Point of View

Ethics in Online Collaborative Platforms and Sociotechnical System Design: Definitions, Models, and Perspectives

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New computer technologies and virtual social systems have caused an uproar in several fields of study, such as social sciences, philosophy, politics, nanotechnology, and bioethics. The design of technological products and services has rapidly increased, going from virtual communities to collaborative platforms. Their development and use do not necessarily include any transparent ethical or legal framework. We have encountered significant issues regarding easily cracked computer technologies, endangering many lives, causing loss of privacy, and financial loss. Many studies have highlighted the moral and ethical issues related to using and designing information and communications technologies. Some online platform architectures contain embedded algorithms that promote racism, racial profiling, social inequities, hate speech and could become detrimental to democracy. It is also worth mentioning that most software design contains security flaws that require constant updates, sempiternal revisions, and patches. Some previous attempts were to create suitable rules for utilizing sociotechnical systems and collaborative platforms to establish codes of conduct to regulate their design and use. With the convergence of technology, it becomes more urgent to find a way to design online platforms where several entities (organizations and individuals) can collaborate independently and responsibly on-site in their respective spheres on social projects. This paper aims to provide different perspectives and lines of thought for responsible and safe virtual socio systems and collaborative technology platforms.

Keywords: collaborative technology, social system, computing, ethical norms, accountability, privacy, creativity, ethics, value.

Introduction

Computer technologies and sociotechnical systems are shaping our world. According to Tavani (2004; 2012), with the unparalleled technological convergence, we are witnessing

a revolution in social affairs that we would otherwise never have been able to predict in the 1980s, generating concerns at the professional, social, and ethical levels. Considerable arguments have emphasized that this revolution has become one of the main challenges of information and communications technology design. The problem is quite severe as we conduct most of our banking, civic, and social engagement through computers. Furthermore, communications and information systems have become part of our lives as they become instrumental to developing communities and collectivities and filling the digital divide. The communities now rely on virtual social systems and collaborative platforms to share information and knowledge and facilitate a participative innovation culture. Therefore, collaborative platforms and sociotechnical systems have increased exponentially, extending across different fields such as business, commerce, education, health, and social and political spheres. This emergence of social informatics permeates our daily lives, invades all aspects of our lives, and has drastically changed how we do things to the extent that we can no longer live without them.

These social systems emerged spontaneously without any well-thought-out policies for their management (Kizza, 2007; see also Quinn, 2006). "Computer networks have turned the world into a "global village." Information is transferred through radio waves and other waves and other means that reduce national borders to a meaningless concept" (Oz, 1994, p. 19). More troubling is that computer technology and cyberspace have also turned the world into a jungle where anyone can steal intellectual content, post fake news, invade privacy, and hack into computers, manipulating data without taking responsibility for their actions. As Oz (1994) points out, in that "new global village," any computer connected to a network is technically accessible by anyone who has access to a computer connected to the web (p. 22). According to Moor (cited by Tavani (2012), increasingly collaborative design platforms and sociotechnical systems are engineered to provide new possibilities for limitless human actions. In turn, it produces "policy vacuums" as there are no explicit policies or laws to manage or direct the recent choices made possible by computer technology (p. 12-13).

Furthermore, the virtual collaborative platforms and social systems designed to enhance humans and facilitate the social appropriation of emerging technologies have turned into something dreadful. Of particular concern is how some users have used social systems and cyberspace to conduct illicit activities with impunity. Among these activities are hacking, bullying, sabotage, invasion of citizens' privacy, to name a few (Lauriol & Mesure, 2003). The Information Technology (IT) professionals conduct questionable activities as well. For instance, they can install Spywares onto people's computers without their knowledge; they also believe they can afford to do anything such as peeping without consequences. Meanwhile, the designers of these innovative technologies continue to engineer them without any regulation, regardless that most of these designs are flawed. In our view, whether it is a virtual community or a collaborative platform, any social system that is poorly managed, poorly constructed, and devoid of ethical norms can give rise to cyber-related crimes or transgressions. These reasons validate the need to develop ethical standards in computer technology and social system design and usage. Therefore, what kind of policies do we need to fill these social systems' ethical and governance vacuums? Who will implement them and, in case of misconduct, reinforce them? However, it is merely impossible to regulate these platforms, given their condition of ever-changing states.

The purpose of this paper is to stimulate reflection on the ethical issues and governance in sociotechnical systems and collaborative information technologies, which have given

life to unreasonable forms of action. We also reflect on regulating collaborative technologies to prevent misuse and abuse while suggesting some avenues and recommendations.

