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Forget the Singularity, its mundane artificial intelligence that should be our immediate concern

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Abstract: Fuelled by Science Fiction and the pronouncements of Silicon Valley gurus such as Elon Musk, the 'Singularity' is arguably the biggest geek myth of our time (Modis, 2006) and is distracting us from addressing the numerous problems emerging with the increasing use of Artificial intelligence (AI). Artificial General Intelligence (AGI) is often perceived to mean super human like intelligence such as the ones depicted in movies like *Her* (2013) and *Ex Machina* (2014). These anthropomorphic representations of AI besiege our attention away from the very real threat of biases introduced through Machine Learning (ML). In this paper we will consider whether current practices within Human-Centred Design (HCD) permit designers to consider interactions and services in which non-human algorithms play a significant role and consider how approaches inspired by Object Oriented Ontology (OOO) may offer new perspectives for framing design activities concerning AI.

Keywords: Object Oriented Ontology, Machine Learning, Artificial Intelligence, Biased Algorithms

1. Introduction

Richard Buchannan argued that ''all design is rhetoric" (1995) and in the same vein it can be argued that it is therefore inevitable that human prejudices and alternative worldviews are encoded into computer algorithms. These automated representations aim to produce generalizable solutions by simplifying the worlds complexities often without understanding the potential problems this might also create, which has led some to describe them as 'Weapons of Math Destruction' (O'Neil, 2016).

Whilst some implementations of AI are praiseworthy and myriad future proposals promise potentially beneficial applications to society, the opaque relationships between algorithm design, business models, data production, data harvesting and processing practices are already producing significant societal issues and complex ethical dilemmas.

While AI is attracting significant funding (e.g. UK setting a budget of £0.95 billion (DBEIS, 2018)) it is often implemented without the adequate understanding of how AI works leading some researchers to critically claim that "ML has become alchemy," arguing that even though alchemy 'worked' it was

based on unverifiable theories (Elish & Boyd, 2018). This belief in the economic potential of AI is coupled with a popular misconception that Artificial General Intelligence (AGI) is near at hand, rather than discussions around the increasing use of ML in social media, entertainment, surveillance etc to encourage us towards certain courses of action. Such widespread misunderstanding is fed by potent narratives in popular media often portraying dystopian futures involving killer anthropomorphised AI. This is not a new phenomena, and often advances in AI both feed and are fed by fictional narratives. In the subsequent section we illustrate that the real and the fictional have intertwined through the history of AI.

2. Artificial Intelligence and the Mythos of AI in popular Culture

Tales of intelligent robots and artificial beings are not new and are evident in Greek myths, such as Talos the giant automaton that protected island shores. Karel Capek invented the word robot in 1920 for his play *Rossum's Universal Robots*, where robots serve human beings and are deemed more consistent than humans by the inventor, eventually the robots rise up threating the human race to extinction. Fritz Lang's *Metropolis,* a seminal master piece brought anthropomorphised and artificial intelligent beings to the silver screen in 1927.

After World War II (1939-1945) Vannevar Bush called for a 'new relationship between the thinking man and the sum of our knowledge,' and for the development of technology that would promote 'the application of science to the needs and desires of man'(Bush,1945). Bush's idea was a speculative vision in a time of information overload stunting the growth of new knowledge. The solution was a machine called a Memex, a piece of technology that would tag information with 'trail codes' and retrieve information like the brain would, through association or 'information curating'(ibid). Regardless of the detailed description, Life magazine (1945) published the essay under the title 'Machines will start to think," characterising a long tradition of hyperbole in the media which often buries the true capabilities of technology.

In 1950 Alan Turing wrote his influential paper Computing Machinery and Intelligence. The paper attempted to avoid the philosophical questioning of machine intelligence and devised a test to conclude that machines are intelligent if successfully simulating a human being (Turing, 1950).

Forbidden Planet was released in 1956, a historical and culturally significant film due to the visual effects, the plot regarding the materialisation of monsters from a human's psyche, and the first robot that resembled a more humanoid form rather than a tin can, which displayed a distinct personality, defining the film as investigating the complexities of the psyche in varying entities.

It wasn't until 1955 that the cognitive scientist John McCarthy coined the term 'Artificial Intelligence' proposing that "every aspect of learning or any other feature of intelligence can in principle be so precisely described that a machine can be made to simulate it" (McCarthy,1955).

