dunne & Raby 2013) a series of *What if?* questions: "possible, unthought-of situations for everyday life are imagined and objects [are] designed in response to these questions" (Julier 2014, p. 102). The reasoning here is that by focusing on poetics and fictions, they become defamiliarised and thus are able to critique the status quo more effectively. For Dunne and Raby (Bardzell & Bardzell 2013, p. 3298), bringing about social emancipation required disrupting and transgressing "social conformity, passivity, and similar values of capitalist ideology" embodied by affirmative design practices.

Hawley (2018, citing Dunne & Raby 2013, p. 35) adds that,

> Critical design is often used as an umbrella term to describe [...] conceptual design that works closely with the notion of the everyday object and the quotidian experience, applying the practice's wider freedom of expression to explore design's possible relationships to ecology, private experience and civic life. Criticality and socially engaged, intellectual design exercises are shown to address a range of design rhetoric, terminology and perspectives.

Malpass (2013, p. 352) contemplates the critical/speculative design relationship noting how satire, narrative, ambiguity and rational thinking can coexist as criteria for measuring critical design's critique value. Hunt (cited in Slotnick 2015) argues that it is entirely plausible and relevant for the critique to be located between the poetic/pragmatic, commentary versus action dichotomy. Needless to say, there are many divergent views regarding the relationship between design poetics and design pragmatics, some advocating for their coexistence and others critical of criticality for the sake of intellectual curiosity.

Critical reflection (and criticality) must of necessity become embedded in professional and educational, academic practices, as an essential dimension of design, and it should question the traditional perception of design as a bridge between art and capital. This is evident in the design of new visual arts curricula at Nelson Mandela University (NMU).

> A key tenet of the learning [in this programme] resides in stimulating personal growth through practising analytical, critical, reflective and problem-solving skills. Further to this is the intent to develop the student's world view such that there is a deeper understanding of the role the visual art and design disciplines have in influencing society (Cadle 2015, p. 2).

Dilnot's (2008, p. 177) standpoint that criticality should "define[s] the very state of being of a [design] practice" resonates with this and points to the importance of understanding that the capital versus culture dichotomy and its relationship to everyday life may be better represented by the design culture/design anthropology connection. Julier (2014, p. 239) offers that "[d]esign culture is about processes, people, relationships, flows, fluxes and vectors, but it is also about stuff. Knowing what stuff is, being able to read it, handle it and experience it and think deeply and critically about it". Cadle (2015, p. 1), discussing a learning outcome of the Bachelor of Visual Arts Honours degree at Nelson Mandela University echoes this view that it should "[a]pply advanced critical thinking, problem-solving and research skills in pursuit of knowledge application". This synergises with design anthropology, the academic field that combines the elements of design and anthropology in debate (Gunn et al. 2013, in

Anastassakis & Szaniecki 2016, p. 124) about knowledge production, collaboration between designers, anthropologists and users, and co-creative practices (participatory design) (Otto & Smith 2013, p. 124). "In particular, design anthropology has emphasised collaboration and co-creation" (Gunn, Otto & Smith 2013 in Mazé 2016, p. 50), the participatory practices discussed later in this paper, allowing for new ways of understanding design epistemologies and their connection to the human condition, according to Otto and Smith (2013). Mazé (2016, p. 50) notes that Ingold (2013) "argues for an anthropology not *of* but *with* design, art and architecture and emphasises *making* as a way of creating knowledge". This notion plays into critical design discourses where humanising factors are central to purpose.

Depending on cultural, economic, political and social factors, a good example of how this poetic/pragmatic, art/capital scenario is exemplified is through the Knotty Objects Conference 2015 discourses. Antonelli (cited in Slotnick 2015), at the *Knotty Objects Debate: On Critical Design*, held at MIT Media Lab in 2015, presents Tim Parsons' view that "critical or speculative design [...] does not work from the problem-solution paradigm but from the position of raising awareness of issues through the creation of fictional scenarios that the creators do not necessarily advocate". Audiences are expected to question, contest, discuss and challenge these proposals as they seek to make sense of the world.