Ethical Issues for Collaborative Platform Design

> All information systems have one weak link: people. As long as human beings are users, developers, and administrators of these systems, we cannot dismiss the possibility of someone utilizing their capabilities to harm. Thus, not only technological safeguards but ethical guidance is needed.
> Dr. Ramon C. Barquin[1], President of Computer Ethics Institute

Before the preponderance of social systems, Philosopher Vilém Flusser (1993) pleaded for the integration of ethic codes in the design of collaborative platforms to meet the normative structure of science in his work on the word design. In the beginning, the ethical standards would promote and maintain social systems' integrity and prevent mistakes. In other words, they would encourage knowledge and truth; prohibit the fabrication, falsification, or distortion of research data; and avoid mistakes. Furthermore, collaborative platforms provide research support, which often involves cooperation and coordination between people from different disciplines and institutions to discuss the moral issues emanating from system design. Ethical standards remain an essential tool for promoting critical values for collaborative work, such as trust, accountability, mutual respect, and fairness (Churchman, 1971; Checkland, 1976, 1981). However, we are past the Internet era; we are bombarded with virtual platforms and artificial intelligence that can make life easier and help with processing information. Everything we used to do ourselves is done via machines, remotely. The machines that use algorithms, codes, analytical models, and predictive analysis to assess information and manage decisions, rule worldwide.

In *Automating Inequality*, Eubanks (2017) found that the digital age has drastically changed how we make decisions, whether in politics, finance, health, social services, and even jobs, mortgages. Previously, the decision-makers were human beings who acted like computers, yet they could still use human discretion. However, nowadays, much of these decisions have been delegated to sophisticated machines. "Automated eligibility systems, ranking algorithms, and predictive risk models control which neighborhoods get policed, which families attain needed resources, who is short-listed for employment, and who is investigated for fraud" (p. 3). Having said this, the algorithms that target people through filtering programs; how do they work, what is screened? If there is a technical error or a few missing digits, how does it get rectified? She argues that the enmeshment of automation within service social punishes the poor confining them to an inescapable state of poverty. She claims that the data collected by the government contribute to worsening inequality instead of eliminating poverty. Considerable arguments have emphasized that this revolution has become one of the main challenges of information and communications technology design.

In the opinion of Eubanks, we are entangled in a digital world surrounded by information sentries visible and invisible. They collect our information and know all about our habits,

[1] Cited by Paul de Groot, "Bits and Bytes: needs for computer ethics prompts "thou shall not," in The Edmonton Journal, published on July 30, 1992, page D13

where we live, the community history. They know about the product we attempt to buy, the websites we visited, our finances, and our life history, which can sometimes raise reg flag or trigger an investigation. The information that they collect allows them to monitor our access to resources and even make assumptions about our behavior. We are constantly being watched so much that every little device we use can give away information about us. For instance, our cell phones contain codes that register our global positioning. We have police drones that fly over political protests. Algorithms, "the invisible pieces of code," as she calls them, have permeated our social media interactions, platforms, public institutions, and social services to such an extent that they have become integral parts of our community and our way of life (2017, p. 5).

Online collaborative platforms and social systems designed to enhance humans and facilitate the social appropriation of emerging technologies have turned into something dreadful. The reason is that people are the target of algorithms. They know that they are being watched, but they do not know to what extent. The surveillance conveys a "sense of a pattern in the digital noise, an electronic eye turned toward you, but you cannot put your finger on exactly what is amiss" (Eubanks, 2017, p. 5). According to Eubanks, so far, no legislation compels companies to release data they have on us, apart from credit reporting. We know that specific algorithms, equations, and models shape our life chances; however, we have limited access to them (2017, p. 5).

Noble (2018), in her work, "Algorithms of Oppression: How Search Engines Reinforce Racism," argues that the online platforms are designed to reflect the value of the dominant power and have turned into tools that promote discriminatory practices, pervasive racism; a machine of oppression that serves the purpose of the people they benefit. She claims that technology systems can discriminate as certain complex decisions are being made without being transparent. Whenever online practices appear as abuse or some type of marginalization, it is downplayed as a system glitch. The main challenge is how to develop AI / AS Platforms that are accountable, transparent, and do not infringe on fundamental freedoms and unbiased.

