How can I be dead and alive at the same time?
Science, meaning and the photographic image

'As the twenty-first century unfolds, it is becoming more and more evident that the major problems of our time – energy, the environment, climate change, food security, financial security – cannot be understood in isolation. They are systemic problems, which means that are all interconnected and interdependent. Ultimately, these problems must be seen as different facets of one single crisis, which is largely a crisis of perception. It derives from the fact most people in our modern society, and especially large institutions, subscribe to the concepts of an outdated worldview, a perception of reality inadequate for dealing with our overpopulated, globally interconnected world.'

The Systems View of Life
Fritjof Capra and Pier Luigi Luisi
2014

'Gender, race or class consciousness is an achievement forced on us by the terrible historical experience of the contradictory social realities of patriarchy, colonialism and capitalism.'

Cyborg Manifesto
Donna Haraway
1985

Index

Word count without quotes, captions, and titles approx. 2200.
Word count with the above approx. 3900

Introduction

Fred Ritchin ends *After Photography* (2009:177)) with *A Quantum Leap.* He suggests digital media can effectively communicate "oddities described by newer theories", by which he means quantum mechanics, "introducing new logic (or lack of logic) to an information-age public that may be more receptive to such reflection".

Why would the counter-intuitive oddities of quantum theory be relevant to photography? Can narratives found in the exceptionally difficult science of quantum physics help us understand the often-frightening transformations and chaos we see currently in the world? And is digital media capable of exploring these concepts better than analogue photography as Ritchin suggests, when as others insist, digitisation may be the source of our problems[1]?

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[1] See *New Dark Age* (Bridle, 2018) "Despite the apparent accessibility of information, we're living in a new Dark Age."

I am neither a cat nor dead…

"That macroscopic objects (like Schrodinger's cat) don't appear to follow quantum rules is of course widely known" (Hollins et al, 2017). However, the strange world of quantum physics underpins and informs the nuclear age in which we live (*Meeting the Universe Halfway*, Barad, 2007; *Pure War*, Virilio and Lotringer, 2008).

Although criticised as overstated by Kathryn Hayles in *How We Became Post Human (1999: 114)*, architect/philosopher Paul Virilio's (1932-2018) thesis says the desire to make war and build cities (walls) is interrelated and leads to *all* technological advancement. Physicist Karen Barad (2016) explains that the nuclear age and quantum physics are unequivocally *entangled*. Both Virilio (2008: 34) and Hayles (1999: 14, 26) argue we instantiate and embody the movements and expectations of everyday technology as we use it - even though we don't realise. Vilém Flusser (2013) argues consumerism, along with emergent material objects (devices and advertising, the market, the state - all apparatus[2]) contain and perpetuate dominant ideology which is conveyed through the system. If Virilio's argument holds sway then the structural implications of a world underpinned by quantum mechanics, and inevitably the machines of war which cannot be separated from the machines we use every day, are worth investigating.

Reality is Not What it Seems (Rovelli 2014) and *The Case Against Reality* (Hoffman 2019) are just two of many contemporary books with alarming titles, perhaps rightly termed "pop-physics" (Haraway, 2016:12) which dismantle ideas about our perception and existence. Recently, the notion of a stable reality seems to have disappeared altogether. Photography (analogue and digital), its uses, and many of its projected futures play a significant role but it is a mistake to look at these in isolation; photography must be considered within the wider landscape as an interrelated entity, i.e. entangled. For Flusser (2013:loc 282), our cameras and related products are portals to the entangled reality in which they exist, and conveyers of the apparatus' information; photographers are not workers but functionaries who do the conveying.

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[2] "Apparatus (pl.es): a plaything or game that stimulates thought [trans. An overarching term for non-human agency, e.g. the camera, the computer and the 'apparatus" of the state or the market]; organisation or system that enables something to function (Flusser, 2013: loc 950)

4

Karen Barad's, *Meeting the Universe Halfway: quantum physics and the entanglement of matter and meaning* (2007), has been critiqued in a paper called *(Dis)entangling Barad: Materialisms and ethics* (Hollins et al, 2017:1) and the trend to cite her ridiculed. However, the authors do admit they may be suffering from envy and state:

> "the influence of Barad's work continues to grow, with [...] significant year-on-year increases in citation counts. And this brings us to an important point: While Barad's project spans twenty years, it is evidently of this moment" (Ibid:3) .