Ansari (cited in Slotnick 2015) proclaims that most critical design is "driven by aesthetic and intellectual questions rather than political ones [and that] grappling with complex [...] systems requires [rather] asking *How else?* [questions]" *How else?* emphasises a connection to current structures and systems where the principal project is not framed as an aesthetic, exploratory, intellectual exercise but as a political, transformative, active enterprise (Slotnick 2015). Hawley (2018, p. 6) posits the relationship between the *What if?* and *How else?* questions from the perspective of how these might apply to "modify[ing] everyday [...] transactions". These very questions are germane to the relationship between critical design and participatory engagement, as reflected in the Collab Project discussed later in this paper. Intrinsic to this discussion is, in my view, the shift of critical design into the space of embodied criticality, as proposed by Rogoff (2006) that allows students and emergent practitioners to 'see' how else critical design may be employed as a discursive device. Ansari's (Slotnick 2015) response is that "critical design is not sufficiently critical or imaginative in its provocations, reflecting the fears, anxieties, desires, imaginaries and ultimately, the politics of an intellectual, liberal, white, middle-class that believes in the promise and purity of technological progress" The [critical design] projects do not commit to any programme of action instead they continue to highlight global inequality and new forms of colonialism, among other injustices. Despite this, the perspective of this paper is reliant on there actually being a relationship between these opposing views. Malpass (2012, p. 59) notes that a conceptual thread, exhibiting design's capacity to work boldly with the relationship between design and people [exists], and, for the purposes of questioning, needs to find its own taxonomy (perhaps this taxonomy lies in the heretofore contested duality 'separating' design from art).

The design versus art issue

I argue that these apparent dichotomies, discussed in the previous section, co-exist in the educational space, as the former introduces critical design process and thinking to students and emergent practitioners where the imaginaries, play, aesthetic and exploratory approaches that drive both artistic and design expression are equally relevant to the desire for a designed outcome that is in the service of society's needs and the business imperative. Heskett (2017, pp. 54–57) is more scathing of this notion, insisting that design should not be 'equated with art' as this is a trivialisation of the role that design plays, even as there are multiple ways in which designers' competencies and capacities can be deployed. The least of which should be the ability to encompass thinking that is acknowledging of social responsibility and social

awareness, and asks difficult questions, like *What if?* and *How else?* in pursuit of innovative 'answers'.

Consequently, opportunity presents itself that allows for the transition into, or link with, the design art space to be made. It is an important connection to establish as it serves to mollify those who suggest that the creative processes that birth art and design artefacts are intrinsically different. Folkmann (2013, p. 5) states that "imagination is not only an internal matter of consciousness actively operating in the phase of creative production; it is also mediated and, as imaginary meaning, made tangible by and detectable in design objects". Aesthetic creations like these reside in the space between poetry and pragmatism, and although Folkmann (2013, p. 5) advocates for a distinction between design and art, such that even if the former is not overtly focused on solving a problem, he believes that design relates more to 'basic organising principles of human life'. Design art (or art design), according to Julier (2014, p. 103), however, "should be read much as a function of a particular commercial circumstance as a desire by some practitioners to poeticise design". The emergence in the 2000s of 'design as art' practice relates to 'crossover' fine art practices in the 1990s where material things and materiality support art concepts and inject the every day into creative practice. It is not a major leap of the imagination to see how this resonates with similar artistic techniques employed by the pop artists, and the use of 'ready-mades' by Duchamp and his ilk. The use of found objects as a design technique, albeit similar to the fine art intent, takes the "ordinary, everyday stuff of life [to be] re-used to suggest a story or, more straightforwardly, enhance its beauty" (Julier 2014, p. 104). I suggest, therefore, that critical design and speculative thinking approaches and fine art creative imaginings can coexist, especially when operating in a participatory hybrid environment of collaboration as illustrated in the following section.

The Collab Project

The Bachelor of Visual Arts qualification at Nelson Mandela University was devised to provide for transdisciplinary learning,

> [A]cknowledg[ing] the growth of hybrid industries within the visual and design arts, where boundaries between the disciplines are blurred, where technological developments spur innovative developments, and where collaborative projects are commonplace, [and] question[ing] the very narrowly defined parameters and obvious skills needs formerly required of these disciplines (Cadle 2012, p. 3).