Pasquale, Professor of Law at the University of Maryland, and author of the Black Box Society (2015), states that we are no longer in the early stage of the Internet. Rules govern these spaces (online spaces or virtual platforms): the algorithms; however, the governance is implemented without transparency in a close circle that excludes the public and outsiders. Human activities are managed in the systems that manipulate them with broad social implications. From her part, Eubanks (2017) observes that most people subjected to digital examination are not targeted as individuals but rather as members of social groups who are mainly disadvantaged. These groups include migrants, the poor, sexual minorities, and other oppressed and marginalized groups who face much more scrutiny than privileged groups when they need public assistance. They must provide much more information than other groups. Eubanks also points out that, generally, these groups are not aware that they are being monitored or targeted. The data collected against them are used to emphasize their marginality, put them under extra scrutiny, or make them subject to heavy suspicion. "Those groups seen as undeserving are singled out for punitive public policy and more intense surveillance, and the cycle begins again. It is a kind of collective red-flagging, a feedback loop of injustice" (2017, p. 7). Most of the time, the data collected are not aligned with the objectives or policies of the platform; they are collected for the simple reason of spying on people in the United States. Computerized algorithms have taken over humans and social services with little or no political debate on their

implications and how they affect marginalized groups (Eubanks 2017 and 2015; Shneiderman, 2016).

In the same line of thought, Pasquale (2015), criticize the rise of big data, predictive analytic, and the impunity of computerized algorithms deeply normalized in the user experience online and the Internet. The author claims that the uses of algorithms are not transparent in many critical sectors such as finance and media. Giant corporations such as Facebook and Google use algorithms to further their interest unbeknownst to the users either by law or because outsiders can not be privy. In his view, algorithmic modeling interfaces may be biased or limited. In this case, how accurate or appropriate are they?

Many professional associations in the information field and many designers of collaborative platforms have attempted to incorporate codes of ethics in these platforms. However, the decision-making and challenges related to information sources, services, and the management of these platforms become significant sources of discussion regarding the impact on social communication and civil society. Of particular concern is, to what extent are the ethics policies, the models for ethical decision-making, and the governance systems unbiased?

When creating collaborative networks, designers should adhere to appropriate norms and regulations that prevent misuse and security breaches. They should also create a governance system and conditions that would prevent misuse from users. However, when designing Artificial Intelligence and online platforms, there is a lack of transparency in terms of norms ideal and practical applications. There is a whole gray area around the rules and norms around the designers and the users. For instance, which organizations oversee the administration of these rules? Finally, there are some suggestions for regulating the design and use of cybertechnologies in the guise of declarations, obligations, and constraints. In the event of a transgression, which legal authority would strengthen the sanctions?

The Challenges in Establishing Ethical Ground for Online Collaborative Systems

Banathy (1971) and Checkland (1990) affirm that human systems have become networks of problems. They argue that collaborating with them involves dealing with problematic situations that constitute a system of issues rather than a collection of problems. These problems are embedded in uncertainty and require subjective interpretation. Therefore, we must consider the personal elements that include examining the sources of knowledge, social practice, community, interest, and ideas commitment, particularly moral idea, affectivity, and faith. We must also acknowledge that individuals/social systems are boundless. Besides, these problems are increasingly specific and refer to more general issues. Finally, many factors are intertwined, making it impossible to find solutions using linear or sequential methods (Checkland 1980; Churchman, 1970; Rittel & Webber, 1984). In Pasquale's view (2016), "Although the Policymakers attempt to address these issues, they face two major obstacles. First, how can regulators apply expert judgment given rapidly changing technology and business practices? Second, when is human

review essential-and when will controversies over one algorithmic ordering merely result in a second computational analysis of a contested matter?"[2]

From Harvey's perspective (2014), "the ethics of communicative design refers to the standards to which designers and multiple stakeholders decide to adhere to learn to live together and make critical collective decisions for the future of rising generations" (p. 435). Therefore, many adjustments and adaptations are necessary to meet the environment's standards, the system's culture, the actors' objectives, and intentions. We also find that systems adapting to environmental changes have been ongoing; adaptation is not always sufficient because the entire system can suddenly change. Therefore, the process of change through co-creation and co-evolution between systems and their environment becomes a mutual and recursive phenomenon. Artificial and natural social systems are nothing more than systems of human activity based on human perceptions; in other words, they are systems within which the individual is free to attribute a meaning to it. In this case, there can never be a single testable activity, but rather a set of possible accounts based on the peculiarities of the *Weltanschauung*, claims Checkland (1990) in the *Soft Systems Methodology*. The author maintains that human social activities are composed of people engaged in processing information, making plans, scripting, monitoring performance, and much more. However, how will platforms regulate free speech and misinformation, conspiracy theories, and extremist content?