Although Hollins and co. (Ibid:7, 8) suggest Barad's work is problematised, applying notions from the quantum world to the macro, Barad repeatedly warns against making reductive analogies or simply scaling up. However, Barad (2007: 70) states the interest is "widely applicable to philosophical issues" such as - and amongst others - "the role of natural as well as cultural factors in technoscientific and other social practices, [and] the nature of bodies and identities". Barad (Ibid) also tells us that Niels Bohr was adamant quantum philosophy could have a profound effect on the world in general. Barad has established agential realism which contains ideas expressed in quantum theory that may be applied more widely. Such ideas, according to Barad, give matter and language equal bearing concerning the formation of meaning, value non-human entities and the way they contribute as significant, prompt us to consider what and who is excluded from received narratives and why, and reject the notion of zero value based on quantum field theory where probabilities are never null. Bearing hers and Hollins' warnings in mind, I will refer to quantum-philosophies rather than mechanics, hopefully reducing the risk of merely scaling up quantum behaviours, which don't apply in the reality we humans perceive [3] but do nevertheless have the possibility of shifting fixed ideas embedded in our language. I am mindful that this could be a difficult task.

James Elkins, art historian and author of *What Photography Is* (2011), also touches on nuclear fission, but this is just one example of monsters devouring other monsters. For him, our ontology and photography could be described as deeply

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[3] There are some contemporary ideas about perception: ours is myopic and particular to us, perhaps even illusionary. Rather, we have evolved to see the world in a specific way for the best chances of survival. See Donald Hoffman, author of *The Case Against Reality* (2020): how evolution hid the truth from our eyes, at:
https://aeon.co/videos/its-impossible-to-see-the-world-as-it-is-argues-a-cognitive-neuroscientist

entangled. His story includes images of threatening-looking microbes such as 'Sun Animals' (Elkins:loc 1828) and 'Water Bears' (ibid:loc 1787) which remind him "that is not what I wish to be" (ibid), and then there is a long and terrible chapter about "death of a thousand cuts", known as lingqui, and how the practice was photographed and the resulting images are now collected. It would be strange if Elkins (2011) did not travel through time as he explores *What Photography Is*, and as I look at photography today, digital, analogue or animated, it is, as ever, challenging to know what should be left out or included.

"Instead of mouths they have sharp 'stylets' that slide through tubes in their heads and pierce plant cells, like a mosquito's proboscis."
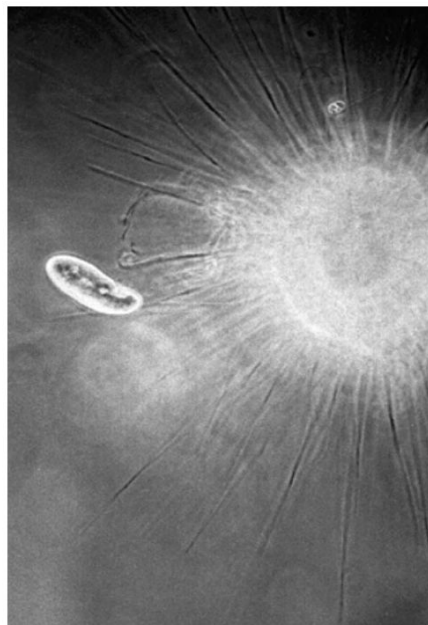
WATER BEARS.