Synchronous with this, the Collab Project's learning and teaching experience were devised as a way of exploring the engagement opportunities available in collaborative student activities, hence the title. Collett (2019, p. 1) states that the project intent is to "facilitate collaboration across disciplinary boundaries [...] illustrat[ing that] through practice, [...] in the 'real' world, creative projects are frequently hybrids where multiple voices contribute to a unified output or product". By stimulating participatory creative engagement and learning, this project, run over a two-week period with 140 second and third-year visual arts students, from diverse streams: fashion, fine art, graphic design, photography and textiles, "engage[s] with Sethembile Msezane's work as a trigger [such that] [t]he outcome of this process [is] a hybrid product/artefact [or performance] that is created by the group" (Collett 2019, p. 1). Four or five students worked in mixed disciplinary groups towards a consensus-based creative end-result. Aspects of Msezane's (Msezane 2019) artistic production have "examined the processes of myth-making which are used to construct history, calling attention to the absence of the black female body in both the narratives and physical spaces of historical commemoration". These impetuses informed the themes underpinning the critical enquiry that the students were tasked with, namely history, heritage and memory; performativity of identity; the

gendered body and narratives of public space. All of these themes allow for a degree of embodiment in the creative tasks directly but also in the nurturing of group and self-awareness through a series of 'awakening' activities.

Rogoff (2006, p. 1) argues that "the notion of an 'embodied criticality' has much to do with [the] understanding of our shift away from critique [...] towards criticality, a shift [...] essential for the actualisation of contemporary cultural practices". In this sense, the Collab Project allows students to explore the creative process from the perspective of 'being within' and 'awake to the collective dynamic' as participants in a group. Here they inhabit a problem, exercise collective critical judgement and intuitively propose a 'solution' (Rogoff 2006, p. 1). Engagement with outside 'actors' is an expected and natural spinoff of this approach, allowing opportunity to experience others' views, ideas, and lived realities. In this uncomfortable space of otherness, they are able to perceive differences and alternative worldviews. This is an example of participatory action research at work, although the students were unaware of this as their guiding methodology. Cassidy (2017, citing McTaggart 1997) clarifies that this occurs through "active engagement in critical dialogue and collective reflection, which helps them recognise that they have a stake in the overall project". An important aspect of the trajectory of this process lies in the participatory nature of the group engagements. As Carlin et al. (2018) point out, "a fluid and playful process of negotiation, self-reflexive observation, speculation, listening, writing and embodied interaction [...] could provoke people to re-imagine, discuss and interrogate an [...] artefact". The philosophy underpinning the participatory, collaborative strategies is to improve lives through social change, creating meaning and expressing values where participants are able to share their knowledge towards the achievement of a united purpose (McIntyre 2008, p. 1). It was precisely this approach that Msezane employed to provoke critical, creative responses from the students and encourage the asking of *What if?* and *How else?* questions in the design of their group's artefact, resulting in a recursive cyclical process of questioning, reflecting, developing responses and implementing findings (Cassidy 2017, p. 278). Perhaps central to this learning/research approach is that it is the product of three underlying principles: collective commitment to investigate an issue; to gain clarity of the issue under investigation through reflection; a joint decision to pursue a course of action that benefits all involved (McIntyre 2008, p. 1)

Adjunct to this is the foregrounding of social engagement and awareness in academic programmes in the twenty-first century (Clarke 2016, p. 72) using "co-design, design research, design thinking and design cultures [... together] with experiential events and workshop-based activities" (as in this Collab Project) to encourage students to see themselves as agents of change, able to operate in an increasingly complex world (ibid.). This emphasis on the social, participatory and the creative collaboration is the engine upon which this project allowed the students to insert their own ethnographies into the "practice of material and immaterial making, [...] speculat[ion and] transformat[ion]" (Hunt 2011, p. 35). To capture the spirit of this ethos, Msezane, through a series of action workshops that included sharing histories, acknowledging group and individual voices; focusing; physical activities like singing, dancing and rhythm exercises; intellectual exercises that challenged gender norms, performed identities, fears, preconceptions and more; upended the canons of the acceptable and the affirmative in favour of braveness, brio, curiosity, conscience, truth and inhabiting the uncomfortable. Together students were 'coaxed' into a place where they could not ignore their roles in living and influencing social awareness and provoking criticality within and through their respective disciplines, thereby discovering the hybrid artefact. Throughout this sequence of engagements, staff served as mentors, encouraging critical reflection and guiding the scaffolding of ideas. Also, the imperative to resolve the *What if?* and *How else?* questioning and make decisions regarding the efficacy of the artefact, thus created with some urgency was determined by a tight, five-day timeline. Projects had to be brainstormed, conceptualised, crafted and displayed within that period.

