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DESIGN: VERTICAL & HORIZONTAL GROWTH

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Humans, Technology and Speculative Design Futures: Can We See the Invisible?

Abstract

Recent technological developments have geared humans with profound opportunities to shape better futures. Although these advancements might seem astounding, they might also have serious ethical implications and societal consequences. The aim of this paper is to situate and connect design with the topical philosophical discussions about the future of humanity. In this paper, I problematize the relationship between humans and technological futures. I give a short account on the ethical implications of emerging technologies. I also discuss how humans are dealing with a post-anthropocentric future of multispecies, other critters and possibly other human species. Furthermore, I highlight the role of design practice as an aiding agent and catalyst in shaping better futures. The paper attempts to position critical, discursive and speculative design practices as fundamental tools in designing technological futures.

Keywords: Design Futures, Speculative design, Anthropocentrism, Technology.

Introduction

In his book “Sapiens: A Brief History of Humankind”, Yuval Noah Harari discusses how homo sapiens have been changing over time. He argues that natural selection gave humans opportunities more than it gave to other organisms. Yet, humans were still limited by their biological and physical limits. Eventually, this is not the situation nowadays. In the twenty-first century the position has changed; humans have gained the opportunity to cross these limits, changing the rules of natural selection by technology-driven intelligent design (Harari, 2014). While writing this paper, Elon Musk; the founder of the neurotechnology company “Neuralink” has unveiled a chip implant that would make it possible to create a real brain-to-machine interface so that humans could communicate with the machines. Inventions like this trigger many questions about what does it mean to be human and what sort of human are we go-

ing to be in the future? Does this mean we are about to encounter superhumans with computer-like brains? Or humans that could communicate with signals? would this mean that human mind could be part of a machine or would humans themselves be like machines?

The aim of this paper is to introduce design as a potential practice to explore and design better futures. My attempt is to situate design within the philosophical debates about ethics, technology and future human along with shedding the light on speculative design as a tool to research & examine emerging technologies. In the second section of this paper, I discuss some of the ongoing philosophical debates about the relationship between humans and technology. I give a short account on the anthropocentric theory that shaped our present along with a discussion about how technology of the twenty-first century triggered other movements such as the transhumanism, posthumanism and the Chthuluscene. In the third section, I give a brief account on the relation between ethical frameworks and anthropocentrism then I discuss the implications of the unwise adoption of technology. I follow this by the fourth section where I discuss the role of design in dealing with emerging technologies and why it's paramount that design should be aware of the technological ethical and social implications. In the fifth section I introduce the critical and discursive practices of design. I follow this by the sixth section where I focus on speculative design as a potential aiding agent and catalyst for designing futures. I conclude this with a brief discussion on speculative design criticism along with a suggestion for potential areas of exploration.

The anthropocentric view of the world

It feels sensible before getting into the details of human relationship with technology to give a short account on anthropocentrism. In environmental ethics, it is defined as “the belief that value is human-centred and that all other beings are means to human ends” (Kopnina et al., 2018). Anthropocentrism refers

to the belief that human being is the central element in existence. Which gives human beings a privileged space or exceptional position among other organisms and entities existing with them. This position is the root of the ethical consideration where it merely means that human is allowed to exploit any of the other co-existing beings in order to realise its desires (Rae, 2014). Anthropocentrism had a long history of debate and argument by environmental ethicists, sociologists and philosophers about human agency to the environmental degradation (Kopnina et al., 2018). This argument was extended to include the debate about how humans look at the other-than-human, non-human as well as cohabitating with other organisms whether organic or non-organic (Haraway, 2015)

In the past three decades, with the rise of awareness movements towards the environmental destruction, the anthropocentric positions have had rejections and oppositions being referred to as the main reason for the abusive relationship between humans & other beings (Rae, 2014). Donna Haraway argued that humans should shorten down the Anthropocene as much as possible and to prepare for other epochs where multi-species living together as “myriad intra-active entities-in- assemblages including the more-than-human, other-than-human, inhuman, and human-as- Humus”. She calls this the “Chthulucene” referring to the relationship between human and other earth critters (Haraway, 2015). There’s a criticism of the anti-anthropocentrism position grounded by the hypothesis that if the non-anthropocentric analysis comes from humans. Therefore, they are to some extent based on a degree of anthropocentrism, which is conflicting and confusing (Hayward, 1997)

