Eleanor Dare

Diffracting Virtual Realities: towards an A-effected VR

Diffracting Virtual Realities: towards an A-effected VR offers a short manifesto for a diffracted, critical virtuality and for wider technological and related pedagogic practices, ones which eschew over determination and simplistic empathy rhetoric. The paper, or rather, _manifesto_, proposes, instead, a deliberately artificial VR, with a purposeful strategy of diffractive observation and commentary. The manifesto analyses a range of theoretical and critical approaches, evidencing their foundation in a power struggle between deterministic ontologies and what Barad frames as _Agential Realism_ (Barad 2017), it forms a new connection between Barad's non-determination and Brecht's _A-effect_, which seeks to replace over-determined, hypnotising immersion, with alertness to systemic power structures. Agential Realism emerges from the entanglement and contingency of human and non-human _relata_, from objects and subjects and their performative co-relations, as explained in this manifesto. The manifesto aligns itself with Brecht's critique of empathy, and with a broader critique of humanist individualism. _Diffracting Virtual Realities_ is positioned against the valorisation of individual, psychological representation, and instead argues for structural methods, conducive to systemic change. The manifesto is indebted to Stephen Unwin's book _The Complete Brecht Toolkit_ (2014), from which many pragmatic and theoretical insights have supported the teaching of virtual reality, storytelling and performance against prevailing constructs of individual immersion and empathy.

Introduction

> Barad's nemesis is a "metaphysics of individualism"'. (Peacock, 2010)

This manifesto is aimed at developers, storytellers, VR audiences and academics, it is the beginning of a more extensive VR and extended reality pedagogy. Unwin's _Complete Brecht Toolkit_ (2014) provides many useful exercises which can be adapted to support the teaching of an A-effected or meta-immersive VR. These

exercises can be applied to both the development of VR content and the philosophical analysis of virtual reality technologies and their social imaginary. Brecht and Barad provide many useful ways to avoid the enfeeblement of either a passively immersive spectatorship or the hypnosis of self-reflection. They are cited here because they support actions and processes, as well as being theoretically relevant to the trajectory of all our realities.

Virtual Reality, in its current, domestically available form, like other technologies which emerged before it (such as television, home computers video games, the World Wide Web and Social Media) has been a focal point for neoliberal projection, for ideological constructs of personhood and technological agency, for the nature of reality itself. Examining empathy rhetoric and its apparent opposite – VR experiences in which fear and anxiety are invoked, through a Brechtian and Baradian approach, is proposed here as a useful way to test the determinist hyperbole relating to VR. Connecting the example of VR hype to wider examples of overdetermination and their opposite, an Agential Realist, performative framing of technological mediation, is the focus of this manifesto.

VR hyperbole, is (or perhaps, *was*) unusually intense, arguably because of its relationship to the hopes of Big Tech corporations such as Facebook, Google, Microsoft and Samsung. The hopes of Big Tech companies were (and still are) supported by the mainstream press. In 2014 Google developed the Cardboard API and headsets at a minimal cost, designed to create a mass market for VR applications, this was widely advocated by the media, as Willens states:

> For Google Cardboard, Google leaned on marketing partners such as The New York Times, which shipped 1.3 million of the devices to subscribers over a five month period (Willens 2019).

The investment in VR by organisations such as the United Nations and the World Health Organisation, as well as the US Army, aggregated to create the conditions for an uncritical mass of VR hype. In the last few months, the VR hype cycle seems to have entered a new phase, with the withdrawal of the Daydream VR headset, the Samsung Gear headset and the closure of the BBC VR Lab. In tandem with these closures and an arguable downturn in the hype of 2014-2018, narratives about VR as an agent of wellbeing and empathy have escalated, and with it a greater focus on

AR and mixed reality for health and education, with Facebook, Apple and Google projecting their hopes onto mixed reality, the combination of VR and AR. VR is therefore, an apt topic for analysis, representing ideological tensions between the body and the mind, the Global North and the Global South, the immanent and the fixed, between over-determinism and contingency; The cultural imaginary projected onto VR exposes the seemingly irreconcilable differences between corporate ontology and Agential Realism, Karen Barad's term for the entanglement and contingency of agency.