Fig 2.   Water Bears and   Elkins, J. (2011) *What photography is*.
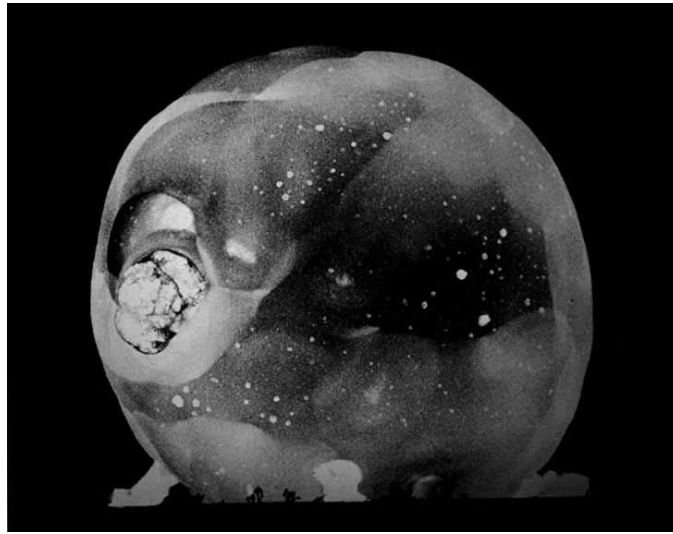   Sun Animals   [Screenshot]

Fig. 2. Atomic Test Explosion 1952 Edgerton, Harold (1952) [Photograph]

Flexible un/learning and photography's entangled role

In deference to the idea of entanglement, it will be useful to look at the way we have framed history, and how the present and imagined futures continue to affect the past. Elkins quotes Walter Benjamin, Charles Baudelaire, and Pierre Bourdieu as he describes how the invention of photography intruded on perception and became appropriated by the bourgeoisie, who relied on it to convince themselves of and reinforce their *limited (self-serving?) view* of reality. Again, in deference to Barad's quantum philosophy, we should remind ourselves about who was excluded from view or simply unseen and explore photography's role in that. According to Elkins (2011:loc 1326 citing Benjamin, 1969:238) Benjamin admits, because of film and photography he was "unaware of the masses of things, the on and one of things" he was permitting himself "not to see".

Benjamin is also quoted as saying film, "creates a percussive shock to the consciousness by continuously changing scenes, I can no longer think what I want to think." Or "My thoughts have been replaced by moving images" (Elkins:loc 1311 citing Benjamin:Ibid).

As explored and quoted in my project, *Polar Interia* (2018), Paul Virilio (2008, 49) echoes this when he states,

> "Cinema shows us what our consciousness is. Our consciousness is an effect of montage. There is no continuous consciousness, there are only compositions of consciousness".

However, in *Data Selves* (2019:29 citing Kember and Zylinska, 2012;84) Lupton discusses how photography allows us to take control of a moment, 'cutting' through the amorphous chaos of existence. Quoting Kember and Zylinksa's she describes photography (still or moving) as "an attempt to impose meaning and order". The authors (Ibid) "represent photography as a specific cut in meaning" referencing Barad's agential realism, a way of "delimiting from all the choices available, what can be recorded and displayed, and therefore how meaning can be generated". She goes on to suggest, "Photography makes agential cuts that produce life forms rather than simply documenting them." It is a way of giving form to matter. She relates this view of photography to data - and the notion of it being a vibrant, lively, dynamic material. Analogue photographic processes are therefore categorically and necessarily limited - until that is, it becomes digitised.

Elkins (2011: loc 1561) is less generous about photography's limitations and our relationship to it when he quotes Baudelaire, who although "sour and splenetic" was nevertheless correct when he said, "photography made the "whole squalid society ...rush to gaze at its trivial image". What would Baudelaire make of today's selfie-culture? Had he been alive today, intolerance for a constant state of collective inward-facing prurience might have driven him to apoplexy.

Elkins refers to Pierre Bourdieu (ibid: loc 762 and 70 citing Bourdieu,1965: 48) who linked photography inexorably to the middle-classes, which emerged as capitalism did. He writes, "It is easy to agree that photography's apparent realism has been formed by the middle-class hope that the photographs give us reality itself (as Bourdieu says)." And "photography is most frequently nothing but the reproduction of the image that a group produces of its own integration". If you are born into that class and spend your time contemplating photography, Elkins (loc 716) suggests you inevitably conspire and he does not refrain from highlighting his own complicity : "For Bourdieu, photography is bourgeois to its bones, and it even includes its own futile anti-bourgeois gestures, like my own attraction to things that aren't family photographs." Susan Sontag's comment (2008: 69), "Photography has become the quintessential art of affluent, wasteful, restless societies" doesn't do much to counter that view.