The next “human”

Indeed, technology has geared humans with extra capabilities; whether it’s a medical enhancement, a prosthetic limb or even smart devices. The new capabilities humans have gained induced the emergence of several philosophical movements that aim to understand how the future of humanity might look like. One of these movements is the “transhumanism”.

Transhumanism encourages human race to overcome its weaknesses and vulnerable traits by means of technological advancements in order to bring about the transhuman or post-human (Bostrom, 2005). Transhumanist movement discussed enhancing human beings with various capabilities such as life-span extension, augmentation of physical, emotional and intellectual human capacities as well as diseases extermination. The post-human in the transhumanist discourse might indicate an evolution of a new species that cannot be considered as humans but a new species of its own. Yet, other transhumanist theorists do not agree with this noting that the posthuman would have some more capacities than the ones of the current human; but cannot be considered as a new species (Sorgner & Jovanovic, 2013).

Rae summarises the debate about the posthuman in four main points which are 1) The end of the human, from an anthropocentric perception; that was a result of an epistemological composition that is currently ending; 2) Humans and the surrounding environment cannot be separated bearing in mind that the environment is becoming highly technological; 3) Human environment is not only about humans but it does consist of many other-than-human where animals and technology are the main poles, and; 4) a conclusion that the rational human should be perceived through the lens of relationship with the other surroundings. The binding idea that makes the post-humanist theory coherent is that anthropocentrism is caused by the unjustifiable conflict between the pure “human and “impure” others (Rae, 2014)

In this paper, I am particularly interested in the second and the third streams of debate where I can refer to Haraway’s debate arguing that we are actually now have become cyborgs,

in this age of technological developments supported with biological and technological enhancements, the anthropocentric boundary between human and non-human is no longer present. Haraway backs up this discussion by suggesting that the humans and machines are entwined, the machine has gradually become organic and human has partly become machinic (Haraway, 1991). This can also be seen in the invisible and unnoticeable artificial intelligence technologies we rely on daily without even feeling they are there (Cath et al., 2018; Floridi, 2016).

Implications of ethical frameworks

In the previous section I’ve contextualized the basic and fundamental debates about future technology and humans. In this section, I highlight some ethical inquires along with some examples of what might be the implications of the unwise adoption of technology. Before I identify some ethical implications, I will highlight the dilemma with the current ethical frameworks.

There are three main ethical frameworks, but they all share a basic anthropocentric perspective. The first is “Deontology”; where ethics is defined based on human intentions. The second is utilitarianism; at which there’s a need for human calculations to judge the consequences of an action and decide whether it’s good or bad. The third is virtue ethics, where the action is judged based on the character who is doing it. In all the three lenses, ethics is seen from an anthropocentric perspective that decides what’s good for the human. The problem is that if an ethical issue has been seen through the lens of anthropocentrism then it’s somehow excluding the others (Rae, 2014). Another argument is related to the 1948 human rights declaration that starts with “recognition of the inherent dignity and of the equal and inalienable rights of all members of the human family is the foundation of freedom, justice and peace in the world” (United Nations, 1948).

This raises several questions such as what is dignity? and what are rights? and does human rights only that count? The concept of human dignity enjoys global acceptance because it refers to the notion of recognition. In other words, the declaration is a subtle confirmation of humans having the highest value because of being human (Lebech, 2004) it is clearly noticed that the discussion about dignity is also coming from an anthropocentric perspective, which is problematic when discussing the dignity of other-than-humans.

Ethics, technology and design

Ethics and technology have had a quite complicated relationship, in this section I try to give a short account on the nature of this relationship as well as the problematic dilemma of taking technology from science laboratories to be introduced to the market. In this section as well, I introduce the role of design in this debate.