Since Karen Barad wrote _Meeting the Universe Halfway_ in 2007, there has been, if anything, a resurgence of investment in the neoplatonist idealisations of data science. That which Barad's Agential Realism sought to critique and offer an alternative to, has become the dominant ideology of Platform Capitalism; in other words, there has been a concerted reversion to positivist reductionism and neoliberal individualism, and with it the racism and misogyny with which it was always entangled. At the same time, VR technology has become a crucible for many of the most urgent ideological tensions implicated in this resurgence of neoliberal determinism, with for example, a trajectory towards wholesale replacement of state therapeutic services with privatised VRT (virtual reality therapy). Recent scandals involving _Cambridge Analytica_ and _Innotech_, aside from their assault upon the voting and auditing mechanisms of liberal democracy, also point to a connection between extreme right-wing conservatism, platform capitalism and ideologies of metricisation and positivist reductionism. Entangled with the right-wing agenda of such reductionism is the seemingly paradoxical emphasis on empathy, but VR empathy rhetoric and right-wing techno-determinism are the flip sides of the same coin, one which Baradian and Brechtian methodologies can provide an alternative to.

Over determination and _pro-social_ VR

The hyperbole which has surrounded VR since 2014, is supported by a media which seem largely incapable of critical distance from it, Facebook's purchase of Oculus Rift in 2014 and the ambitions of other Big Tech giants such as Google and Microsoft, were, and still are, entangled with concerted efforts to promote VR as a

technology with beneficial, socially 'empowering' outcomes. The UNVR (United Nations VR) was established in 2015, describing itself as a project which 'uses the power of immersive storytelling to inspire viewers towards increased empathy, action and positive social change' (UNVR n.d), numerous other initiatives served to give VR manufacturers uncritical publicity, including UNICEF's extensive use of VR, for whom:

> new technologies, such as augmented reality and virtual reality (AR/VR), have the potential to vastly enhance the organization's ability to reach and assist children in its programme countries in key areas such as health, education and training. The challenge is to ensure that this potential is harnessed and scaled to benefit millions of children. (Unicef.org nd)

Indeed, VR is referred to as 'Virtuous Reality' in one article on the UNICEF web site, but how is this virtue reconcilable with the deployment of VR as a rehearsal mechanism for military conflict? Massive investment in VR by the United States Army is apparently escalating, so that by 2022 it is estimated the U.S Army will have spent $11 billion on 'virtual, augmented and mixed reality training systems, with virtual reality becoming a primary focus of military innovation' (Radu 2018). Despite the use of VR as a military tool, the rhetoric of empathy has, since Chris Milk's *Ted Talk* of 2015 entitled, 'The Empathy Machine' continued to be invoked to the extent that it is almost synonymous with the words Virtual Reality. The hype underpinning VR, Big data and self-quantification is linked by the same rhetoric, that of free market neoliberalism combined with surveillance capitalist mechanisms, which seek, above all, to harvest and predict 'behavioural derivatives' as commodities, but also to exert political and financial control on a scale which is beyond the grasp of human imagination, the very definition of Big Data. All of these ideologies are founded on _a priori_ essences and separations between the world, between objects, animals and human subjects, indeed, in the Big Data paradigm the external world is processed as data, reducing subjects to over determined templates of subjectivity, the so called 'Big Five personality traits' beloved of Cambridge Analytica.

The Cambridge Analytica scandal evidences in explicit terms the social and subjective formation entangled with technologies. As this section has evidenced, in

the realm of VR, subject formation is unequivocally invoked via the construct of empathy. What follows is an analysis of the significance of theories of mediating agency which do not focus on empathy, such as Brecht's _Alienation-Effect_ (Brecht, 1964) and an Agential Realist opposition to neoliberal individualism shared by Karen Barad (2007).