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If Elkins sees photography as an expression, Alan Sekula in *The Body and the Archive* (1986:5) understands its entanglement and constructive role as *otherer* of the so-called '''dangerous classes'', i.e. the "chronically unemployed sub-proletariat". He tells us how both Daguerre and Talbot understood technology to be a "silence that silences" (ibid: 6) and aims to describe how photography (and in particular portraits) cannot shake itself free from the mentality of "possessive individualism" i.e. "a systematic defence of social relations based on private property" (ibid: 7).

Possessive individualism, it might be argued, is an inevitable outcome in a Cartesian, mechanistic world, one in which discrete objects that can be categorised exist in a void universe as opposed to an understanding of existence being relational, intra-related – and the void never being truly empty, always brimming with virtual entanglements. Sekula's essay discusses how representations of the *dangerous classes* fed into a perception of reality. Society in time came to believe in photographic legitimacy and those beliefs were reinforced by a cultural feedback loop. By the end of the Second World War, the "belief in linear progress, absolute truths, and rational planning or ideal social orders under standardised productions was particularly strong" (Harvey, 1990: 35) Barad (2007:49) tells us faith in representation, and the absolute separation of ideas and objects is "simply a Cartesian habit of mind" .

Michael Fried's book *Why Photography Matters as Art as Never Before* (2008) was recommended as an alternative view to Elkins' statement about photography being boring. Much has been said about the book and his essay *Art & Objecthood* (1967). Theorists and practitioners Phoebe von Held (2017) and Daniel Rubinstein (2017:52) dismantle Fried's use of binary terms, theatricality and anti-theatricality; however, it's Fried's dogged commitment to *representationalism* and hierarchical thinking that is of concern here.

> "the salient point about Fried's thought is that, by arguing against the dualism of theatricality and for the monism of 'real' art, he is unable to move beyond the very dualism he is trying to unsettle as his thought is chained to the common-sense notion that representation is a natural, ordinary, everyday occurrence."

Barad (2007: 49) tells us repeatedly that we need to "question representationalism's claim that there are representations, on the one hand, and ontologically separate entities awaiting representation on the other." Instead there are phenomena where process and representation are entangled interactions that do not exist without one another's input and which emerge from within each other. Rubinstein (2017: 54) ends his essay with,

> "Putting the object first will not work because the opposition between art and non-art is itself the product of an ideology that asserts that there is a real world that can be taken up and represented as an image ".

Examples in popular culture and art

The following examples might be seen as the ghosts of photography's future and its past. The characters of William and Katya (a memory and a photographic image on a wall) are what I am looking at as potential texts for the sake of the literature review, rather than the films themselves.

William in Another Life (2019)

William, played by Samual Anderson in *Another Life* (Netflix, 2019), might be seen as photography's future, as an example of a visual phenomenological assemblage. He is an exceptionally advanced *Siri* or *Alexa*, but virtually indistinguishable from the non-AI characters[4], other than he is a component of the spaceship who emerges when required - a ship, incidentally, which also functions as a nuclear warhead. He is a memory aide – and can transform into a living memory as his 'master's' husband. He alters according to performative actions within the group. He looks and acts like matter – an object that lives - and others respond to him as if that is the case.

Another Life contains a standard narrative. The series reinforces American dominance and Western values (with all its unresolved issues) as normative, always expressing a "manic compulsion to name the Enemy" (Haraway, 2016: 9). We might think about Flusser's use of the word apparatus in connection with William and the ship. The significance of William's black skin[5] cannot be overlooked. There are deeply embedded, entangled, implications relating to the unconscious decisions of the producers of the TV show, and our on-going relationship with skin-colour, power and otherness. It's not that the producers could have chosen a white actor, which might have resulted in different connotations to do with the growing acceptance of posthumanism – the issue is they didn't, and so multiple layers of contextual meaning exist.