In 1964 Weizenbaum published an early natural language processing computer program, or what would now be referred to as a chat-bot, called Eliza. Eliza would interact and respond to the user by imitating a therapist and conduct 'therapy sessions' for the user. Eliza's program essentially worked out the user's constituent parts of speech from their inputs and fed them back to the user by rephrasing the input, in a manner sustaining the conversation.

In 1968 the visionary film *2001: A Space Odyssey* (2001) was released. Kubrick's work is renowned for examining and speculating on humanity's complicated relationship with technology. 2001 presents a near and future world, speculating on humanity's technological ascension, permitting the

exploration of the far corners of space, the creation of an anthropomorphic AI, and the ultimate transcendence of humanity; from the tool wielding Dawn of Man to the ultimate birth of Star Child, driven by the invention of AI. Captivating the audience's imagination of tomorrow's world.

At the beginning of the 60's Marvin Minsky speculated that in his lifetime he would witness machines surpassing humans in general intelligence. But by the end of the 1960's it was becoming obvious that this speculation would not transpire. To this effect Minsky co-authored *Perceptrons* (1968) with Papert, which pointed to key problems with the promise of neural networks. *Perceptrons* has been identified for redirecting funding away from AI research bringing forth the dawn of its first winter.

Hubert Dreyfus devoted his career to finding out whether or not there existed a difference between man and machine. He was valiant to call out current trends and myths within AI research, particularly through his book; *What Computers Can't Do* (1972), which was criticised until it became evident that the speculative promise was not going to be realised. The last straw for UK AI research came a year later when Sir James Lighthill wrote a report for the British Government, regarding the state of AI research, the report concluded 'in no part of the field have the discoveries made so far produced the major impact that was then promised' (Lighthill, 1973), resulting in freezing the UK's funding for AI research.

Despite the lack of enthusiasm for research in AI, the entertainment world and its audience were still captivated by science-fiction stories of murderous sentient robots and AI. Such as the uncanny depiction of humanoids revolting in *Westworld* (1973) and the AI that controlled the operation systems of a house, imprisoning the occupant for procreation in *Demon Seed* (1977).

In the USA its own AI winter was already in effect as a result of a report by the U.S. Government in 1966, which concluded research into AI was futile with low success rates (ALPAC,1966). Before that, AI research was heavily funded, to conceive a machine that would operate simple but realistic set of translation rules using algorithms for simple recognition routines, ultimately replacing human translators, known as Machine Translation (MT). This gained additional traction with the onset of the Cold War as the USA actively sought to gain advantage over the USSR (1947-1991). The hype for MT started as early as 1954, with a public event held by IBM showcasing their success in their early research. An IBM 701 successfully translated 60 sentences from (Romanized) Russian to English, automatically. This was enough for IBM to embellish the truth of the technologies' capabilities in a press release the very next day calling the 701 computer a "versatile electronic brain" (IBM,1954). An active response from the Soviet government only fuelled the hype, corresponding with an increase in funding from the US government (Hutchins, 1996). With time MT research followed the same trajectory as previous AI research, that it was not going to achieve the technological promises, greatly disappointing the government and the general public alike (Ibid). Funding was withdrawn from all fields relating to AI. However, progress into AI continued albeit slowly, under the disguise of different research headings that traced back to AI, such as 'informatics' and 'pattern recognition'. The term artificial intelligence was generally avoided "for fear of being viewed as wild-eyed dreamers" (Markoff, 2005).

Regardless of the AI winter freezing the majority of AI research, the late 70's generated major Sci-Fi film franchises with AI characters having, or playing, central roles in the story arcs such as *Star Wars* (1977) and *Alien* (1979). *Star Wars* was notable in its depiction of honourable AI with good intentions towards the human race, and for both its anthropomorphic and zoomorphic representations in C3PO and R2D2.

The first AI winter thawed in the 1980's when the consumer market started to implement AI technology. These AI systems were simplistic and less ambitious than the speculative AI systems of

previous decades, with the commercial systems moving away from general intelligence to performing narrow tasks through very specific sets of rules. Such systems were implemented to perform various but specific tasks for example the Digital Equipment Corporation (DEC) created a system for configuring compatible computer parts for sale. Developed in collaboration with Carnegie-Mellon University, this transition highlighted AI research shifting from academia to industry, and the very different expectations of AI research solving real world problems (Polit,1984).

