Cahiers Louis-Lumière N°10 on Archeology of the Audiovisual.

Paper Title: 'Digitising Consciousness: The Digital U.'

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"No man is an Iland, intire of itselfe; every man
is a peece of the Continent, a part of the maine;"

'No Man is an Island.' John Donne. 1624.

This essay considers the flexible, malleable consciousness that makes us who we are. It explores the possibility of digitising this sense of 'self' so that we can exist in a non-biological platform, as a technological entity.

Digital Consciousness in History

There is a long history of humans attempting to 'create' conscious entities using mechanical and/or electronic parts. In 1928, Captain William H Richards and Alan Reffell created 'Eric', a humanoid robot which could move and speak (BBC News, 2016). Eric was displayed at the London Engineering Exhibition and delivered the opening address saying, '*Unaccustomed as I am to public speaking, it gives me great pleasure…*' The robot terrified the audience yet captured their imagination, he represented '*some strange symbol of relentless Fate itself.*'

In his 1909 story 'The Machine Stops,' EM Forster predicted an internet-like technology through which future humans would communicate. Forster's Machine permeates every aspect of the protagonist Vashti's existence. Her son Kuno lives on the other side of the world. She speaks to him only through the machine, '*.. through it we speak to one another, through it we see one another, in it we have our being.*' (Forster, 1909, pg. 15). However, Vashti and Kuno are dissatisfied with their virtual identities, the representation of their 'self',

> '*.. The Machine did not transmit nuances of expression. It only gave a general idea of people - an idea that was good enough for all practical purposes, Vashti thought. The imponderable bloom, declared by a discredited philosophy to be the actual essence of intercourse, was rightly ignored by the Machine, [ ] Something "good enough" had long since been accepted by our race.*'
> (Forster, 1909, pg. 3).

What is Consciousness?

Colin Wilson described man as '*one person one day, another person the next. He forgets easily, lives in the moment, seldom exerts will-power*' (Hunt, 1963, pg. 47). Our consciousness is plastic, always changing, so a digitised consciousness must have a similar level of flexibility, continually fluctuating, influenced by context, input and observation. Wilson considers DH Lawrence's contemplation on the endurance of man, the body subjugated to the human will. Yet ultimately, our physical limitations

restrain the ambition of the spirit. In this description, the conscious self is boundless, aspiring, enterprising. In this sense it is capable of more than the physical self can endure. Summarising Hulme he states, *'You could describe the facts of evolution, then, by saying that it seems as if an immense current or consciousness had traversed matter, endeavouring to organise this matter so that it could introduce freedom into it. But in doing this, consciousness has itself been ensnared in certain directions. Matter has captured the consciousness which was organizing it, and entrapped it into its own automatism'* (Wilson, 1963, pg. 304). George Gurdjieff also notes the limitations of the mind due to physical constraints, where man is *'so completely embalmed and enmeshed in delusions that he cannot even be considered as a living being; he can only be regarded as a machine. He has, in other words, absolutely no free-will'* (Wilson, 1963, pg. 289).

Alan Turing noted the paradox of trying to define the location of consciousness (Turing, 1950, pg. 447). He described an 'abstract machine' that could be programmed to complete multiple tasks, only limited by the code entered into it. As a technological construct, this type of machine was believed to be infallible. Yet Turing questioned the conviction that an abstract machine could not make a mistake. We communicate through 'language' which can easily be misinterpreted. Therefore the machine, also communicating through language (code), will at some stage misinterpret its instructions.
As a software engineer, the longest piece of computer code I ever wrote that did not produce some random, unpredictable outcome, was about 6 lines long. While writing software, the code quickly takes on a life of its own. It must be tested relentlessly to identify and correct unintended errors, *'Most of the programmes which we can put into the machine will result in its doing something that we cannot make sense of at all, or which we regard as completely random behaviour.'* (Turing, 1950, pg. 459).

But what kind of technological platform can contain the specificity of human consciousness? Can consciousness be digitised? Igor Alexsander considers state machine theory to be most suited to the development of a definition of consciousness, *'The brain of a conscious organism is a state machine whose state variables are the outputs of neurons'* (Aleksander, 1994, pg. 75). The French philosopher Guattari states that the unconscious *'arises from a machinic creationism. This is why it is radically atheistic'* (Guattari, 2011, pg. 155). He considers the possibility of a human 'self' emerging from a series of complex processes where a *'machinic consciousness could manifest itself as a component in assemblages of enunciation "mixing" social, technical, and data processing machines with human subjectivity, but can also manifest itself in purely machinic assemblages, for example, in completely automated and computerized systems'* (Guattari, 2011, pg. 221). He describes a 'molecular phylum' that 'traverses' all of existence, a consciousness that we are only a part of, all biological and machinic

life working to achieve its objective. In this theory, our individual consciousness is simply a component of a super-consciousness, that is blurred or smeared across multiple platforms of existence.

