Surveillance based Persuasion: The Good, the Bad and the Ugly

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Abstract: Surveillance-based persuasive technologies have become ubiquitous in the form of fitness trackers, advertisement engines, recommendation systems and birthday reminder applications. They are also being integrated into socio-economic systems such as insurance, health and education. In reported literature, surveillance has raised significant ethical concerns about privacy and persuasive intentions of technology have come under scrutiny for undermining human autonomy. This paper discusses the ethical implications of persuasive technologies from the perspective of human autonomy and freedom. It begins by acknowledging the reported and possible future advantages of surveillance-based persuasive technologies, with an emphasis on the conditions which make them beneficial (the good). It then discusses the ethical trade-offs involved and the problems with how those trade-offs are designed and implemented in technology (the bad). Lastly, the paper discusses severe ethical concerns which involve coercion or manipulation of users into being persuaded for economic or even paternalistic needs of the technology (the ugly). This paper has argued for designers and businesses to employ an ethical approach to persuasive technology design and has presented possible suggestions for such an approach. These suggestions can help design technologies in a manner more conducive to autonomous decision making and freedom of choice for the users.

1 INTRODUCTION

Persuasive technology refers to technologies explicitly designed to influence attitudes or behaviour of their users (Fogg, 2003). The role of computers as persuasive agents is still in a nascent stage of understanding, but certain differences between humans and computers as persuaders are noteworthy, especially for their ethical implications. Because of their novelty, positive reputation and lack of emotion, computers can be especially persuasive without shouldering any responsibility (Fogg, 2003). At the same time, they can be persistent in their attempts to persuade and they can control the interactive possibilities, making some actions easier and others impossible. In recent decades, surveillance has become an integral aspect of many persuasive technologies (Desclaux et al., 2019; Hadjimatheou, 2017; Orji & Moffatt, 2018). Surveillance has been defined as "any collection and processing of personal data, whether identifiable or not, for the purposes of influencing or managing those whose data have been

garnered" (Lyon, 2001). While surveillance by itself raises significant individual and collective privacy issues (Bernal, 2016), the use of surveillance systems for influencing or managing people raises concerns about human freedom and autonomy in the information age (Nagenborg, 2014). In the last few decades, surveillance technologies have become cheaper and persuasive technologies have become readily available in the market. Surveillance-based persuasion has been normalized by being positioned in the market as a solution to humanity's mental shortcomings, both for individual users who voluntarily adopt these technologies as well as for corporations and governments seeking compliance from their users, employees, clients and citizens (Lemieux, 2018; Zuboff, 2019).

This paper aims to argue that surveillance-based persuasive technologies create serious ethical concerns that have not been adequately addressed through technology design or policy. The act of persuasion, even with the purest of intentions, has always been in tension with the values of autonomy and freedom (Maclean, 2006; Spahn, 2012; Strauss,

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2018). These concerns are aggravated when persuasive technologies are designed not with the sole intention of beneficence but are intermingled with economic motives. This paper discusses the ethical implications of surveillance-based persuasion for human autonomy and freedom, and outlines the aspects of persuasion that may not be ethically acceptable because of their excessively coercive, manipulative or paternalistic nature (Susser et al., 2019). The paper begins by acknowledging the reported and possible future advantages of surveillance-based persuasive technologies, with an emphasis on the conditions which make them beneficial (the good). It then discusses the ethical trade-offs involved and the problems with how those trade-offs are designed and implemented in technology (the bad). Lastly, the paper discusses severe ethical concerns which involve coercion or manipulation of users into being persuaded for economic or even paternalistic needs of the technology (the ugly). Through these arguments, this paper aims to promote an ethical approach in the design of persuasive technologies, especially those that rely on surveillance which is intrinsically violating of users' privacy. Implications for economic arrangements mediated by surveillance are also discussed.

2 AUTONOMY AND FREEDOM

In philosophical literature, personal or individual autonomy refers to an individual's psychological capacity to be self-governing (Buss & Westlund, 2018). Autonomy is thought to consist of two aspects: authenticity and competence (Friedrich et al., 2018; Levy, 2007). Authenticity roughly consists in one's actions being true to oneself, rather than being influenced by social roles and conventional ways of living (Levy, 2007). Competence refers to the mental ability or the capacity to critically reflect on the mental states that underlie one's actions. Accounts of personal autonomy in philosophy evoke competence in multiple ways (Buss & Westlund, 2018): as the ability to be sensitive to external reasons and as the ability to reason about one's beliefs and desires. Friedrich et al. (2018) proposed a three-component account of competence: 1) ability to use information and knowledge to produce reasons, 2) ability to ensure that intended actions are realized effectively

(control) and, 3) ability to enact intentions within concrete relationships and contexts.