Some Collab Project successes

This section will feature three of the projects' resultant artefacts in an attempt to illustrate how the groups responded to the themes. The artists' statements/abstracts are reported verbatim so as not to diminish their conviction and passion regarding their collective and individual involvement with the projects. I have also not applied ekphrasis to their efforts, as the works should be adequate to the task of expressing their own meaning.

Come Play (Figure 1), based on the theme *narratives of public space.*

> In this artwork, we explore the narratives of public space and address the issue of public safety. This artwork highlights the problem of betrayed public spaces that were created for a specific audience but were interrupted and destroyed by others.

> As a group, we explored public parks and areas designated for children, where we experienced the unsettling atmosphere and activities of these areas. We also noticed that no children were playing in these areas. We used the contrast between innocence and brutality by using the metaphor of children and their harmful surroundings. We did this by creating a model of a playground for children using dangerous and inappropriate objects found in these public spaces: needles, broken glass bottles, blades, barbed wire, pins, rusty nails, etc.

> The purpose of the artwork is to highlight that public parks increase crime and instil fear instead of bringing the community together in a safe space. The artwork should create awareness for those who are not affected and not aware of the atrocities that occur and attempts to expose the hidden, underlying narratives of public spaces. Everyone in our group realised how important it is for the public to know about unsafe spaces and we wanted to challenge society's view of public spaces to bring about change (Bucksey et al. 2019).

**Figure 1: Bucksey, Matthee, Msuma, Smith & Sokutu, *Come Play* 2019.
Multimedia (concrete, wood, spray paint and found objects) (photo by Bruce Cadle)**

Roadblock (Figure 2) based on the theme *narratives of public space.*

> [T]he aim was to create an artwork which tells a story from knowledge we have gained, in a way that combines our artistic skills and way of thinking. The subject that was agreed on is the narrative found in a public space between the public inside a vehicle, the outside public and the barrier(s) found between them. This idea was evoked by the experience of driving through public spaces, being approached by people on the outside, and the ongoing silent conversation due to incapability to reach out, or reach within (Buys 2019).

> We then began to discuss how encountering a beggar was common to us but somehow still an uncomfortable experience. We all continued to share[d] how we struggle to empathise with homeless people. We then came to the conclusion that the discomfort between a beggar and others can also be similar to how people also experience discomfort with anyone in a public space. We used the street situation as an analogy for this discomfort (Nabira 2019).

> Through retrospective views, a car physically acts as a barrier between the two parties and is even a form of protection for the inside party. But looking through a social theoretical lens, the car is a representation of unseen communication barriers in public spaces, such as language, culture, religion and privilege (Buys 2019).

The installation consists of a car door hung at its normal height with seven, black, continuous wire-frame figures hung 'outside' the 'car', and a 'driver', hung 'inside' the car.

> [T]he single-car door is effective enough to represent a whole vehicle as the barrier, just as a contoured outline of a face can represent a whole person, as it is generally the most public part of the body. The reason for creating contoured facial structures that do not portray any specific person is to draw attention to the narrative as a whole and to enforce the idea that it could be anyone in that position (Buys 2019).

Figure 2: Buys, Cewu, Friedeman, Leo & Nabira, *Roadblock* 2019.
Car door, spray paint and wire (photo by Bruce Cadle)

Inner(Connect) (Figure 3), based on the theme *performativity of identity.*

> *Inner(Connect)* aims to explore the connections between performativity and identity. It intends to convey the theory that personal insecurities are the common thread that connects all human beings to one another regardless of race, gender, and sexuality, among others.
>
> Individually, each member of the group identified their own personal insecurities, and we used this as the basis for our project. We used a combination of

photography, needlework and the use of installation space to create the piece. Each photograph intimately conveys each individual personal inner journey. The two portraits of each person provide a contrast between how we present ourselves to the world and how our deepest insecurities affect [us] on the inside.