Riding the Agential-Realist Roller Coaster: A manifesto for an A-affected VR

As well as artists and activists, mainstream media have added to a pervasive framing of VR technology as determinedly empathetic, which is itself framed as inherently virtuous and prosocial. In 2016 the Guardian was 'convinced that virtual reality was about to enter the mainstream' (Willens 2019), announcing 'that it had launched a two-person team dedicated to exploring the medium. A dedicated VR app, Guardian VR, debuted nearly a year later' (Willens 2019). All of these non-military enterprises are characterised by the over determination of VR as a vehicle for generating prosocial empathy, the ludic and entertainment value of VR is less hyperbolically stated, perhaps because the market for VR outside of the games industry is potentially much bigger (Greene 2019). Neoliberal business journals such as _The Next Web,_ are clear about their vision for a VR which combines data harvesting with a hazily agential empathetic mechanism:

> Virtual reality is a vessel for biometric feedback and psychographic analysis, a portal for emotional empathy response generation, and an entertainment platform that goes far beyond games. (Greene, 2019)

Those forms of VR which do not invoke empathy as their primary outcome emanate largely from the genres of thrill and horror, such as haunted house games, _shoot em' ups, walk the plank,_ racing games and roller coasters, and of course military killing rehearsal; there are also VR experiences which combine elements of games, so-called _Serious Games_, with claim a prosocial impact engendered by empathy.

Although the intention of works designed to invoke empathetic responses are (often) laudable, there is much to critique in the construct of empathy as it relates to VR, as

discussed by Rose (2018) and in previous papers and conferences by the author (Dare 2019a, Dare 2019b, Dare 2019c). Brecht was explicit in analysing and critiquing empathy, writing:

> It is well known that contact between audience and stage is normally made on the basis of empathy. Conventional actors devote their efforts so exclusively to bringing about this psychological operation that they may be said to see it as the principal aim of their art. Our introductory remarks will already have made it clear that the technique which produces an A-effect is the exact opposite of that aiming at empathy. (Brecht 1964)

Brecht's _Alienation Effect_ or _A-effect_ (which drew upon Chinese and Spanish theatrical traditions) occurs when audiences are jolted out of their preconceptions and orthodox views. The space which is filled by empathy and immersion in so much of contemporary VR, is, in Brechtian theatre, replaced by an analysis of society, its systems and power relationships. It is a space in which nothing will permit 'the audience any more to lose itself through simple empathy, uncritically' (Martin et al 2000:25). In an _A-effected_ virtuality the mediation will expose 'the subject matter and the happenings to a process of de-familiarization' (2000:22).

It is the central premise of this manifesto that Barad's diffracted reality, and the notion of _differential patterns of mattering,_ combined with Brecht's Alienation Effect_,_ provide THE theoretical framing for an A-effected Virtual Reality, in which an Alienation Effect is an essential mechanism for questioning power relations and their systemic manifestation, including the powers brought to bear by technology (Unwin 2014 : 48). Barad's _differential patterns of mattering_ (Barad 2007:140) or 'things-in-phenomena' similarly create conditions for objectivity. Both mechanisms dispense with familiarity to create conditions for non-positivist and non-determined knowledge. These differencing patterns are predicated on the assertion that _relata,_ meaning those entities, elements or agents present, or emergent, within dynamic relations which:

> do not preexist relations; rather, relata-within-phenomena emerge through specific intra-actions. Crucially, then, intra-actions enact _agential_

separability —the condition of *exteriority-within-phenomena*. The notion of agential separability is of fundamental importance, for in the absence of a classical ontological condition of exteriority between observer and observed, it provides an alternative ontological condition for the possibility of objectivity.(Barad 2007:140)