Despite saving DEC $40m a year by 1986, by 1987 these commercial systems were expensive to maintain allowing an opportunity for the advancements of Personal Computers. Funding into AI research was once again cut bringing a 'Second AI Winter' which lasted until the mid 90's, when a "giant step for computerkind" ensued (Harding & Barden,1997). This occurred when the undefeated chess champion Gary Kasparov was finally defeated by IBM's *Deep Blue* AI after he had previously defeated IBM's previous chess computer 8 years earlier. After IBM's triumph many commentators questioned if *Deep Blue* was actually intelligent or just 'searching through millions of possible move sequences ``blindly'' (McDermott, 1997). Such questioning is often described as the AI effect, when AI has achieved the once thought unachievable, we consider that achievement mechanical and not worth the tile of true intelligence (Kelly, 2014). Such considerations are no doubt due in part to the conflation of fictional representations of AI and the reality of AI.

The mid 90's brought the development of the Humanoid Robotic department at MIT with famous research projects such as; Kismet an expressive robotic 'creature' and Cog a 'human-like robot'. Kismet was an experiment at developing an 'expressive anthropomorphic' robot, which engaged with human counterparts. Kismet processed visual and auditory input as triggers to motor outputs to 'act' out a response from head and eye movement, reminiscent of Johnny 5 from *Short Circuit* (1986), to vocalisation described as a babies babble.

Cog was the brainchild of Rodney Brooks, director of the MIT AI Laboratory (1997-2007). Inspired by Johnson and Lakoff's theory that "we categorise as we do because we have the brains and bodies we have and because we interact in the world as we do" (1999). Brooks theorised that in order to develop a human level of intelligence, then one would have to build a physical entity to interact with the world. This research was heavily criticised by academics alike including Minsky, due to the laboured effort and expense of building an andromorphic representation to enable embodiment within the world, rather than simply simulating the conditions using software (Freedman, 1994). The research ended in 2003 with no success.

The 00's were besieged with huge Hollywood blockbusters accentuating the prominence and fascination society has AI. IMAX screens were Illuminated with narratives of dystopian futures and simulated realities, with sentient machines capturing humanity and harvesting their bodies heat and electrical activity to maintain the energy grid in the Matrix (1999). Followed by the 'perplexing' logic (although, ironically performing it's programming) of the Red Queen in Resident Evil (2002). The Red Queen is the main antagonist of the film, depicted as an AI security system, who seals the entrance to an underground chemical weapons laboratory when a deadly virus is released, but kills the non-infected to reduce the statistical probability of the viruses release to the world. The 00's even saw the return of the medias favourite fearmongering speculation Skynet, in Terminator 3: Rise of the machines (2003).

In 2005 we saw the publication of Ray Kurzweil's book *The Singularity is Near,* which once again brought John von Neumanns theory of the Singularity to the fore. The singularity hypnosis is the invention of artificial superintelligence (ASI), which would trigger a runaway technological growth. A

popular idea that stimulates the misconstrued ideas of AI such as Apocalyptic AI (Geraci,2010), but gained popularity through the aforementioned Hollywood portrayals.

2008 brought a major breakthrough in AI in relation to voice recognition which was initially thought as a simple problem but proved elusive until companies were capable of storing and compiling vast amounts of data to build a statistical model of language using ML.

Apple launched the first version of Siri in 2011 for the Apple IPhone 4S. A long running ambition for Apple which started in the 1980's, when Apple commissioned George Lucas to create a concept video for a speculative idea known as the "Knowledge Navigator." The short clip shows an IPad type of device, similar to the IBM Newspad in *2001*, showing a humanoid AI assistant on screen, voice out the day's schedule for a professor, capable of retrieving knowledge such as word files etc, very much like Bush's Memex.

2014 brought the era of Chat-bots, with Eugene Goostman being reported as the first bot to pass the Turing Test by tricking 33% of a panel of judges that Eugene was a 13-year-old from Ukraine who didn't speak English well. However the media hype was in the realms of science-fiction and other academics in the field claimed Eugene was simply a clever coded piece of software that, managed to trick less than half the judges during a 5 minute conversation that should have lasted at least hours, if not days, to really test the capacities of an AI (Edgar, 2014).