On the dark photographs, we embroidered line drawings that serve as a metaphor for our own personal insecurities. Inspired by artists such as Mary Sibanda [and] Chiharu Shiota, we used red yarn to connect the photographs to one another. This is a representation of the universal unification of identity and insecurities across the world. The suspended length of thread that leads to the ground, from each image, symbolises the undoing of the mind. The messy space of the string is a metaphor for the messiness of human nature.

During the process, each of us was challenged to confront things about ourselves that we did not necessarily like. The truth is you cannot hide from yourself. We all have insecurities, but it's up to you to choose whether you will let it define your identity (Albia et al. 2019).

Figure 3: Albia, Du Plessis, Hift, Potgieter & Yehana, *Inner(Connect)* 2019. Photography and multimedia (photo by Bruce Cadle)

Conclusion

What then is one to take from the above examples without resorting to the buzzwords accorded educational innovation and new models of learning? Firstly, it locates the creative undertaking in a less rigid disciplinary silo through arguing for synergy between design and art practices. The link in with criticality and its many configurations, begins with critical design shifting from its high design, intellectual scenario-critique, through design as criticism, to a more speculative role, avoiding reading and understanding objects and their ontologies, and rather engaging in tactics of doing, invoking social awareness and agency. Here the speculation concomitant with this, positions collaboration and participation as a design-informed style of

critique that is a bridge between stakeholders (Kjærsgaard & Boer 2016, p. 220). Application of *How else?* questioning, especially in such a learning environment, suggests that the levels of critical thinking are enhanced and evidently result in some compelling creative outputs. Considering that two of the three examples (Fig. 2 & Fig. 3) were produced by second-year student groups, employing this kind of learning approach is rewarding to all. Significantly, acknowledging the impact of critical design methodology (albeit at the time few participants were aware of its similarity to Msezane's workshop style that encouraged the development of embodied criticality) blurred the design/art interface into a more hybrid space broadening students' social consciousness. Despite the 'expert' dissenting voices, we are of the conviction that this stance is what underscores the uniqueness of the Bachelor of Visual Arts programme and results in higher-order social awareness. In 2020 the Collab Project will once again be conducted, this time likely taking closer note of the methodology employed, and unpacked by this paper, but more importantly refining it as a platform for the acquisition of tacit knowledge and critical life skills

References

Albia, Z, Du Plessis, A, Hift, A, Potgieter, K & Yehana, S 2019, *Inner(Connect)*, Bird Street Gallery, Nelson Mandela University, Port Elizabeth, viewed 10-25 April 2019.

Anastassakis, Z & Szaniecki, B 2016, 'Conversation *dispositifs*: towards a transdisciplinary design anthropological approach', in RC Smith et al. (eds), *Design anthropological futures*, Bloomsbury, London, ch 8, pp. 121-38.

Bardzell, J & Bardzell, S 2013, 'What is critical about critical design?', *Conference on Human Factors in Computing Systems*, ACM Press, New York, pp. 3297-306.

Bucksey, H, Matthee, N, Msuma, N, Smith, E & Sokutu, K 2019, *Come Play*, Bird Street Gallery, Nelson Mandela University, Port Elizabeth, viewed 10-25 April 2019.

Buys, D, Cewu, V, Friedman, A, Leo, N-J & Nabira, A 2019, *Roadblock*, BIrd Street Gallery, Nelson Mandela University, Port Elizabeth, viewed 10-25 April 2019.

Cadle, B 2012, *Report to the Academic Planning and Quality Committee (APQC) from the Faculty of Arts. Form 2 proposal for new learning programme: Bachelor of Visual Arts*, Nelson Mandela Metropolitan University, Port Elizabeth.

Cadle, B 2015, *Form 2: new formal learning programme (phase 2) bachelor of visual arts*, Honours, Nelson Mandela University, Port Elizabeth.