Like many online social platforms, Facebook claims to have created a safe environment where users interact and have a voice; according to the company, they have also provided the conditions by which everyone feels comfortable to express themselves safely, with privacy, dignity, and authenticity. They have embedded a transparency center with a clear definition of the standards and their enforcement. Conforming to their safety objectives, they have embedded Artificial Intelligence and human reviewers to monitor "violence and criminal behavior, users' safety, objectionable contents such as hate speech, adult nudity, and sexual activity, integrity, and authenticity, respecting intellectual property, and content-related request and decisions such as additional protection of minors. In addition, Facebook collaborates with local laws and receives reports from governments and courts as well as non-government entities (Facebook community and NGOs). When there is an infringement of the term of use of the platform, Facebook can delete the content. They may also decide to restrict contents in certain countries where it is deemed illegal. The restrictions apply to products and content types such as Album, comment, Page and groups, Post, Profile, and event[3]. However, Facebook faces some harsh criticism in terms of its regulation and management.

The critics formulated against Facebook are that its digital space is too vast, making it impossible to manage and control it and prevent possible harmful implicit in its technology. The foremost critic is that so far, Facebook has not taken a very responsible approach to preventing toxic speech propaganda and misinformation from being delivered to millions of people. Only recently, Facebook began to acknowledge that its platform displayed harmful information and attempted to address the harms done. However, according to Sullivan (2020), they implemented corrective measures in moderation by a small army of reviewers, so much so that the perpetrators of the harmful

[2] Retrieved November 2, 2021 from https://www.lse.ac.uk/lse-player?id=3350
[3] https://transparency.fb.com/

find new ways to avoid detection (Sullivan, 2020), which explain why AI is not enough to keep the harmful content away.

Nevertheless, a data scientist, Frances Haugen, a former Facebook employee, came forward and accused Facebook of valuing profit over people and that the platform only sought to maximize profits. Haugen claims that, "there is no will at the top to make sure these systems are run in an adequately safe way." (…). "Until we bring in a counterweight, these things will be operated for the shareholders' interest and not the public interest" (Waterson & Milmo, 2021; Ferris, 2021). She maintains that Facebook needs to be held responsible for the content published on its platforms. Because they coded algorithms to direct users to the extreme content that bad actors usually generate. Facebook barely attempts to protect users from harmful content that can lead to a political division, alienation, addiction, and mental health issue. She also mentioned that Facebook knew that its platforms had negative impacts on children's health. Yet, they chose to ignore it. Haugen urged senators to make Mark Zuckerberg, the Chief Executive of Facebook, accountable for the misinformation promoted by the company's algorithms and make the regulatory changes needed to address several issues identified on the social platforms.

Haugen's testimony has confirmed that the architecture of social media platforms can promote controversial or shocking content. The whole question is to regulate the social platforms and their performance. According to some researchers and social organizations, in the case of Facebook, its dismantlement appears to be the simplest and fastest solution. However, this will not solve the issue of platforms' regulation. In the United States, after debating so long on social media platforms' regulation, there has finally been some controversial approach to its regulation. For instance, what constitutes a violation? What is hate speech? What is freedom of expression? For example, on January 6, 2021, Twitter decided to kick former President Trump off Twitter. Was it an infringement upon his freedom of expression?

The recent events surrounding Facebook's platform demonstrate the challenge in establishing ethical grounds for online social platforms, especially when their orientation is unclear and confusing the public. Some experts suggested that they create an organization that will oversee the major platform companies. However, social platforms are constantly evolving; setting a rigid and sclerotic regulatory process is impossible (Jackson, 2021). Nevertheless, they are ways to respond to the ethical challenges constantly present in social platforms, considered human systems.

Ackoff and Emery (1972) suggest classifying the human system as systems that have determined deliberate parts of larger conscious systems. His hypothesis allowed him to identify three fundamental functions of the systems: designing and managing human systems to serve their purpose efficiently and effectively, motivating parties and individuals in the system, and eventually applying it to the entire system. These functions use three concepts named by Checkland (1990), namely self-management, humanization, and environmental organization. If human systems are to evolve constantly, then self-organization alone could not respond to this constant process. Therefore, it requires that we add other values such as adaptation, self-transcendence, and creativity to force the human system to go beyond its borders. In this case, creation becomes the central pivot at the heart of evolution by motivating users' participation and ensuring social systems' survival. According to the CyberPeace Institute (2021), although some instruments and principles hold actors accountable, they are usually voluntary non-binding due to a

general reluctance to apply legal and normative frameworks. Closing the accountability gap implies more than attribution alone. It also involves identifying the roles and responsibilities of all stakeholders involved and the applicable laws, norms, and principles required to ensure security, dignity, and equity in cyberspace.