The year 2014 also saw the release of the voice interaction virtual assistant Alexa. Alexa functions by using deep learning AI technology, and today is being developed to operate a smart home (try not to think Demon Seed), moving beyond the initial release functions of music playback and information retrieval. Alexa has been a surprise 'Billion dollar' opportunity for Amazon but also a surprise social actor that has been brought into people's homes. Cynthia Breazeal says "we treat a computer not unlike the way they would treat each other… So, when you present our brain with things like these technologies that can over time mirror these abilities, our social brain just kicks in" (Green, 2017). Evoking the moving depiction of Robot & Frank (2012) about an aging man with dementia and the budding personal relationship he has with his domestic robot.

Microsoft activated Tay in 2016, a chat-bot that took less than 24 hours to "go off the rails" (Price, 2016). Deployed on twitter and designed to engage in playful conversations and gradually learn from dialog with other users. However, Tay was corrupted by learning from corrupt data sets curated from conversing tweets and learnt to tweet racist and Neo-Nazi slurs. Tay was a very public example of how AI can be corrupted by prejudice data and optimising algorithms with racially discriminating patterns.

Whilst these anthropomorphised forms bring forth the depictions of generalised AI characters such as HAL in *2001* they in fact have more in common with the ML recommender systems on sites such as Amazon or Netflix as they are primarily based on algorithms that look for patterns in large data sets. It is through such data sets that biases can be easily and in many cases problematically introduced.

3. Bias introduction and amplification through Machine Learning

Machine Learning was coined by the computer scientist Arthur Samuel in 1959 and is defined as the "computer's ability to learn without being explicitly programmed". A subfield of AI, ML uses programmed algorithms to analyse data to predict output values trained from a programmed definition of success optimised overtime. The prevailing perception is that AI and ML are the apex of

truth and efficiency, however the underpinnings of ML are not yet fully comprehended (Kusner, Loftus, Russell & Silva, 2018). Nevertheless, ML algorithms do produce an output from an input, and are implemented in a myriad of social services from loan and mortgage applications to parole selection.

In simple and clear terms algorithm bias transpires when AI reflects the implicit values of human actants who are involved in the coding and the selection of data for the training of algorithms. Algorithms are presented and marketed as objective fact, although they could be more accurately described as opinions embedded in maths, working for the people and the powerful who build and implement them (O'Neill, 2016). ML primarily uses large data sets to enable machines to 'learn' without the need for being explicitly programmed to perform the task, relying on the validity of these data sets (Alpaydin, 2016). However, datasets and the models applied are not objective or neutral, the ML process amplifies these existing prejudices that go on to govern and judge over another and are increasingly being used to make sensitive decisions that have consequences in reality, particularly for those considered as outliers within the data (Elish & Boyd, 2018). One area of bias could be the fact that so many programmers are male, essentially handicapping society to one particular worldview in effect; the curation of bias data sets (Clark, 2016). For example, it was reported in various media outlets that a feature within Google's photo apps, used for auto labelling photographs, was classifying images of black people as gorillas and Nikon's camera software was interpreting images of Asian people as blinking (Crawford, 2016). Whilst these examples of mundane AI are undoubtedly problematic for users, and embarrassing for companies involved, they are examples that are even more troubling. It was recently reported that software used to assess the likely recidivism of US criminals was twice as likely to mistakenly highlight black defendants as being at a higher risk and twice as likely to incorrectly identify white defendants as low risk (Angwin, Larson, Mattu, and Kirchner, 2016). The flaws of AI are largely unnoticed, nor broadcasted to the general public, mundane compared to killer anthropomorphised robots. Though the flaws do pose a, albeit less dramatic, threat to society.

Whilst some argue that such examples are due to a lack of consideration of the human within their development many of these systems are said to have utilised Human Centred-Design (HCD). This apparent discrepancy is arguably a function of an increasing awareness that HCD needs to adapt and expand to better serve the increasing complexities inherent within contemporary design contexts such as the Internet of Things (Lindley, Coulton & Cooper, 2017) and the agency of AI and data.