Victor Margolin argues that ethics and technology are in a grey area where implications of moral nature aren’t clear for some actions; while we understand clearly the advantages and threats of technology, but we still do not have the intellectual and political tools to handle the technology integration with societies (Margolin, 2007). I’ll put artificial intelligence (AI) as an example for this complicated argument. AI has a very wide range of ethical questions and concerns rising around it, from issues such as trust and transparency to responsibility and self-determination.

These concerns could be seen in healthcare tasks delegation, users’ profiling in advertising and autonomous driverless cars (Taddeo & Floridi, 2018). Those are clear situations where AI can either be a very dangerous threat or a very supportive technology. This imposes the urgent need to apply robust ethical platform for implementing similar technologies in societies. All other emerging technologies might have the same concerns

as AI. These technologies made fundamental changes to humans’ relation with the material world where different key actors play different roles including scientists, engineers, developers and designers. They all have very central position in these transformations but there’s a doubt that they can predict what could be the uses of their outcomes and what could be the “dark side” of particular developments they may be introduced to the market (Margolin, 2007). Design can play an active role in addressing these dark sides, exploring them, revealing them and putting them under investigation.

Design issues

By the end of the cold war and the fall of Berlin wall; market-led capitalism has taken over any possible alternative models for societies thus design had only one way to align itself with; finding no other alternative political or social frameworks (Dunne & Raby, 2013). This indirectly contributed to unfavoured implications on the social and environmental levels (Jakobsone, 2017). Design is surely a fundamental part the of socio-economic system. The government-led economic system usually chooses particular paths for technological development. This sort of development is not random; yet it does have political drivers that are related to the industrial society where it develops (Malpass, 2018). It’s not always easy for designers to take themselves out of this system and to think of other alternative solutions. So, if design doesn’t know where to go or does go with consuming the “only made available” solutions; there might be serious implications of taking such path; noting that emerging technologies are rarely questioned due to the pressure made by politicians and shareholders demanding growth; moreover, technologies are usually made desirable for designers to adopt and implement (Auger, 2014)

It is obvious that the world around us is changing fundamentally; science and technology are growing rapidly to reach unprecedented areas such as synthetic biology, nanotechnology, and neuroscience; these areas are opening up new realms for design to explore and adopt on a level and scale never reached before (Dunne & Raby, 2013). The uprising technologies do not only focus on mere scientific developments but also developments that might manipulate our emotions and desires (Harari, 2014). The central enquiry of many of these radical developments is to design lives both human and animal (Dunne & Raby, 2013); this triggers many questions about the consequences and implications of what could be the future for these designed lives? Whether it will be human or inhuman or a mixture of both? How do they relate to each other and how could they relate to the environment?

It’s imperative now to think that there’s a need to reorient ourselves and to rethink ethical discussions that have historically been part of design (Margolin, 2007).

Design role

Designers from the various disciplines can contribute greatly to the futures. Designers can shape the relationship between human and technology. They are responsible for bringing products, buildings and technology to life. Design is an activity that lies between two worlds, the one we are living and the one that could be. Designers have the ability to turn an immaterial idea into material application that can be then introduced to the market (Margolin, 2007). It is obvious that the technological development is unstoppable; and that designers’ contribution to this development is paramount. So, the question is how designers can respond and contribute to the technological developments responsibly rather than going with the flow without questioning. Dunne and Raby (2013) argue that designers should not only design applications but also implications through creating alternative products and services that aim to question social and

technological development. Designers can do this by going upstream to test ideas before even becoming an established technology or application. Designers should look at the implications of adopting these ideas on society and to debate the political, cultural and ethical consequences. Design can facilitate the discourse on advanced research in science and technology as well as engaging wider audience in this debate. It can help in “developing a practical way of understating” for engineers and applied scientists in realising social and technological futures (Malpass, 2018). By this, design can follow what Hariri has suggested which is “influencing the direction of scientists” and to respond to enquiry of “what do we want to want? Instead of “what do we want to become?”.