Freedom consists in the availability of choices of action that an individual has. It has the function of keeping doors 'open' and it consists in having options that the individual may not ultimately choose but whose existence is still valued (Nagenborg, 2014).

3 THE GOOD

In favour of persuasive technologies, one argument is that they can be designed with beneficial intentions, which has been made frequently in reference to nudges designed for the public good (Thaler & Sunstein, 2008). Persuasive technologies can be valuable when intended to help overcome human irrationality, which leads to systematic errors in judgment (Tversky & Kahneman, 1974). People who are cognizant of their own biases can choose to be voluntarily persuaded, even when the persuasive methods undermine their autonomy through 'trickery'. For example, mobile applications that are designed to help users quit smoking or alcohol track their behaviour and utilize persuasive techniques from psychology to modify it (Bascur et al., 2018; Nagenborg, 2014). If the users endorse the methods and outcomes of such technologies, their overall autonomy to pursue their authentic goals is enhanced. This is possible even when the technology functions by reducing the freedom of users. For example, certain smartphone applications can be designed to lock users out of their own phones after a pre-specified amount of phone usage[1]. This enables the users to manage their device addiction, enhancing their autonomy by restricting their freedom.

Another autonomy enhancing aspect of surveillance technologies may lie in their ability to provide more self-relevant information to users than they would generally have access to (Friedrich et al., 2018). For example, a fitness band may provide users with information about their body and their behaviour, like the number of steps they walk daily, their heart rate, etc. The mere availability of such information may enhance their autonomy by helping them make better informed decisions about their fitness. However, this argument is valid only when the information is comprehensible, and it does not confuse or debilitate the user, in which case it may actually undermine their autonomy (Friedrich et al., 2018).

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[1] https://www.inc.com/jeremy-goldman/6-apps-to-stop-your-smartphone-addiction.html

Lastly, there may be situations or scenarios in which even coercion may be deemed ethically appropriate, subject to certain conditions. There are vehicles which are programmed to not start or sound a loud, annoying alarm unless the driver is wearing a seatbelt. In the wake of the recent COVID-19 spread, cab companies have built facial monitoring systems to ensure that drivers wear face masks[2] and the same could be monitored, say, at the beginning of every ride. In such contexts, these surveillance systems do not merely remain persuasive, they become coercive. However, they are designed to function for the collective good by restricting individual freedoms. It is argued here that such designs need democratic procedures of acceptance to prevent them from becoming overly paternalistic or excessively punitive (Verbeek, 2009).

4 THE BAD

In the last three decades, with the way the information economy has evolved, persuasive technologies have become integrated into several economic products and services, such as social media, e-commerce and financial systems. There is an inherent conflict of interest between monetization and beneficence. This conflict has led to private companies making implicit value and outcome trade-offs on behalf of the users, without their awareness or informed consent. Even when users endorse the intended functional outcome of a technology, they may not be aware of the costs, undermining their autonomy, or their decision to adopt the technology may be reflective of a lack of freedom because of a lack of acceptable alternatives for the services that they seek.

Revisiting the case of a fitness band, which can enhance users' autonomy by providing them access to information they would otherwise not have. A user may voluntarily consent to the capture of data about their walking steps or heart rate to persuade themselves into following a fitness regimen. However, if a user is not aware that the product aggregates their data to target them with advertisements, or that the company which makes the fitness band engages in the commercial trade of their data, they lack the relevant information to make an informed choice about the adoption of the fitness band. Such deliberate or indeliberate omission of the information about value trade-offs involved in the design of persuasive technologies undermines user autonomy.

Nagenborg (2014) discusses the trade-offs between macrosuasion and microsuasion. He argues that even when users consent to the 'macro' or the functional aspects of persuasive technologies, their autonomy may be undermined by the 'micro' aspects. For example, a technology may be designed to make users more dependent on the technology for achieving their goal, rather than enabling them to achieve it by themselves. This conflict between the endorsed functionality and possibly unethical microsuasive elements has also been demonstrated by Rughinis et al. (2016) for smoking cessation applications. In some technologies, this conflict may be a side effect or an unintended consequence of the functionality. However, it may also be intentional on the part of the persuading agents, because of the blurred boundaries between economic motives and motives of beneficence.