4. Examining Human-Centred Design

Introduced in the 1980's, and applicable today, HCD was a pioneering methodology in contemporary design. It has become an integral part of design education and been successfully integrated in multidisciplinary application (Markopoloulos, Martens, Malins, Coninx & Liapis . 2016, Glomann, 2015). Many related design methodologies can be traced back to HCD, which came from the influential writings of Donald Norman. HCD's cardinal point is to place the end users at the centre of the design process. Following a 'design philosophy' that should be 'based on the needs and interests of the user, with an emphasis on making products useable and understandable' (Norman, 1988). Norman provides set principles, almost check lists, to empower full attention on the user throughout the design stages; such as simplifying structures of tasks and not overloading the user's memory, to design for error, and allow planning for all that could go wrong so the user can recover from any possible error (ibid). Simplicity was advocated for overcoming the complexity that was arising from working within human-computer interactions (Norman, 1998). Describing that creating software and hardware which could perform many tasks would confuse a user, the solution was to make products

perform fewer tasks and conceal the inner workings that would only encumber the products productivity for the user. Good design for HCD was making the technology invisible (ibid).

Whilst HCD principles have brought about good design with positive outcomes for the intended users in a wide range of products and services, from mobile phones to Kellogg cornflakes (Thomsen, 2013), a side effect of this design principle is to make things 'invisible' and shroud the complexities from the user, in doing so disappearing the functional underpinnings of a product, most notably where technology is concerned. In some successful products the concealment of the inner works is welcome and streamlines the use of a product, which is desirable, accepted and the intended goal of HCD. Arthur C. Clarke's often quoted "third law" seems reminiscent when discussing the cloaking of technology, that "any sufficiently advanced technology is indistinguishable from magic." The same sentiment can be seen in metaphors used to describe technology such as 'The Cloud'. David Rose's 2014 book, *Enchanted Object* intensifies this idea, by calling upon designers and technologists to create the 'enchanted objects of fairy tales and science fiction' (Rose,1994). Concealing how technology is connected or to disclose full operations of technology in a quest to make products and actions seem magical, adopts HCD principle of usability.

The uptake and the dogmatic allegiance designers have towards HCD was alarming for Norman, compelling him to write an article in 2005 titled "Human Centred-Design Considered Harmful." The opening statement audaciously describes HCD dominance in the field, and the automatic application of HCD to designs without criticisms, claiming his principles "can be helpful, misleading or wrong"(Norman, 2005). His intention was to provoke conversation about improving design methods, beyond the principles that worked in the 1980's, to working with contemporary design methods that lend themselves to scrutinise and unravel obscure technologies.

5. New approaches: Object Oriented Ontology

In his influential work *Being and Time* (1927), Heidegger presented his view on ontology, laying down the foundations for philosophical exploration on the concept of *Being*. Heidegger's 'traditional view' was 'things', or 'objects', are impossible to understand in their own phenomenological terms, one can only make sense of these 'things' in relation to human use, famously using a hammer to make his point. When a hammer is in its 'undisturbed' context of use then it is 'ready-to-hand', if the context has been disturbed or broken than it would be described as 'present-at-hand.' The metaphysics in such questions are beyond this papers remit, however the take away fact is that the hammer only comes into being dependant on a human's use or non-use. For Heidegger, objects are outside human consciousness, but their being only exists in human understanding thus culture can be multifaceted, but the material world can only be singular (Bogost, 2012). It is this dominance of the human perspective as a means of understanding everything in the world that looms large in HCD and the question thus is how might we consider things differently?

The most prominent critique of this perspective comes from the Speculative Realists (Quentin Meillassoux, Ray Brassier, Ian Hamilton Grant, and Graham Harman) who, Like Latour rejected the notion that the human mind and world are inseparably linked (Gratton & Ennis, 2014) and refer to as 'correlationalism'. Whist each of the Speculative Realists offers different ways of addressing correlationalism here we focus on Object Orientated Ontology as it offers a way of considering all things as actants including algorithms.

In the late 1990's Harman coined the term 'object-oriented philosophy'. Bryant further developed and coined the term 'Object-Oriented Ontology' (OOO) in 2009, an umbrella term to describe comparable ideas of object-related thought (Harman,2018). OOO rejects correlationism and in doing

so allows us to theorise objects possessing agency within a flat ontology. A synthesis of two 'cultures', an ontology that does justice for nonhuman actors and human actors. Where humans are not 'the centre of being but are among beings', (Bryant,2011) and no object more significant than any other, rejecting the approach of humanity at the centre (Bogost, 2012).

In OOO object's do not relate merely through human use but through any use, including the relations between objects contradicting Heidegger's 'ready to hand' theory. Reality is reaffirmed and multifarious, the complexity of being among all things is embraced in OOO. Opposite to scientific naturalism, 'things' are equal no matter, scale, size or order (Harman, 2018).

