

Designerly Ways of Futuring: Virtual Reality as a foresight tool for Long Term Sustainability

Jomy Joseph¹

¹Institute of Design, The Oslo School of Architecture and Design, PO Box 6768 St. Olavs plass, 0130 Oslo, Norway, email: jomy.joseph@stud.aho.no, Phone: +47 96712693

Abstract:

With the early onset of cataclysmic climate breakdown (Xu et al., 2018) and “biological annihilation” culminating in the ‘sixth mass extinction’ (Ceballos et al., 2017), organized human life is presented with a bleak future. Even in our collective imagination we are forced to comprehend the self-reinforcing loops of dystopian thinking where it has become far easier to imagine the end of the world (O’Brien 2018; Slaughter 1998). Given the pressing and immediate need for climate action there seems to be a crisis of imagination in seeing futures beyond the dystopian visions of ‘Business as Usual’ (BaU) (Slaughter 1998). Given these *defutured* (Fry 1999) frames, it becomes *essential* to imagine and design for radically different, long-term sustainable futures—futures that don’t yet exist. But to avoid the cognitively loaded processes of *predicting* these futures, forms of *playful* anticipation with conceptions of the future have been put forth that suggest opening up possibilities for more robust futures, engaging in a more “brain-body-spirit” learning through “other ways of knowing” (Inayatullah 2017).

These “designerly ways of knowing” (Cross 1999) the future, frame how designers engage as ‘futures archaeologists’ (Candy 2013) within a futuristic design. These “designerly ways of futuring” happen within discursive design where specifically Speculative and Critical Design (SCD) has been creating these moves towards designing for such alternative future contexts by gathering foresight into strange and “provocative” future worlds (Dunne and Raby 2013). SCD as a practice claims to envision alternative future scenarios with artefacts for not ‘how things are’ but ‘how they could be’. However, in its rejection of “design-solutionism” and “problem solving” (Bardzell and Bardzell 2013), it ends up either further entrenching market-based alternatives or overtly focusing on dystopian warnings of BaU futures that are neither desirable nor feasible (Tonkinwise 2014). In this paper, SCD is applied as a strategic enquiry for the ‘design doing’ by ‘probing’ and ‘sensing’ and resolving alternative futures to *discover* new possibilities in the case of solar technologies of the future. Within this “solution-finding” approach to SCD, Virtual Reality (VR) explores the future of renewable solar energy through an alternative technological frame of renewable solar energy by *anticipating*, *projecting* and *provoking* technology in a speculative future. Here, VR is employed as a tool to break from ‘reality’ of the present, suspending disbelief and enable design practitioners to *discover* these speculative technologies—an immersive form of “brain-body-spirit” learning. In such an SCD framework, speculative futures are pursued not to predict the impact of climate change on futures, but to *reveal* the diegetic prototypes (Kirby 2010) for preferable futures as a ‘point of departure’ for these technological frames to be pursued today.

Artefacts from this speculative future explore fictional technologies through a design fiction (Lindley and Coulton 2016; Bleecker 2009), titled “Blockchain Radioactive”, which is then “built” in VR for gaining foresight into forms of possible solar cell technologies that might *emerge* from this future. The VR fiction explores an egalitarian, technologically advanced, nomadic community in Chernobyl in the year 2075. This community ‘harvests’ solar energy with “solar energy staffs” which convert solar, wind and radioactivity into safe renewable energy. These “solar staffs” are speculations of technological research in solar energy that already exists today, speculating and *apologizing* them to fit this alternative future. The foresight from this ‘speculative’ future fiction is then ‘back-casted’ towards a pragmatic solution today—as a 3D printed, optical solar cell—drawing and combining upon existing material and technological frames. These are proposed as an alternative for solar cells today in which fiber optic structures are 3D printed and etched with graphene to harvest renewable solar energy today. This manifestation of a speculative future artefact realized back into the present—fragments of technology from an imaginary future, might be considered a form of “time travel”. Here the designers that construct it become the “futures archaeologists”. These artefacts are not intended to “prove” these technologies but articulate a

broad scope for “solution-finding” towards long-term sustainability in some parts by critically reimagining the normative traits of solar cells.

The paper will discuss how these speculative, ‘radical imaginings’ in VR of more resilient and preferable futures might *discover* other such technological artefacts by *embedding* these the future foresights into the artefacts themselves. In so far as it enables for visualizing and ‘bodily sense-making’ of the abstract future scenario, the HTC Vive VR headset functions as a portal to a “speculative time” which helps investigate the texture and potentiality of future artefacts. In conjunction with ‘traditional’ industrial design tools and artefacts, a concept film, shot in this “virtual future” explores the complexity of the diegetic prototype from the design fiction (Arnall and Martinussen 2010). Introducing VR helps bridge the uncertainties of space and time whereby an imagined, *artefact* can be transposed into a virtual future “world” through simultaneous narrative and fictional ‘world building’ (Wille 2015). VR shows potential as an open collaboration tool for industrial designers and other stakeholders, those otherwise interspersed globally, to engage with these future visions and build desirable futures. The paper reflects on the ways in which such a ‘futures oriented’, ‘solution-finding’, SCD practice, might facilitate both critical futures discourse *and* designed solutions for climate action towards long-term sustainability.

Keywords: Future, foresight, virtual reality, climate change, sustainability, prototyping, industrial design

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