Consider the example of birthday reminder applications. These applications collect the birthday information of users' contacts to send them reminders for the same. Users may voluntarily adopt such a technology to compensate for their forgetfulness or their busy schedule. However, these applications do not explicitly verbalize the value trade-offs involved. In a social relationship, remembering a birthday is normally considered a signifier of personal importance or worth, not a task to be completed. The effort that goes into remembering a birthday is what might make the exercise valuable in the first place, not the actual accomplishment. Therefore, even if this form of surveillance-based persuasion can achieve a desirable outcome, the outcome loses its intrinsic value because of technology. The technology itself might have persuasive functionalities other than the birthday reminders. It may persuade users to purchase a gift from a specific website in exchange for a portion of the profits. This functionality may be integral for the economic survival of the company which makes the application, but it is not a functionality that the user has consented to.

There are many such examples of technologies which mis-represent or completely omit information about the privacy, value and outcome trade-offs involved in surveillance-based persuasion during the process of technology adoption. The conflict between the designers' economic incentives and the users' authentic goals has led to the creation of many technologies which have been normalized into acceptance without the informed consent of the user. The evolving information economy has also made

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2 https://techcrunch.com/2020/05/07/uber-may-use-its-selfie-tech-to-verify-drivers-are-wearing-masks/

these value trade-offs impossible to avoid. Most technologies available in the market require users to make value trade-offs even if they explicitly wish to avoid them, restricting their freedom of choice.

5 THE UGLY

The ugly side of surveillance-based persuasion involves technologies that the users are not aware of, whose primary intentions they do not endorse, or that they have been coerced into adopting. Severe negative effects on individuals or society also constitute the ugly side of these technologies. These conditions can be illustrated with the following examples, along with how they impact human freedom, autonomy and dignity.

When news reports surfaced about the Facebook advertisement engine being used to influence the 2016 presidential elections in the United States[3], they brought the harms of surveillance-based persuasion at the forefront of public discourse. The personal data of voters was allegedly used to build their psychological profiles and target their vulnerabilities to influence their voting behaviour through advertisements sabotaging a particular candidate. The users were unaware of this intervention, and it is reasonable to assume that they would not reflectively endorse its intentions. This case became the focal point of public discourse on surveillance-based persuasion, not least because the effects of this technology were analysed to be severely damaging for election integrity, which lies at the heart of the democratic process. This kind of stealth deployment of technology without user awareness and endorsement seriously undermines human autonomy (Burkell & Regan, 2019).

As discussed in Section 4, the boundaries between motives of monetization and beneficence are blurring. When economic motives are taken to the extreme, it is possible for beneficence to be treated as a fortunate by-product of a technology, not the primary intended outcome. With the rise of pervasive computing, it has become extremely easy to bundle persuasive technologies that have negative consequences with valuable products and services, bypassing awareness and consent altogether. Pervasive computing has normalized surveillance-based persuasion as a part of digital economic activity. There is a thin line between what constitutes service from a product (that the user has consented to) and what constitutes persuasion that

the user has grudgingly accepted to live with. For example, the primary revenue sources of many digital products such as social media, video streaming, e-commerce and search engines are surveillance-based persuasive technologies (advertisement and recommendation engines). There are little or no mechanisms to bypass this surveillance, even if the user is willing to pay for the cost of service, restricting their freedom of choice. Avoiding these services altogether may impose significant social costs on users. In these and similar cases, surveillance-based persuasion is not a business model, it is *the* business model.

The monetization of persuasive technologies has begun to enter the dangerous territory of coercive adoption, in which individuals have no choice but to accept these technologies as a part of significant social systems such as employment, banking, insurance, health and education (Timmer et al., 2015). Reconsider the case of a fitness band or an application which monitors the number of steps a user takes, motivating them to complete their voluntarily pre-set daily exercise goals. Imagine that this data, along with some other predetermined metrics for positive fitness behaviour, is linked to health insurance premiums. This economic arrangement is initially popularized into acceptance by claiming that this system incentivizes customers who put an effort into their fitness. This technological application, which has begun to be implemented by some companies[4], has significant problems that remain unaddressed by design or policy. It is not difficult to understand how a design which incentivizes a specific fitness goal punishes users who do not wish to live by that goal, or simply do not wish to externalize their motivation. Fitness is, for a significant number of people, a personal endeavour for wellness which they may not wish to monetize or even capture. So, if a person refuses to share their data with their insurance company, they are punished not for a lack of motivation towards their health and fitness, but for a lack of a desire to capture and share it. Such an economic arrangement also threatens to push society towards a paternalistic template for what healthy behaviour constitutes, reducing the incentives for non-quantifiable or unmonitored fitness behaviours. This template may be insensitive towards demographic factors or user vulnerabilities, such as gender, race, occupation or literacy (Jacobs, 2019). It may not have enough room for individual