For this paper we are particularly interested in the ideas forwarded by Ian Bogost in *Alien Phenomenology*, particularly the notion of *carpentry*; the practice of making machines that puts philosophy into practice and attempts to expose the phenomenology of objects. Machines of carpentry can act as proxies for the unknowable, despite the knowledge that objects experiences can never be fully understood. 'Offering a rendering satisfactory enough to allow the artifact's operator to gain some insight into an alien thing's experience' (Bogost, 2012). Bogost creates waypoints through carpentry enabling the philosophical discourse regarding an object. An example is Bogost's *Latour Litanizer,* which generates Latour-like litanies from random Wikipedia queries, presenting a list of random titles, providing a portal or waypoint into Wikipedia's content with an invitation of the objects phenomenology (ibid).

In OOO objects are not limited to material objects but are infinite permitting multiple adaptations and interpretations of 'being' treated as equal simultaneously independent of scale; a flat ontology. Illustrating this notion of flatly ontologising a computer, Bogost transcribes different notions of being using the famous ill-fated 1982 videogame E.T.: The Extra-Terrestrial for the Atari as: 8 Kilobytes of opcodes, assembly code, a circuit of memory, a plastic cartridge, a culture of greed and so forth.

Bogost tells us that all of these things exist simultaneously together, yet independent from one another, something that Latour refers to as 'irreduction'- that nothing can be reduced to anything else (Bogost,2012). As a repercussion, inter-object relations are devoid of familiarity with objects only unlocking each other's realities to a certain extent (Harman, 2018). A challenging idea, however OOO can serve as a provocative and powerful perceptive tool to utilise in design.

For Bogost his craft is programming, programming offers him the opportunity to code waypoints into an objects phenomenology. All crafts for Bogost lends themselves to carpentry even design, an area explored for IOT (Lindley, Coulton & Cooper 2017). We propose that OOO can inspire design strategies for understanding the complexities of programmed models within AI and ML. Through the construction and carpentry of objects, visualising flat ontologies and creating waypoints into the object's phenomenology visualising the content for inspection, we can then start to design solutions.

This computer focused approach to OOO is an interesting place to work in as it enables a demiurgic positioning (ibid), offering models of alternative realities, grounded in principles of reality to explore objects perceived as magic. Below is an experimental diagram attempting to show OOO inspired perspectives of AI voice systems that could reveal the inner working of ML beyond the seductive representation of the humanised voice. The diagram is provided to give designers the potential path towards OOO carpentry and a way to address design challenges of revealing the different 'actants', 'objects' and 'things' within such a system. Such considerations might result in challenging existing conventions which currently drive manufacturers to make the voices appear more human to one in which we deliberately make it sound like a machine thus revealing its true origin. Note that the diagram is not provided as a solution or meant to be prescriptive but to fuel a conversation as to whether it is time to move towards a more-than-human view of design.