Barad's book *Meeting the Universe Halfway, Quantum Physics* and the *Entanglement of Matter and Meaning* (2007) follows a 'diffractive' methodology. Diffraction, unlike reflection, implies the generation of new meanings beyond mirror images or reactions. For Barad, meaning emerges though embodied, temporally and materially specific, intra-actions, relational moments of meaning in which outcomes are not pre-determined or fixed. Barad's Agential Realism provides an expanded ideas of causality and interaction, which is also relevant to VR and extended reality. Barad expands upon Haraway's (1991) notion of the material semiotic with her conception of an Agential-Realism, in which meaning is constituted from specific situations and actions or causal intra-actions. Like Brechtian A-effect, intra-actions are socio material; they are not separable from society and its discourses. Aside from their opposition to humanist individualism and their intention to create conditions for political change, Barad's interests are significantly different from Brecht's, not least of all in the framing of physical materialities as also, potentially, Agential. Barad's Agential Realism does not emanate from one location or from exclusively human sources, neither is it located in words alone. Barad's notion of 'performative' understanding (essentially a form of meaning making rooted in events, practices and real-world actions) branches away from forms of representation that place us outside of the world, it places us firmly as part of the 'world in which we have our being' (Barad 2007:133). According to Barad, intra-action, unlike interaction does not presuppose 'the prior existence of independent entities of relata' (139). Barad does not take for granted atomistic or Cartesian separations between subject and object, but, instead sees specific situations and actions as allowing phenomenological relata to emerge as specific causal intra-actions.

The notion of entanglement is central to Barad's distinction between intra and interaction, and the distinction between objects that are separable, and phenomena, which are inherently more fluid. Performative understanding is Barad's central challenge to the power we have placed in language as tantamount to reality, as the

main agent in systems of representation. Discourse, Barad writes 'is not what is said; it is that which constrains and enables what can be said' (146). Performative understanding defies the anthropocentric forces, 'the seductive nucleus' (135) which Barad describes as binding us to our anthropocentric theories. Suchman also identifies the significance of Barad's new conceptions of agency in relation to interactive system design: 'This intimate co-constitution of configured materialities with configuring agencies clearly implies a very different understanding of the human-machine interface' (Suchman 2007 :26). There are differences between machines and people but in identifying these differences one must not lose sight of their (and our) mutual constitution. A Brechtian, Agential Realist VR eschews positivist reductionism, and the _a priori_ categorisation of human subjects, as Amaro describes it, that epistemology which 'characterizes the living as an emanation of pre-existing conditions, reducing the operation of individuation, and primarily the differences amongst the living, to no more than an assemblage of contradictions that are negated and subsumed into a higher, more homogenous, unity of existence' (Amaro 2019). An A-effected VR forecloses determinism but in ways which do not idealise what Barad frames as 'particular exclusions', for example, in scientific experiments the impact of measurement, and of that which is not included:

> Crucially, matter plays an agentive role in its iterative materialization. This is an important reason, but not the only reason, that the space of agency is much larger than that postulated in many other critical social theories. Another crucial factor is that the agential realist notion of causality does not take sides in the traditional debates between determinism and free will but rather poses an altogether different way of thinking about temporality, spatiality, and possibility. Intra-actions always entail particular exclusions, and exclusions foreclose the possibility of determinism. (Barad 2007:177)

An A-effected VR also dispenses with the over-determination so familiar within VR advertising and neoliberal coverage of VR's potential to bring about universal 'well-being' through uncritical immersion. Exercises which are useful for creating an Alienating Effect and which have been used by the author (after Unwin 2014) in teaching MA and undergraduate students are listed below (there are many more), in particular, the use of Brecht's _Gestus_. _Gestus_ is 'is a theatrical technique that helps

define the emotion within a character and the context they are in. It is the combination of a gesture and a social meaning into one movement, stance or vocal display. It can be alienating and jar the audience, as it is an unusual and non-realistic way of forcing them to see the 'bigger picture' of a situation' (Kasim 2013).