This is exactly where design lies as a catalyst between the science lab and the market. That is where the consumer and profit led factors enter the field (Dunne & Raby, 2013), that’s also where the trouble starts along with the opportunity for change. It’s vital now for humanity, no need to mention particular categories of stakeholders, to act as early as possible towards the upcoming technological revolution before we end up taking decisions after it is too late or after mass destructions that might need years to recorrect. That’s very similar to what happened with the impact on labour force and the environmental consequences caused by the past industrial revolutions (Taddeo & Floridi, 2018).

Critical/discursive design as a catalyst for change

Having discussed the need for stimulating a debate on technology. In this section, I introduce the area of critical/discursive design practices where it’s possible to use their capabilities in creating the debate regarding particular technology. Bruce and Stephanie Tharp (2013) categorize design into four categories:

- Commercial design: this represents the majority of the product/industrial design practice, this category is driven by the market and its success can be measured by profitability.
- Responsible Design: a type that is stimulated by a humanitarian cause; can be defined as being socially driven for the users that are ignored by the market; this type produces products that can be put in sale but it’s aim is not making profit of sales.
- Experimental design; this type focus on exploring and experimenting processes rather than focusing on the outcome; it’s usually motivated by an enquiry such as exploring manufacturing technique, material or scientific development.
- Discursive design: this type at which design is used to communicate ideas rather than presenting a design outcome, it uses utilitarian objects, services or interactions as tools of thinking and opening up a discourse about a particular debatable issue. This type is not very common to see in market mostly in exhibition print and film.

This categorisation was mentioned to contextualise discursive design and to introduce another practice which is critical design. critical design is often used interchangeably with discursive design to describe a kind of design at which the aim is to debate and not to create a functional design outcome. Dunne and Raby coined this term as a response to the movements that look at technology as an always good practice that would solve any problem. They identified critical design as a practice that “uses speculative design proposals to challenge narrow assumptions, preconceptions, and givens about the role products play in everyday life”. They described it as an opposite attitude to affirmative design that reinforces the status quo. Critical design identifies the gap between reality and the different idea of reality that creates a space for discussion; it uses a dialectal discourse between fiction and reality to cause an effect (Dunne & Raby, 2013). Therefore, “critical design provides an analytical position for exploring, conceptualising and communicating

around emerging technologies” (Arnall & Martinussen, 2010). Mazé & Redström describes critical design as a form of design that uses design tools and process not to solve a problem but to rethink the borders and parameters of a problem from a critical of view (Mazé & Redström, 2007). Critical design is influenced by the critical theory and its aim is to capitalize on the audience engaged in the discourse and their intellect to convey messages (Malpass, 2017).

It is important to highlight the three categories identified by Malpass for the contemporary critical practices according to domain, scope, visual narrative and topic addressed (Jakobsone, 2017) which are: associative design, critical design and speculative design. The roots of associative design are coming from the Italian radical design and it capitalizes on experimental techniques driven from conceptual art such as subversion and experimentation. Critical Design is the approach I have identified in the aforementioned section and the third category is speculative design which is the branch of critical and discursive practices that focuses on the future of emerging technologies by commenting on socio-scientific research and theories (Malpass, 2017).

In this particular research, I’m focusing on speculative design with the aim to answer the question of why critical and discursive practices could be capable of aiding designers to design better technological futures with deep understanding of the surrounding issues not just designing mundane products.

Speculative design rationale

In this section I shed the light on speculative design from an ontological point of view, in other words why speculative design is there? and what does it do?