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[4] Unlike another popular AI character, Janet in *The Good Place* (2016-19) who is split between good and bad, evoking connections to the psychological term *split* - unconsciously seeing people as either all good or all bad, an extreme way of coping with confusion, anxiety, and mixed feelings. Splitting is especially prevalent under stress (Eddy and Kreger, 2011:16)

[5] 'William will *always* be manipulated, he will *always* be in service of Niko. She is the vessel's captain and William is the vessel' (Laguda, 2019)

If representation has for so long given us the impression that "there are ontologically separate entities" (Barad, 2007: 49) waiting to be represented, William can be seen as evidence of the long-term move away from that perception, as well as an example of why that assumption is out-dated. He is a narrowing-of-the-gap between representation and something to be represented – and tied up within are all the troubling expressions of otherness and 'assimilation' of other.

Donna Haraway (2016: 7), who urges us to take "pleasure in the confusion of boundaries and for responsibility in their construction", says:

> "our time, [is] a mythic time, we are all chimaeras, theorized and fabricated hybrids of machine and organism—in short, cyborgs. The cyborg is our ontology; it gives us our politics. The cyborg is a condensed image of both imagination and material reality, the two joined centres structuring any possibility of historical transformation".

Fig. 4. William and his 'master' Niko in *Another Life* (2019) [Photograph]

Debora Lupton (19: 2019), author of *Data Selves* (we can imagine data would make up a good percentage, if not all of William's being) writes,

> 'While digital data assemblages are often conceptualised as immaterial, invisible and intangible, I contend that they are things that are generated in and through material devices (smartphones, computers, sensors [or space-ships]), stored in material archives (data repositories), materialised in a range of formats that invite human sensory responses and have material effects on human bodies (documenting and having recursive effects on human flesh)."

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William could be the long-term view of Lupton's premise - her work follows on from Kathryn Hayles' *How We Became Posthuman: Virtual Bodies in Cybernetics, Literature, and Informatics* (1999). But in the context of now, he reinforces old boundary lines (based on race) when his existence could have done the opposite. William's character is interesting, because while there are many popular narratives which describe AI as potentially dangerous, he isn't a caricature but relatively rounded and fallible in a show filled with less rounded characters, and could function as an example of our evolving attitude towards posthumanism. That might suggest we are coming to terms with a new cyborg reality for everyone. But his presence in today's world is also an example of how Western patriarchy, colonisation and racism have colonised and triumphed over notions of the other – he is an entangled process-driven assemblage.

Katya in *45 Years* (2015)

Another Life is one of many, many examples of contemporary texts exploring nebulous boundaries. While *Another Life* is teeming with terms and references to quantum science such as dark matter, particle accelerators and multiple worlds, Andrew Haigh's *45 Years* (Artificial Eye) is an example of realism rather than science fiction. But it is also concerned with boundaries, referencing photography's ability to breach them in everyday (albeit 'bourgeois') settings. Please note: bracketed, greyed-out words suggest where one might apply quantum-philosophical ideas.

Fig. 5 Kate and Katya in *45 Years* (2015) [Photograph]

Katya is Geoff's ex, long-dead girlfriend, and someone who he was likely to have married had she not died. Mark Kermode (2015) describes *45 Years* as "A subtle examination of the persistence of the past and the fragile instability of the present". The film's action takes place over just a few days, however, its narrative spans 50 years. (*Disrupting our perception of linear time – human construction of it.*) Kermode tells us:

> "an ageing married man [Geoff] receives a letter telling him that the body of his previous girlfriend has been found, perfectly preserved in the ice of the Alps where she fell 50 years ago. This news gets a chilly reception from his wife [Kate], who is alarmed by the frozen spectre of a former love."

As the film unfolds, it becomes clear that Geoff used to take photographs although they own few. Kate says, "It's a shame not to have more photographs 'round the house. I guess we didn't see the point of taking pictures of ourselves". Geoff does have a camera but it's as impotent as him, which we discover in a touching and realistic sex scene. He stores the camera and boxes of old images of his recently discovered late girlfriend in the loft.