- 'Sports commentator' like analysis of a refugee VR film
- Tableaux Vivant of key technological moments, such as an aristocrat looking through a telescope for the first time (see image below)
- Groups of 3-4 enact the theft of a phone, each group agrees on the facts and enacts their version of the event to people who do not know what happened, using techniques of gest, third person narration and dialogue. Groups then create placards to explain the locations, internal thoughts and attitudes of the characters
- Choose a well-known fairy tale or film plot and restage a key scene with the intention of making it strange and fresh, for example, scenes from Titanic or a news story

All of the above can be transferred to 3D VR scenes with students who have the skill, or a 360 camera can more easily be used for enacting and commentating on scene. Other Brechtian ideas which might usefully be explored in the virtual realm, include Brecht's emphasis on the age and patina of props, and the political economy of their manufacture. The Tableaux Vivant exercise with undergraduates at London College of Communication involved students staging the moment an aristocrat first looked through a telescope in the 17th century. Gestures (or Brechtian _Gest_ or _Gestus_) of subservience and power surfaced without prior briefing about the Brechtian methodology. More than one group focused on the act of servants presenting the telescope to an aristocrat.

[{figure 1 & figure 2}]

Figure 1 & Figure 2 *Tableaux Vivant* at London College of Communication, 29th January 2020, the first moment of an aristocrat looking through a telescope (Dare 2020).

Conclusion

Mark Fisher wrote of 'a detached spectatorialism 'which 'replaces engagement and involvement. This is the condition of Nietzsche's Last Man, who has seen everything, but is decadently enfeebled precisely by this excess of (self) awareness' (Fisher 6-7: 2009), a condition brings to mind the Swayze Effect of VR, 'the sensation of having no tangible relationship with your surroundings despite feeling embodied in the virtual world', a reference to the film *Ghost* (1990), in which Patrick Swayze played a dead husband helplessly watching their wife, unable to interact with them. The *Swayze Effect* (Burdette, 2015), is the sensation that we can look but cannot intervene. In an A-effected VR, 'the abyss which separates actors from audiences like the dead from the living' (Benjamin 1984:1), becomes a place of immanent realism and systemic change, a Baradian stage of co-emergent possibility, of Agential Realist subjectivity and subject formation. Idealising the Boalian 'spect-actor' must be avoided, and critiques of idealised participatory art and theatre taken on board. The imagined promise of technologies, should be treated with the healthy scepticism recommended by Suchman:

> Rather than a progressive assault on the real, the turn to
> virtualization technologies rematerializes imaginaries of lived reality,
> with real, material consequences. I take seriously the imaginaries
> informing virtual reality projects, while maintaining a critical
> skepticism regarding the extent to which the technologies actually
> realize their imagined promises. (Suchman 2016)

The notion of entanglement is central to this manifesto and to Karen Barad's (2007) distinction between intra and interaction, and the distinction between objects that are separable, and phenomena, which are inherently more fluid. VR Technology, like all our technology and language exists within such entangled relations. An A-effected Virtuality is undetermined, aligned with Barad's Agential Realism and the reconceptualisation of the Cartesian *Cut, to* provide an account of the ontological 'carving out of a role for subjectivity, and making us accountable for the "phenomena" produced' (Peacock 2010). In a similar vein, this manifesto calls for a representational shift within contemporary technological practices, in particular VR. It urges developers, directors, viewers and audiences to turn away from mirrors of realist correspondence and immersion, and instead, to engage with a virtual reality of dynamic practices and actions, this is an assault on the Cartesian split between subjects and objects, it is intended as a provocation and a spur for new forms of VR pedagogy and practice.

Word Count: 3494

References

Amaro, R. (2019) 'As If', *e-flux architecture*, Online https://www.e-flux.com/architecture/becoming-digital/248073/as-if/ accessed 10 July 2020.