Consequently, in virtual social systems, a very structured and well-defined approach is needed to solve problems, considering the initial conditions, the objectives, and the necessary specific operations. Finally, poorly defined, or structured systems from the beginning will require other types of procedures: Implementing security-by-design, reporting vulnerabilities, especially those in critical infrastructure (CyperPeace Institute 2021). Therefore, to find solutions to their problems, they must be well structured. Moreover, since most social issues are inherently complicated, the solutions proposed may only be temporary and incomplete (Mumford, 1983).

Ultimately, when designing Collaborative virtual systems, Harvey (2014) found that ethical and safety standards must be part of the risk assessment from a cultural and national perspective; there are no international conventions to date. In designing these norms, what values should we consider? In their analysis of social systems, several researchers emphasize the need to include the government, the industrial sectors, and academia in the design of social networks; they have shortcomings in users' and stakeholders' accountability within these social systems. Churchman (1971, 1968) is among those who preach those social systems should be value-oriented and guided by the social imperative showing the subordination of technological efficiency to social efficiency. Churchman has admitted that we need a theory of design centered on ethical systems that convey a morality applicable to all social systems, which we could evaluate. For now, only the science of values and the development of methods make it possible to verify ethical judgments.

Flusser and Cullars (1995) and Hoven (2007) have reminded us that designers and computer specialists would also have to respond to ethical obligations (imperatives) and adopt a moral stance on the development of sociotechnical systems. When designing software, they would prioritize their technical object's security/safety and reliability. They should also focus on ethical considerations and actively remember the main reason for developing these systems (Romm, 2006). On the other hand, they must also question the software's final orientation and ponder whether users and designers will use it for the greater good or harm humankind. In this regard, the IEEE Global Initiative on Ethics of Autonomous and Intelligent Systems (2019) suggested creating ethically aligned designs to enhance and extend human wellbeing and freedom values (p. 8). Many observations or investigations have led us to believe that technologies are misused most of the time. These misused activities include government control, dissemination of confidential data, software piracy, data collection and manipulation, electronic monitory, invasion of privacy, hacking, service theft, and more. As social networks become essential tools for governments and businesses, the power of machines also continues to grow to the extent of robbing us of our privacy. For instance, in the USA, a new digital tool to manage poverty, automated eligibility, discourages the poor and the working-class people from seeking public resources that they need to thrive and survive. The government uses complex integrated databases to collect their personal information without offering them anything in return. Their situation places them on the radar of law enforcement, neighborhood surveillance, and social services. They watch their every move, their behavior which are collected for government, commercial and public scrutiny (Eubanks, 2017, p. 11). For all these reasons, we must integrate moral values and ethics-technical

standards in the context of software development, sociotechnical systems, and social network design.

Ermann (1990) stresses that there is nothing inherent in computers that can cause loss of intimacy and privacy other than the actions of technology experts, computer "designers," or network designers. However, any system needs governance to survive in that every society relies on values, codes of conduct, and norms to sustain itself. These codes of conduct are general laws that reflect most the skilled population's moral values. The ethical principles that define rights and wrongs are generally culturally specific. The ones that allow us to discern right from wrong and be responsible for our actions are at the core of the ethical behavior standards that we need to function in social systems. Since these experts in computer technology can create programs that can encroach on our lives, it becomes imperative to develop an ethical framework and a catalog of standards and identify standard principles in systems design. Such regulations and standards should protect users against privacy breaches and promote better use of the technologies. They should also support or promote the initiatives of users and stakeholders of these systems for more equity. How would we define the ethics of social-technical systems when it turns out to be such a problematic notion?

We also reflect on ethical issues, governance, and the user and designer's responsibility to prevent social systems' structural problems. Moreover, according to Kizza (2007), although some experts have tried to find a viable solution to prevent cybercrimes, these crimes continue to multiply, creating more ethical dilemmas. The issues generated by the lack of security in computers and collaborative networks make these attempts very elusive due to our dependency on these networks. Meanwhile, society continues to fall prey to cybercriminals, frauds, vandals, and invasion of privacy. It is not surprising that Legrain (1993) and Papanek (2008) strongly recommend the development of norms and standards to support the use of information technologies. After all, to use Kizza's (2007) words, it is only through applying ethical standards that we will get there.

However, much research will object to the application of norms and moral principles in these creative spaces. Luhman[4] emphasizes that a society divided into functional systems must do without moral integrations at the heart of the argument. Similarly, Jonas (2006) claims that imposing ethical rules on social systems is like "prescribing oneself a tranquilizer under the name of ethics." They will only serve as a source of distraction to prevent a meaningful understanding of modern society with its different functional systems. Moreover, the author strongly suggests letting social systems develop without constraint if collaborative technologies become a scientific discipline because science requires autonomy and objectivity. Conversely, Flusser (1993) and Dallman (1998) stressed the necessity to have a code of ethics in social systems design and use that space to promote and maintain social systems' integrity. The ethical principles will advance knowledge and the truth, prohibiting the fabrication, falsification, and distortion of research data.