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[3]   https://www.theguardian.com/news/series/cambridge-analytica-files

[4]   https://www.theverge.com/2018/9/26/17905390/john-hancock-life-insurance-fitness-tracker-wearables-science-health

manoeuvres in terms of letting people decide what constitutes fitness for their own bodies. In short, this economic arrangement is coercive by design.

These coercive technologies mediating arrangements between users and private companies (and even governments) are being widely developed in multiple industries. Theoretically, it could be possible to coercively monitor vehicle drivers if they wish to purchase vehicle insurance, universities could make it mandatory for students to be monitored for their health through physiological sensors, employers could deploy eye and gait recognition cameras in the workplace to monitor employees' laziness or distracted behaviour and link it with their salaries, medical insurance could require for patients to track their medicine intake through medication adherence systems (Jacobs, 2019; Lupton, 2012), and governments could track citizen behaviour through facial recognition systems. As of now, even though these technologies are being marketed as voluntary, it is not difficult to imagine them stepping into the zone of mandatory, changing the social and economic order to be more conducive towards compliance and less towards freedom, even if it is the freedom to be wrong, lazy, distracted or unhealthy.

6 DISCUSSION

In the previous sections, the paper discussed the positive and negative aspects of surveillance-based persuasive technologies. Persuasive technologies can prove to be beneficial, especially when they are voluntarily adopted by users to pursue their authentic goals. However, they can be ethically problematic when they undermine human autonomy and freedom through misrepresentation or omission of value trade-offs, or when they are coercive, excessively paternalistic and punitive. In this section, the authors have surmised certain suggestions which emerged from the above discussions to make the design of persuasive technologies conducive to autonomous decision making and freedom of choice for the users. Some of these suggestions have also emerged from previous literature, such as in the discussion by Jacobs (2019) on the ethical design of persuasive technologies for vulnerable populations. These suggestions support the authors' argument for the need of an ethical approach to the design of persuasive technologies. They are meant to aid the design process with explicit consideration of the ethical factors which pertain to human autonomy.

6.1 Surveillance Awareness

Users are often not aware that they are in a persuasive digital environment in which their behaviour is under surveillance. This lack of awareness is widely prevalent on the web, and what may be partially responsible for this phenomenon is a complete lack of information, cues or indicators to communicate this knowledge explicitly within the persuasive environment. Instead, this information is typically embedded in the long, vague legalese in terms and conditions of service, which most users do not read (Obar & Oeldorf-Hirsch, 2020). There is an ethical obligation for persuasive surveillance technologies to create an awareness of their existence in digital and smart environments. Failure to do so undermines users' autonomy by depriving them of the information required to give consent for any persuasive interactions.

6.2 Minimal Surveillance

From the perspective of surveillance ethics, a straightforward suggestion that emerges is that of minimal surveillance. In privacy literature, this is known as the data minimization principle (Alshammari & Simpson, 2017), which proposes to minimize the types of data that a technology can collect based on its purpose or function. Persuasive technologies should ethically collect only as much data as is required to achieve the objectives that the user has voluntarily endorsed. When users typically adopt persuasive technologies, it is not in their capacity to analyse whether all the data that the technology claims to collect for an objective is indeed required from a technological perspective. Users tend to voluntary endorse the intentions of technology, not the individual parameters of surveillance. With the complexity of technologies increasing drastically, it should not even be expected of the users to understand this complexity. However, it is reasonable to assume that the users would not consent for the surveillance of information that does not contribute to the fulfilment of their endorsed objectives. Therefore, the data minimization principle is relevant to users' autonomy in the adoption of persuasive technologies. For technologies which collect additional data for the purposes of system monetization, this distinction needs to be made clear during the process of technology adoption, as discussed further in Section 6.3.