Terence Deacon defines humans as *'a chemical computer running evolutionary programs'* (Deacon, 2012, pg. 34). He considers the possibility of multiple consciousnesses existing on various platforms, '*To the extent that the same software produces the same effects on different computer hardware, we can say that the result is functionally equivalent, despite the entirely separate physical embodiment*' (Deacon, 2012, pg. 30). He cites '*.. Francis Crick's The Astonishing Hypothesis [] "You, your joys and your sorrows, your memories and your ambitions, your sense of personal identity and free will, are in fact no more than the behavior of a vast assembly of nerve cells and their associated molecules…"*' (Deacon, 2012, pg. 31). He predicts the difficulty of digitising a consciousness that is in fact a pattern that exists over time, across multiple regions of the brain, which cannot be viewed in a single instant. Deacon proposes that we exist as ententional processes of teleodynamic activity, our consciousness manifested as a sequence of activities, attempting to reach a state of equilibrium and in the process producing life as we know it, *'life is fundamentally just a complex kind of copying process'* (Deacon, 2012, pg. 437). The difference in speed of neuronal and metabolic activities, highlights the complexity of what Deacon identifies as the *'hierarchic dependency of higher-order forms of sentience on lower-order forms of sentience'* (Deacon, 2012, pg. 508). Our conscious thoughts do not include an awareness of the life-support functionality which the human body must perform to keep us alive. In our daily life, we take on complex activities. These activities that initially need much thought and consideration to successfully complete them, gradually become second nature to us, require little concentration and less and less awareness of their existence, *'Consciousness is in this respect in the business of eliminating itself by producing the equivalent of virtual neural computers'* (Deacon, 2012, pg. 537). With regard to skills acquisition, the same core competencies are used by both beginners and practiced individuals. However, *'a true master will push the envelope, will write poetry in the domain, will leave his or her "signature" in the habit-combinations used'* (Arthur, 2011, pg. 79).

Nicholas Carr states that *'long-term memory is actually the seat of understanding. It stores not just facts but complex concepts, or "schemas"'* (Carr, 2011, pg 124). Repetition consolidates memories, neurotransmitters become more concentrated, strengthening neuronal connections and building new synaptic terminals. The brain grows to accommodate the formation of, and to physically retain new memories (Carr, 2011, pg. 184). Recalling a memory restarts the process of memory consolidation and long term memory storage. This system of unpacking and repacking physical memories alters them over time, each iteration of the same memory is different. Our consciousness, which relies on

memories to reflect on our sense of 'self', is therefore plastic and in a permanent state of flux, whereas a digital or digitised consciousness exists as data, which is unaltered by recall, *'biological memory is in a perpetual state of renewal. The memory stored in a computer, by contrast, takes the form of distinct and static bits; … they will always remain precisely as they were'* (Carr, 2011, pg. 191). This raises questions as to which version of our selves will be recorded during the digitisation process. The artist Erwin Wurm believes that *'We are mostly two people. The 'one' who is really us and the 'other one' who we pretend to be or what we want that other people think we are. Everybody has two sides, some have even more…'* (Kombercova, 2016).

Smeared consciousness

Teilhard de Chardin states that consciousness is a universal soul, *'the living world is constituted by consciousness clothed in flesh and bone. From the biosphere to the species is nothing but an immense ramification of psychism seeking for itself through different forms'* (Teilhard de Chardin, 1967, pg. 167). He describes the disposal of the indetermination and choice of an insect as *'transformed into organic reflexes.. its consciousness is extraverted.. individual particularities disappear, absorbed by function'* (Teilhard de Chardin, 1967, pg. 171), the consciousness of the organism is rooted in its local environment.