Barad, K. (2007) *Meeting the Universe Half Way,* Durham:Duke University Press.

Benjamin, W. (1984) "What is Epic Theatre?", trans. Anna Bostock, in *Understanding Brecht*, London: Verso, 1984, p.1.

Boal, A. (1985) *The Theatre of the Oppressed*, New York: New York, Theatre Communication Group.

Brecht, B. (1964) *Brecht on Theatre: The Development of an Aesthetic* , John Willett (Translator). New York: Hill and Wang.

Burdette, M (2015) 'The Swayze Effect', *oculus.com*, Online https://www.oculus.com/story-studio/blog/the-swayze-effect/ accessed 11 September 2020.

Dare, E. (2019a) 'Turpin's Cave: choice and deception in a virtual realm', *International Journal of Performance Arts and Digital Media*, 15 (1). 0-11.

Dare, E. (2019b) 'Radical Immersions: Navigating between virtual/physical environments and information bubbles',*'Rendlesham 360',* at *Digital Research in the Humanities and Arts* (DRHA 2019). London, 9 September 2019.

Dare, E. (2019c) 'Empathy for the Devil: inside the headset with Norman Bates', *Virtual Realities and Alterities*. Lecture, London, 9 May 2019.

Fisher, M. (2009) *Capitalist Realism: Is There No Alternative?* Ropley, Hants: Zero Books.

Greene, T. (2019) 'The Next Web', Online https://thenextweb.com/augmented-reality/2019/02/19/the-vr-revolution-is-already-here-and-it-isnt-gaming/ accessed 10 July 2020.

Haraway D. (1991) 'Situated Knowledges', from*, Simians Cyborgs and Women: The Reinvention of Nature,* New York:Routledge.

Kasim, A. (2013) 'Brechtian techniques', *Abi's IB Theatre Journal*, Online http://abitheatre.blogspot.com/2013/02/ accessed 10 July 2020.

Martin, C, & Bial, H. (2000) *Brecht sourcebook. Worlds of performance*: London: Routledge.

Milk, C. (2015) *How Virtual Reality can create the Ultimate Empathy Machine* [video] Ted Talk, Online https://www.ted.com/talks/chris_milk_how_virtual_reality_can_create_the_ultimate_empathy_machine accessed 10 July 2020.

Peacock, V. (2010) 'Karen Barad, Meeting the Universe Halfway: Quantum Physics and the Entanglement of Matter and Meaning', *Opticon* 1826. 10.5334/opt.081013.

Radu, S. (2018) 'The Future of War May Be Virtual', *U.S News* Online
https://www.usnews.com/news/best-countries/articles/2018-03-20/the-us-military-wants-to-lead-the-innovation-game-in-vr accessed 10 July 2020.

Rose, Mandy, 2018, 'The Immersive turn: hype and hope in the emergence of virtual reality as a nonfiction platform'. From *Studies in documentary film*, 2018, Vol 12, Ni 2, 132-149.

Suchman, Lucy (2016) 'Configuring the Other: Sensing War Through Immersive Simulation', *Catalyst*, Vol 2, No 1. online
https://catalystjournal.org/index.php/catalyst/article/view/suchman accessed 10 July 2020.

Suchman, L. (2007) *Human-Machine Reconfigurations: Plans and Situated Action*s, New York: Cambridge University Press.

Unicef.org (n.d) 'Augmented Reality/Virtual Reality for Good', *Unicef.org Online*

https://www.unicef.org/innovation/XR accessed 10 July 2020.

Unwin, S. (2014) *The Complete Brecht Toolkit*, London:Nick Hern Books.

Willens, M. (2019) 'Media Hype has been replaced by AR hype among publishers', *Digiday*, online https://digiday.com/media/vr-hype-has-been-replaced-by-ar-hype-among-publishers/ accessed 10 July 2020.