This analysis brings us back to our premise at the beginning: there is a moral deficiency in the use and apprehension of new collaborative technologies. Should we be alarmed when several authors point out a state of nature in the socio-technological domains? How

[4] Cited by Dallmann, H. (1998). *Niklas Luhmann's Systems Theory as a Challenge for Ethics. Ethical Theory and Moral Practice*, 1(1), 85-102. Retrieved November 2, 2021 from http://www.jstor.org/stable/27504013

can we improve the accountability and verifiability in the autonomous and intelligent system? How do we make sure that these automated systems, whether governmental or non-governmental, profitable or not, are respectful of individual rights? Furthermore, are the Artificial Intelligent systems designed to be accountable for the harm caused by these systems? Note that the actions taken on these collaborative platforms do not meet the sustainable reasoning criterion. In this case, can an ethical standard apply to social systems that resemble a jungle? Furthermore, to what extent will these rules not inhibit creativity, spontaneity? Do we need a new or unique ethic in collaborative platform design?

Governance and Accountability in Online Collaborative platforms

At the outset, for people to make sound technical decisions, they must learn to make the right ethical decisions.[5] Concerning ethics in design proposals, should a collaborative platform have one? What does this mean in practice? Is there a possibility that the design is misused or misdirected? Several reasons demonstrate the importance of applying ethical standards in collaborative platform design to protect users and designers. Harvey (2014) suggests issuing guidelines to protect copyright and patent policies, intellectual property interests, and data policy sharing. The problem is not to identify the merits of ethical standards but rather to discover how to apply them in a way that does not cripple creation (Wolgan, 2006; Dallmann, 1998). How can we ensure the recognition of users, researchers, designers, and collaborators for their contributions? How can we protect ideas and prevent their disclosure prematurely? More importantly, how can we make users accountable to the public? For example, how can we prevent users from posting data that may harm society or human beings?

Moore and Parker (1999) propose free arbitration of rational human beings based on logical argumentation. Jurgens Harbemas in *The Theory of Communicative Action* emphasizes that individuals interact using a standard moral code in which participants must respect each other as equal communicators. Since we know with certainty that human beings or social systems cannot survive without ethical standards, how can we prevent all kinds of abuse in social networks? More importantly, how to get people to adopt ethical standards? We should note that long before the preponderance of new information technologies, some research communities have anticipated the misuse of computers and the Internet and have pointed out the ethical issues that may arise. Therefore, many national bodies have published a moral code for their members to follow. For instance, in 1972, Computing Machinery's association drafted their code of Ethics and Professional Conduct, considered the oldest (Kizza, 1996, p. 88). Similarly, in 1990, the four United States-based computer societies agreed-upon ten ethical themes to serve as a driving guide or ethical behaviors for users, designers, and computer professionals facing ethical issues. These themes are:

> Personal integrity/competence, persona accountability for work, responsibility to employer/client; responsibility to the profession; confidentiality of information;

[5] Dolce, *Developing Online Computer Ethics*. Retrieved November 2, 2021 from https://edocs.uis.edu/kmill2/www/dolce/

> conflict of interest; dignity/worth of people; public safety, health, welfare; participation in education; increase public knowledge. (Kizza,1996, p. 89 - 90)

The four United States-based computer societies also grafted an international code to reflect cybertechnology's international and multicultural scope. They are "specific statement to social responsibility, certification standards for professionals, emphasis on quality of life, protection of intellectual property, consequences of networks, basic human rights, rights of the user, equity/respect for cultural diversity (Kizza, 1996, p.90)".

Furthermore, in June 2020, the IEEE, the professional organization dedicated to advancing technology for humanity's benefit, has made a series of recommendations to promote good ethical behavior within its members and the community they serve. The report recommends that every member recognizes the preponderance of technologies in the world and their impacts in the world must agree to conduct themselves with the highest ethical standards and:

> To uphold the highest standards of integrity, responsible behavior, and ethical conduct in professional activities.
> To treat all persons fairly and with respect, to avoid harassment or discrimination, and to avoid injuring others.
> To strive to ensure this code is upheld by colleagues and coworkers.[6]

Nevertheless, the stakes are too complex to be solved by simple rules or reports. Our natural constitution ensures that we act to satisfy our tendencies and aspirations in a state of nature while avoiding what Thomas Hobbes (1588-1679) calls aversion. We can always refer to a social contract model in collaborative platforms by relying on rules and laws "designed" to protect individuals from harm and injuries caused by other system members. Still,