Speculative design can be considered a branch or a variation of the critical design practices. The branch that focuses on technological futures. Dunne and Raby (2013), the researchers who popularized the term, describe speculative design as “an activity where conjecture is as good as knowledge, where futuristic and alternative scenarios convey ideas, and where the goal is to emphasize implications of “mindless” decisions for mankind”. It uses design as a means of speculating about how things could be, to imagine possible futures; not through the usual means of predicting or forecasting such as spotting trends, extrapolating themes and predictions as they cite these methods are erroneous (Dunne & Raby, 2013). While Auger defines Speculative Design as “it combines informed, hypothetical extrapolations of an emerging technology’s development with a deep consideration of the cultural landscape into which it might be deployed, to speculate on future products, systems and services” (Auger, 2013)

Speculative design does not provide answers as it aims to raise questions and to provoke debate (Raby, 2008). It aims to design alternative presents; by doing this, it can always make radical interventions to the current practices and evolving technologies by applying different ideologies and practices (Coulton et al., 2016). Auger adds to this argument that speculative design emphasizes the “philosophical enquiry into technological application”; it tends to take discussion on technology beyond the experts to a broad population of audience (Auger, 2012). The resulting artefacts often appear subversive and irreverent in nature; they look different to the public and this is the key behind triggering discussions and stimulating questions (Coulton et al., 2016). Malpass has argued that the main aim of speculative design is to “encourage the user to reconsider how the present is future and how we might potentially have the chance to reconfigure the future” as it “attempts to explore ethical and societal implications of new science and the role product design plays in delivering it” (Malpass, 2013)

One of the most important offerings of speculative design is that it does not force particular ideas on its audience on how

they should perceive or deal with particular technology. Its purpose is to confront the audience with emerging science or technology too early and leaving the audience to choose what’s meant for them to use such technology (Auger, 2014). This sort of public engagement is basically what makes speculative design democratic practice (DiSalvo, 2012) using design to reconfigure our futures with the public voices and reflection considered in the decision about technology. Speculative designers do not suggest what preferable future is, they let the society decide what it is a preferable future for them, whereas affirmative design, government and industries actually decide on their preferable future and create it (Dunne & Raby, 2013). It encourages people to suggest their preferable future that has no direct relevance with today’s perspective of how the future should be and this raises the awareness for society on how they could influence their choices for the future (Jakobsone, 2017); the logic of the ‘laws’ of future implies that if we strive for something, we can eventually turn it into reality, even if it seems incredible now (Voros, 2001).

Before I conclude, it is important highlight that critical and discursive design have had criticism among the design community. The criticism for these practices is mainly built on the fact that these practices are not producing functional objects which is defying the main purpose of the design discipline whose main aim is problem solving (Jakobsone, 2017). The second aspect of criticism is the association with the Frankfurt school of criticism which has put critical design in a privileged area where only the “elitist” can reach and interpret its proposals. This is also connected to Tonkinwise argument about critical design being sometimes there to solve first world problems (Tonkinwise, 2015). Some of the designers already present dystopian futures about, for example, the scarcity of energy where some areas of the world are actually living the same situation now. The third aspect of criticism is the reflection mechanism; Tharp and Tharp describe the action of creating a critical design proposal by a “message in a bottle”; at which designers send a message to unknown audience without having control on what sort of reflection does this proposal make (Tharp & Tharp, 2013).

Conclusion

In this article, I’ve discussed the relationship between humans and technological futures aiming to identify what technology is bringing to humanity and to what extent it might change the notion of human as we know it now. I discussed the basic frameworks for ethics concerned with technology and gave some examples of what the implications of technology could be. I followed this by highlighting the role of design in acting towards the socio-technological challenges of the future. Then I suggested the critical & discursive practices in design to be an appropriate approach to imagine ethical implications of technology in order to debate about these challenges as early as possible. In particular I focused on speculative design as an approach to use design as a medium for technological futures enquiry. In future research, I aim at tackling the gaps in design futures practice by further exploring and examining adjacent design practices to speculative design such as design fiction and experiential futures where there’s an opportunity to tackle some challenges that speculative design had struggled to overcome.

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We'll meet again! 'Design: Vertical & Horizontal Growth' was a precursor to the official annual Cumulus Conference. Postponed due to COVID-19, this will now take place in Moscow and St.Petersburg in June 2022. If you have any comments or questions, please do not hesitate to contact us by email cumulusrussia@gmail.com