The political activist and journalist Bibi van der Zee came across Clarke and Chalmers work 'The Extended Mind' some years after the death of her sister Ninka, *'The only way I could make sense of the way that I had felt after she died was if I had literally lost a part of my own consciousness. Why not? Why couldn't another person become, somehow, part of your mind?'* (van der Zee, 2015), *'It's been twenty years now, and if part of Ninka's consciousness is still in my mind, it is so deeply embedded that it is really me.'* Van der Zee considers that she has a 'version' of her sister's consciousness in her own mind. She can communicate with her, talk to her, consider her responses to various questions. The photographer Nan Goldin experienced a similar loss, however she accepts that she now only has an interpretation of her sibling, *'I don't really remember my sister… I remember my version of her, of the things she said, of the things she meant to me. But I don't remember the tangible sense of who she was, her presence…'* (Goldin, 1986, pg. 4). Clarke and Chalmers discussed cognitive extensions that appear to externalise our consciousness. These extensions include language, *'the biological brain has in fact evolved and matured in ways which factor in the reliable presence of a manipulable external environment'* (Clarke & Chalmers, 1998, pg. 8). In this regard *'extended cognition is a core cognitive process, not an add-on extra.'* Language is explored and exploited to influence and control the external environment. It is used in contexts, to communicate the

internal minds' ambitions and desires. This suggests that our cognitive state is spread across external resources including our peers, the Internet, books etc.

Transhumanism

Today, a transhumanist movement called 'grinders' are modifying themselves to become cyborgs, augmenting the human condition, where '*Computers are hardware. Apps are software. Humans are wetware'* (Popper, 2016). Their activities in biohacking include implanting sensors under their skin to allow them to physically sense colour, objects and magnetic fields; offering the wearer a form of '*ambient awareness'.* Grinders are externalising part of their physical self into the world around them, interacting with their surroundings through technological interfaces that will be upgraded and replaced over time. They are attempting to circumvent the inevitable obsolescence of their physical presence.

These technological enhancements are one strand of the digitisation of our selves. Creative enhancements and augmented cognition will eventually give way to a digital consciousness, '*At the core of artistic motivation, however, we also find the fantasy of overcoming the limitations of our own bodies. This manifests itself, in part, in a desire to achieve immortality through machines'* (Grau, 2000, pg. 229). This immortality necessitates the codification of consciousness and the development of a suitable substrate or platform to store it on. As with Forster's 'the Machine' and Norbert Wiener's theories on cybernetics, the digitally represented self is not limited spatially, it can transcend the corporeal world and move freely as data, '*Wiener envisioned the possibility in principle of translating the very essence of man into code and transmitting it over telephone lines'* (Grau, 2000, pg. 235). The experience of a virtual existence will bring with it new modes of participation and sensing reality. Currently, '*the body is restrained in its function of getting sensual knowledge of the world, generally by tactile experiences through the skin. The experience conveyed by machines replaces the real body, and with it embodied experience'* (Grau, 2000, pg. 242). The possibility of the self, existing concurrently as both biological and digital entities raises the question of originality and individuality, '*So will the digitised entity / mind be true - how will we ever know if we are communicating with the original consciousness, instead of a deception?'* (Goldman, 2000, pg. 141). In response to this question the Futurist Ray Kurzweil has stated that '*Nonbiological intelligence should still be considered human, since it is fully derived from human-machine civilization'* (Kurzweil, 2006, pg. 317).

Therefore a digitised consciousness will be a functioning approximation, a superficial simulacrum. It will be incorrect in the same way that our day to day consciousness already ebbs and flows. To the outside observer it will be 'us', a digital self, masquerading as you. In the meantime, our biological

consciousness has already moved on, altered its pattern and changed into something else. Google has been recording our conversations for several years, ostensibly to improve its search results through the construction of a sophisticated level of contextual knowledge (Griffin, 2016).

While consciousness is based on memories, which are altered every time we access them, Google's 'memory' of your online activities, are absolute and do not change when viewed or accessed. In this way, Google will retain a fixed, pedantic version of your consciousness while your biological self grows and matures.

Several companies are already offering the public an opportunity to digitise themselves. The transhumanist community Terasem creates '*mindfiles, or digital compilations of people*' (Zoltan, 2016). These compilations are made up of social media posts, photos, media files, digital activities of any kind. They will be stored on hard drives (and transmitted as data into the cosmos) until a time when they can be 'unpacked' into a digital representation of the original person. These data sets, ostensibly fixed facts of knowledge and personality elements, will use interpolation to pattern them together into a digital self. This self will exist as another version of the original you, it will appear to be you, but it will learn, grow through experiences and move on, to become a version of yourself that you never knew, and never would have become. The digital you is another, different you.

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