Towards the end of the film Kate ventures up rickety steps into the roof, which is an obvious bit of Jungian synchronicity, representing Geoff's physical head and emotional thoughts. There, she peers into and sifts through Geoff's past. Director Haigh opted for slides rather than prints so Kate effectively creates her own inverted Plato's Cave when she looks at the pictures of Geoff's memory. This makes the images of Katya (note the name similarity - the same but different) and her view of them phenomenological – an emergent interaction reliant on human and non-human entities. Nevertheless, Katya is a very real artefact, just like a print – although we have already heard there are not many of those around the house – and one that has a big and tangible impact on the relationship between Kate and Geoff. (*Both Kate and the girlfriend, as well as the actors playing are correlated i.e. in more than one place at once – the dead girlfriend exists in the present on the wall of Kate's attic as well as in the past, and Kate travels to the past as she looks at the slides while existing in the present - multiple states*). Deborah Lupton writes in *Data Selves,* death is a continuum (2019: 39) when considered through a lens that values human and non-human entanglement; in *45 Years*, photography and its associated devices are a clear example of this view.

Although the film never once mentions quantum physics there is a fluidity concerning boundaries that feels non-Cartesian. Moral absolutes are as unfixed as time and space. Complexity and entanglement, as well as non-linear time, are embraced. Human and non-human, object and phenomenological processes all contribute.

Conclusion

Fred Ritchin (2009: 181) writes:

> "within a Newtonian world view, the famed photographer Cartier-Bresson photograph of a man jumping a puddle leaves the reader confident he will land on the other side: in a subatomic quantum universe it remains a matter of probabilities".

Although the cultural texts referenced in this essay both come from moving image examples, rather than still photography, William and Katya are each visual and photographic in their own right. They are characters that represent photography's imagined future and well-known past. *45 Years* was, however, shot on film and included analogue photographs as part of an assemblage amounting to one of the central characters. For the first half of the film, Katya exists only in the other characters' imaginations until photons are pointed through a slide projector and some slides at the wall – when she becomes present and absent at the same time, and as large as life. William is a visual and aural phenomenological entity that moves, responds, feels and loves – an animated digital, moving, imaginary but real object that can appear and disappear. In the essay that follows, I will examine the boundaries we place between still, moving, analogue and digital photography and ask if they are merely arbitrary Cartesian "habits of mind" (Barad, 2007: 49), or if the boundaries between each continue to be valid. Will still photography persist or eventually serve little purpose other than as archaic curiosity in a future world?

Ritchin (Ibid: 182) ends his book by telling us that:

> "the older mechanical photography will, to a certain extent, falter. It will be valued as historical documentation and for its singularity as an object that will more and more resemble that of painting. But its singularity may also be seen as a drawback: and the digital may appear, almost paradoxically as more holistic".

Karen Barad's endeavour to explore the philosophy of quantum sciences through other disciplines is motivated by wanting us to see it is possible to live differently, in a world which we are all a part of, not separated from, and to help us to see there is no void, no emptiness – the universe is teeming with indeterministic possibility. The flexibility and possibility for inter-relatedness using digital media, which emerges from code may serve us well in this regard.

Images

1	45 Years (Artificial Eye) 2015	Kate (Charlotte Rampling) At: http://www.dvdcompare.net/review.php?rid=4311 Accessed 25/11/2019	Cover and 12
2	Water Bears and Sun Animals	Screenshots taken from Elkins, J. (2011) *What photography is*. [Kindle] New York: Routledge.	6
3	Atomic Test Explosion 1952	Edgerton, Harold (1952) [Photograph] At: https://sites.middlebury.edu/landandlens/2016/10/16/harold-edgerton-atomic-bomb-explosion-1952/ (Accessed 19/10/2019	7
4	Another Life (Netflix) 2019	William (Samuel Anderson) and Niko (Katee Sackhoff) publicity image. Black Youth Project [online] At: http://blackyouthproject.com/the-white-writers-misimagination-of-black-characters-in-science-fiction/ Accessed: 25/11/2019	12
5	45 Years (Artificial Eye) 2015	Kate (Charlotte Rampling) At: http://www.dvdcompare.net/review.php?rid=4311 Accessed 25/11/2019	13

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