> "an abundance of information and data may be decidedly useful in improving life, but it can be equally useful in lessening and even threatening our existence. An avalanche of details and facts may only push aside our moral perspectives; cause us to lose sight of our goals and become buried in routine and self-interest." (Dejoie and al, 1991, p. xi)

Moreover, many professional associations, government agencies, universities, and other influential organizations must comply with specific codes formulated in rules and policies relating to their operation. In a collaborative platform design, one must envision a multitude of ethical considerations. Namely, as designers of social systems and collaborative platforms, what are our values? Why do we "design"? Furthermore, what values do we incorporate into our designs and why (Alvarez et al (2016); Papanek, 2008)? We have only scratched the surface on the importance of using a collaborative platform for the time being. What are the ethical standards to promote and define? While exploring these ideas, we end up with a plethora of concepts related to the use of the platform. However, how good are these concepts, given the nature of these collaborative platforms?

Generally, choosing between what is the right and wrong thing to do is easy. Unfortunately, differentiating what is good or bad in social systems is not always that

[6] IEEE, Advancing Technology for humanity: Code of Ethics Retrieved November 2, 2021 from https://www.ieee.org/content/dam/ieee-org/ieee/web/org/about/corporate/ieee-code-of-ethics.pdf

simple. "Designers" are confronted with many ethical decisions every day, and most often, the answer is simple: the act must be morally right. For many "designers," being ethical is all about being honest and straightforward (Wilson 1984; see Churchman, 1974; Checkland 1990). Sometimes, it is challenging to decide the right thing; in this case, the moral code, based on reason and responsibility in society, may not suffice. When these situations occur with facts based on real-life issues, the answers may not be that simple. Therefore, it is crucial to promote standards and principles that allow users and designers to act appropriately and be accountable.

In sum, ethical standards remain an essential tool in promoting the values critical for collaborative work, such as trust, accountability, mutual respect, equity. For some reason, Oz (1994) seems to think, "Balancing the interests and rights of different parties in a free society is difficult. The problem of protecting individual privacy while satisfying legitimate government and business needs is typical of the information age. It seems that giving up some personal privacy is a toll we all have to pay now" (p. 70).

Nonetheless, there are other ways to solve moral dilemmas by understanding ethical truth, argues Michael C. McFarland [7]in Bowyer (1996). For McFarland, the likely alternative would be to resort to some metaethical principles that will allow us to end all ethical disputes. Although the methodology is not accurate, it can help distinguish the good moral arguments from the wrong ones, thus enabling us to choose. He suggests four conditions that apply to a valid ethical argument:

1. It must be consistent with the facts.
2. It must be reasonable and logically consistent.
3. It must be based on sound principles and uphold the highest good.
4. It must be universalizable. (Bowyer, 1996, p. 15).

For several other authors like Papanek (2008) and Bowyer (1996), ethics is an analytical study of Man's moral dilemmas in action. They believe that morality in the world of information technology barely contains norms except for a few codes or guides of conduct (implicit or explicit), based on long-term personal beliefs and values or those of the surrounding society. Nevertheless, from an ethical perspective, an individual act can be moral, immoral, or amoral.

- moral - an act or thought related to moral codes of society or based on a personal code;

- immoral - an act or thought that contravenes the moral codes of society or its principles;

- amoral - an act or belief that does not reflect choice based on moral codes.[8]

For many scholars (Dakin, 1996; see also Dajoie, 1991; Dallman, 1998), ethics includes accepting responsibility for our actions and their consequences. For others, it is only a set of moral criteria to which human activities must comply. In other words, "Ethics is a personal code of behavior. They represent an ideal we strive toward because we presume that to achieve ethical behavior is appropriate, honorable, and desirable --- both on a

[7] Michael C. McFarland is a professor of computer science at Boston College. He wrote, "Urgency of ethical standards intensifies in computer community" in Bowyer (1996).

[8] Victor Papanek (2008).

personal level and within the groups we belong to" (Dakin, 1996). Bernier (1985) formulated a more existentialist version, defines "Ethics as the science of social survival and then what is ethical promotes the survival of individuals and civilizations, cultures, and societies [9]."