Carlin, D, Akama, Y, Pink, S & Sumartojo, S 2018, 'Uncertainty as technology for moving beyond', in Y Akama et al. (eds), *Uncertainty and possibility: new approaches to future making in design anthropology*, Bloomsbury Academic, London, UK, pp. 103-23.

Cassidy, T 2017, 'Research approaches for culturally significant design', in S Walker et al. (eds), *Design roots: culturally significant designs, products and practices*, Bloomsbury Academic, London, UK, ch 20, pp. 277-89.

Clarke, AJ 2016, 'The new design ethnographers 1968-1974: towards a critical historiography of design anthropology', in RC Smith et al. (eds), *Design anthropological futures*, Bloomsbury Academic, London, Uk, ch 5, pp. 71-85.

Collett, R 2019, *Project brief for bachelor of visual arts, Faculty of Arts, School of Music, Art & Design*, Nelson Mandela University, Port Elizabeth.

Dilnot, C 2008, 'The critical in design (part one)', *Journal of Writing in Creative Practice*, vol. 1, no. 2, pp. 177-89.

Dunne, A & Raby, F 2013, *Speculative everything: design fiction and social dreaming*, The MIT Press, Cambridge, Massachusetts.

Folkmann, MN 2013, *The aesthetics of imagination in design*, The MIT Press, Cambridge, Massachusetts.

Hawley, AJ 2018, 'A bargain that dissolves into a poem unwritten: a critique of bargain retail practices and homemaking through critical design', Master's dissertation, Visual Arts, Nelson Mandela University, Port Elizabeth, 10 December 2018.

Heskett, J 2017, *Design and the creation of value*, Bloomsbury Academic, London, UK.

Hunt, J 2011, 'Prototyping the social: temporality and speculative futures at the intersection of design and culture', in AJ Clarke (ed.), *Design anthropology: object culture in the twenty-first century*, Springer, Vienna and New York, pp. 33-44.

Ingold, T 2013, *Making: anthropology, archaeology, art and architecture*, Routledge, London.

Julier, G 2014, *The culture of design*, 3rd ed., SAGE, London.

Kjærsgaard, MG & Boer, L 2016, 'Design anthropological fictions: mundane practices meet speculative critiques', in RC Smith et al. (eds), *Design Anthropological Futures*, Bloomsbury Academic, London, UK, ch 14, pp. 217-34.

Malpass, M 2012, *'Contextualising Critical design: towards a taxonomy of critical practice in product design'*, PhD thesis, Nottingham Trent University, viewed 1 July, <http://ualresearchonline.arts.ac.uk/6102/1/Contextualising_critical_design.pdf>.

Malpass, M 2013, 'Between wit and reason: defining associative, speculative, and critical design in practice', *Design and Culture*, vol. 5, no. 3, pp. 333-56.

Margolin, V 1989, *Design discourse: history, theory, criticism*, University of Chicago Press, Chicago.

Mazé, R 2016, 'Design and the future: temporal politics of 'making a difference'', in RC Smith et al. (eds), *Design anthropological futures*, Bloomsbury, London, ch 3, pp. 37-54.

McIntyre, A 2008, *Participatory action research: qualitative research methods*, SAGE, Los Angeles, CA.

Msezane, S 2019, *Sethembile Msezane*, viewed 1 July 2019, <http://www.sethembile-msezane.com/about>.

Nelson, HG & Stolterman, E 2014, *The design way: intentional change in an unpredictable world*, 2nd ed., The MIT Press, Cambridge, MA.

Otto, T & Smith, RC 2013, 'Design anthropology: a distinct style of knowing', in W Gunn et al. (eds), *Design Anthropology: Theory and Practice*, Bloomsbury, London and New York, pp. 1-29.

Rogoff, I 2006, *Smuggling - an embodied criticality*, viewed 2 July 2019, <http://xenopraxis.net/readings/rogoff_smuggling.pdf>.

Slotnick, S 2015, *Knotty objects debate: on critical design, [1:10:43]*, MIT Media Lab, MIT, <https://www.media.mit.edu/videos/knotty-objects-2015-07-16-10/>.

Sparke, P 2013, *An Introduction to design and culture: 1900 to the* present, 3rd ed., Routledge, Abbingdon, Oxon.