6.3 Intention Disclosure

While users may consent to surveillance in exchange for a free service, they may not always be aware or knowledgeable of the intentions behind such surveillance. Revisiting the case of the United States elections discussed in Section 5, at least some users might have been aware of Facebook's surveillance practices before the election scandal news reports surfaced. However, despite their consent to surveillance in exchange for a free account on Facebook, they had not consented for their data being used to be targeted as voters. In privacy literature, this is covered under the 'purpose limitation' principle (Forgó et al., 2017), which states that users' data cannot be processed for purposes beyond those disclosed at the time of data collection. It is argued here that the purpose limitation principle also holds relevance for users' autonomy because it encompasses the element of intention disclosure, which constitutes any user's voluntary consent to being persuaded.

6.4 Foreseeable Side Effects Disclosure

It is almost inevitable for persuasive technologies to have consequences other than those primarily intended by design. The birthday reminder applications discussed in Section 4 may not only contribute to an increased remembrance of birthdays with the help of technology (intended) but also to the increased forgetfulness of birthdays without the help of technology (unintended side effect). It has been argued previously that designers should be held ethically responsible for the predictably unintended consequences of technology (Berdichevsky & Neuenschwander, 1999). In an extension of this suggestion, it is argued here that if any such foreseeable or predictable side effects are known to designers or businesses, they need to be disclosed during the process of persuasive technology adoption. Foreseeable consequences are not just relevant to the concept of ethical responsibility but also to the autonomous decision of technology adoption by its users. To enhance the autonomy of users, designers and businesses need to make these trade-offs explicitly known.

6.5 Freedom to Opt-out

In Section 5, the integration of persuasive technologies with significant social and economic systems was discussed. This integration has already materialized in the case of services like social media, video streaming and e-commerce, where surveillance for advertisements and recommendations is the only form of economic exchange available to users. This form of surveillance is coercive in a society in which opting out of these systems carries a significant social cost. It is argued here that no social and economic systems should be surveillance-based by design. Each technology, product or socio-economic system should provide users with the freedom to opt-out of surveillance-based persuasion at a fair cost.

6.6 Democratic Coercion

It was discussed in Section 3, that in rarest of circumstances, even surveillance-based coercion may be justified in the interest of public good. However, any coercive technologies, especially those that are punitive by design, need to be defended through the democratic process (Verbeek, 2009). Therefore, contrary to popular market opinion, economic systems like fitness information based health insurance premiums should not be allowed to operate without significant public and policy discourse. They punish users who do not wish for their privacy to be intruded with higher insurance costs, severely infringing upon their freedom without any reasonable justification of the public good.

7 CONCLUSIONS

This paper discussed the ethical concerns about human autonomy and freedom in the context of surveillance-based persuasive technologies. Autonomy and freedom are highly valued ideals in modern societies, making it necessary to investigate the implications of rapidly evolving persuasive technologies on human autonomy and freedom. Persuasive technologies have the potential to enhance human autonomy by providing users access to new information and by helping them overcome biases in their own judgment. With the voluntary use of persuasive technologies such as fitness bands or technologies designed to help quit smoking, users can work towards their own authentic goals. On the other hand, the paper also discussed how persuasive technologies can undermine users' autonomy through practices like covert surveillance, not providing relevant information about value trade-offs and omitting knowledge about their vested interests in the persuasive interaction. Moreover, when surveillance-based persuasion is integrated into socio-economic systems, it can become punitive and coercive, severely infringing upon people's freedom. Coercive

surveillance values compliance over freedom, and it undermines human dignity.

In light of these concerns, this paper has argued for designers and businesses to employ an ethical approach to persuasion design. The arguments provided in this paper can help design technologies in a manner more conducive to autonomous decision making and freedom of choice for the users. The proposed ethical arguments include the principle of minimal surveillance and an explicit creation of awareness mechanisms such that the users have real-time awareness of being under surveillance. Other arguments include the explicit disclosure of the intentions by the persuasive technology as well as the disclosure of its side effects or foreseeable unintended consequences. For technologies bordering on the coercive, the paper suggests that digital products always provide users with the freedom to opt-out of persuasion, and that a democratic process is used for coercive technologies being integrated into significant socio-economic systems.

The aim of this paper was to highlight that surveillance-based persuasive technologies can be used to both enhance human autonomy and freedom or to reduce it. The long-term social consequences of these technologies will significantly depend upon how they are integrated into socio-economic systems and how policymakers design technology policies with explicit consideration for these factors. There is a potential for misuse of these technologies, which can be used by private companies as well as governments to create power imbalances and to evoke compliance from their users, clients, employees or citizens. Therefore, there is a need for designers to take an ethical approach to technology design, as well as for policymakers to incorporate these insights into emerging policies in the domain.

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