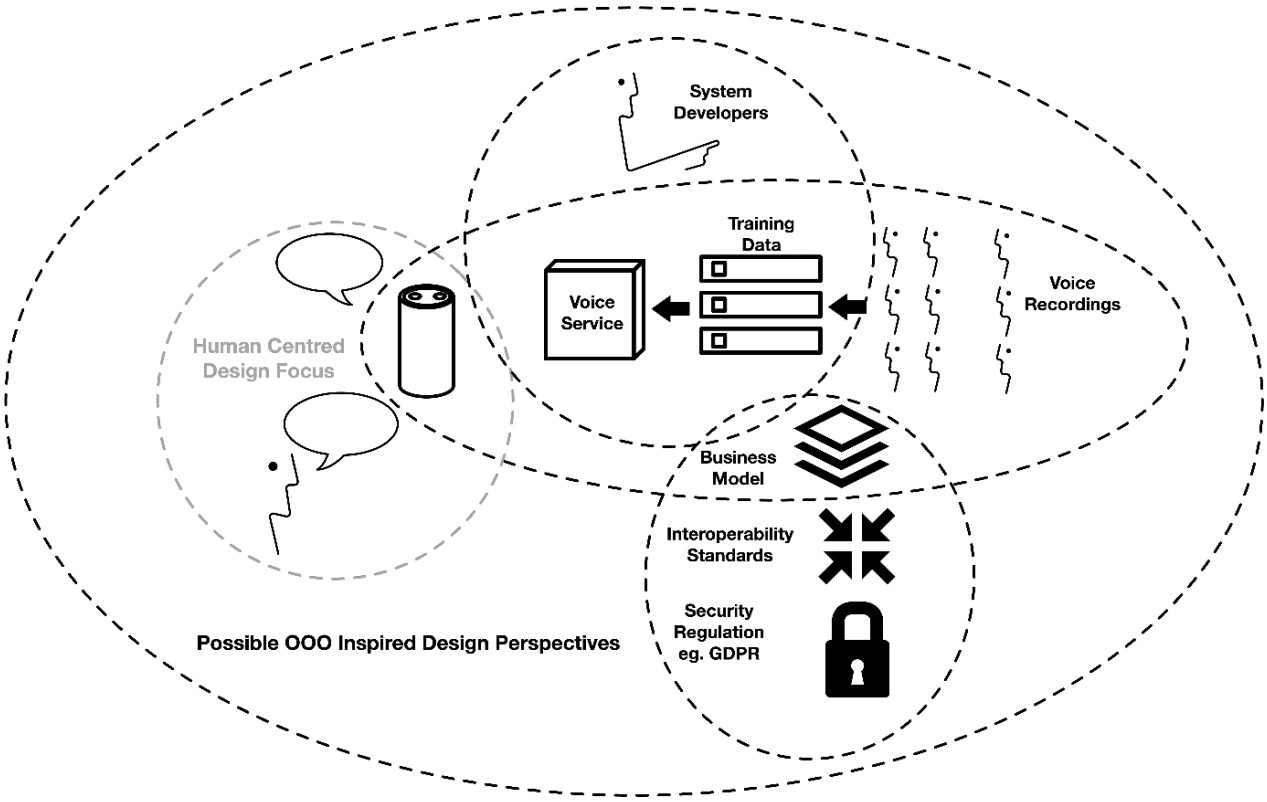

Figure 1. A constellation diagram showing the possible OOO inspired design perspectives, visualising the different actants in a network and the limitations of other perspectives. Coulton 2018

6. Conclusion

In this paper we have presented an overview of AI evolution and contrasted this with the mythos of AI in popular culture. This AI myth is sold by the shock-vertising of the media, blurring the line between fiction and non-fiction. This vague line between fiction and non-fiction is symptomatic of anthropomorphising AI technology, which is propelled by the encoding of human prejudices into AI algorithms. To circumvent the anthropomorphising of AI technology we aim with this paper to start challenging design methods concerning AI technology. To move towards design that is not primarily focused on humans, challenging the principles of HCD. Regarding this we have presented an argument for how approaches inspired by OOO may offer new perspectives for framing design activities that utilise AI. Simply put, a method that perceives objects oriented in a flat and equal ontological order, enabling the design process to regard all actants of a system rather than undiscerning attention on a single centralised entity. The ambition being to create and design neutral unbiased systems that generate outputs that pose no ethical dilemmas.

Within this paper we have also evidenced the popular speculative hypothesis for successfully creating AI is to, in simple terms, create a technological system that mimics how the human brain works. The idea surrounding AI technology and advancements, accommodates and amplifies anthropomorphised notions, as the aim has always been to create technology with a human level of intelligence. The notion of AI has always been tangled with human existence. Does AI technology and ML require a human level of intelligence to operate successfully in the areas we currently use them, such as social media, surveillance and application processes? We are continually wrapped up in the speculative fiction that the Singularity will conjure a being made in our own image, but as Johnson

and Lakoff state ‘we categorise the world as we do because our brains and bodies lend us to interact with the world in a certain way’ (1999), a reproduction will only be a counterfeit and interact differently with the world. Humans are biased and opinionated, we are simply placing that into a system that will amplify our intentions, while ironically trying to avoid that by turning to AI systems. By understanding that all actants can exist on an equal plane, and designing from alternative perspectives using OOO methodologies we can start to frame differently how we proceed with AI technologies.

We have also shown that AI is characterised and marketed as ‘magic’ or ‘alchemy’, which is analogous to HCD, obfuscating the functioning components of technology, leading us down the rabbit hole of ignorance when incorporating the unknown, into systems that govern us. Our hope is that we have presented early groundings for new design practices to flourish that will overcome the challenges for designers as AI becomes a material of design, where we can contest the real issues through developing a better understanding of AI and forget the Singularity.

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