Legrain (1993) further substituted social integration in place of technological ethics in social systems design. As solutions to the lack of rules in the social system, the author advanced that there must be a series of "coordinating mechanisms for action involving collective intelligence and ingenuity; public participation, to an ethics, rubbed with the taste of solidarity with a shared desire for conviviality" (1993, p. 424). Beck and Or (1990) suggest, from their end, a practical action founded on a pragmatic philosophy. They believe that designers of collaborative systems, the same as the users, need a coherent set of values and principles to justify acting. "They suggest that the effort to produce a cohesive system of the practical tenets, establish what needs to be to enable to live in conformity with them and show they can be directives of men's choices remains a significant intellectual activity" (1990, p. 415). It is essential to remind the users about their obligations and values regarding using a social system and sharing it with others. Moreover, more importantly, to think about our choices and commitments in this society and question ourselves about the type of action allowed. So far, there seems to be a consensus on the lack of transparency concerning the standards and norms that govern the online platforms and the artificial machine and on the fundamental principles that network users must adhere to for ethical purposes. There are no clear guidelines on the rights and responsibilities when using online collaborative platforms or designing them. Who will be responsible for protecting the privacy and personal data in the networks and within the social systems and against the giant corporations? Accountability looks more elusive than ever.

Conclusion

Could a robust accountability framework increase responsible behavior in cyberspace? When it comes to virtual collaborative systems design, ethical standards should be co-constructed by designers and users using a multidimensional and complex model. Most work shows that ethical or good governance rules are more user-centric than designer-oriented; we have realized that designers must be accountable for their actions. The CybersPace Institute (2016) suggested closing the accountability gap to secure the vulnerable communities by "identifying the roles and responsibilities of all stakeholders involved as well as the applicable laws, norms, and principles required to ensure security, dignity, and equity in cyberspace." They must also detect the weak spots and the origin of an attack (p. 82). Therefore, there would be a double contingency. First, we must identify and use technological standards to support the social network's construction. It is also necessary to create standards of conduct that promote the proper use of social systems by users and designers without infringing on their creative process. Schomberg (2007) is among those who feel that we need "an ethic of collective co-responsibility, where everyone has a personal moral obligation to engage in the collective debate that forms the context for collective decision-making" (p. 284). For Schomberg, "it is not only engineers who carry out social experiments; in a sense, all human beings are engineers as

[9] Bernier (1985) quoted by Dejoie and al, 1991, p. 57.

they are caught up in and engaged in the modern project" (p.284). Our research has uncovered that it takes an ethic of technical development and technological practices in a social system for proper regulations. In this case, to paraphrase Hoven (2007), these ethics of information technologies should allow both to open the "black box" of design and development of technologies and describe its rich and heterogeneous contents.

We also propose to ensure that the design does not become a generalized and fixed framework. Otherwise, it risks being reductive because one can end up with a single trend. We support creating platforms where communities and users can design their projects and manifest various voices or tendencies. Therefore, the framework must be adaptable and customizable. We also need to develop standards that will be used for the greater good and not influence the general users (Mumford, 1983). This observation takes us to the dilemma between the common good and individual good, which leads us to question the possible coexistence of the common good and self-interest. They both must coexist because if one dominates the other, problems may arise. Will people be free to create and innovate without being forced to choose between innovation and tradition? Will ethical and governance standards have an impact on how to design? Should all users adhere to a convention?

Up until now, according to CyberPeace Institute, "there is a lack of transparency in the norms and laws to hold threat actors accountable for actions; there are no transparent and independent mechanisms to track accountability in Cyberspace". Therefore, how to make users and designers accountable? There have been several attempts to set ethical standards to empower users and designers within social technology practices. Although researchers and designers have tried to make people accountable for their use of cyber technology through the governance of the Internet and management of social systems, we encounter some enormous deficiency in accountability in these technological structures, which remains unclear. Firstly, there are no legal instances to strengthen the rules in the event of a rule violation. Secondly,

> Whether it is regulation or self-regulation, the supervision of information technology practices is still ineffective. The very nature of the technologies gives us the impression that any attempt at regulation more seriously will not be followed closely given the global scale of the network and the differences of viewpoint between Europe and the United States. (Lauriol & Mesure, 2003, p. 102)

So far, online collaborative platforms and cyberspace remain the "most unregulated social experiment of our times" (Noble, 2018, p. 6). For the time being, many countries have found numerous ways to combat online criminal activities using algorithms and artificial intelligence to monitor and detect norms' infringements and crimes. However, this only gives the big companies and the government more significant interference in individuals' privacy. Moreover, those who misuse computer technologies will always find a way to bypass the system, which is why we must again appeal to reason, create a social contract in the information society, and renew faith in values in the process of collective choice. We must not create a police state in the sociotechnical systems but rather encourage users to participate in this cyberspace project, as they responsibly had in the 19th century, and regulate themselves through reasonable action.

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