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Artificial Intelligence: A Tale of Social Responsibility

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Abstract

Conversely to the legislation that struggles to develop, regulate and supervise the use of Artificial Intelligence (AI), the civil society, that gradually realizes the fundamental issues and perspectives induced by this new technology, slowly starts to take responsibility and to mobilize. Social responsibility expresses itself through the emergence of new voluntary standards that could integrate the concept of *social good* with the use of AI. More precisely, this paper proposes to develop three axes of tools for the social responsibility in AI, including stakeholder awareness, the integration of ethical and technical standards to induce good behaviors, and the incitement to a responsible AI.

Introduction

Novel technologies and especially Artificial Intelligence (AI) paradigms induce a massive interest from researchers across different domains, and raise questions and concerns. Indeed, some “*worries about the transformations and the possible destruction that could put in danger our world*” (Ganascia 2017; Krishnan 2016), while “*others, convinced of the inevitability of the upheavals to come, seek to influence the movement to make this future livable*” (Ganascia 2017). In fact, AI “*might be the most important transition of the next century either ushering in an unprecedented era of wealth and progress or heralding disaster*” (Wiblin 2017). The scientific community does not remain indifferent and warns AI-based systems users against the risks related to AI models and the manner that the models have been learned. For about ten years, experts warned that “*if research continues to advance without enough work going into the research problem of controlling such machines, catastrophic accidents are much more likely to occur*” (Wiblin 2017). These concerns are shared by the civil society (UNESCO 2018; Floridi et al. 2018) that has a certain mistrust of AI, but they are also difficult to develop and formalize due to the technical complexity of the technology.

In spite of few recent specialized applicable standards, such as for the protection of personal data (Heisenberg 2005; Albrecht 2016) or in robotics (Schlenoff et al. 2012; Johnson and Noorman 2014), a general and global legal system control the AI related risks does not exist. Fortunately nature abhors a vacuum and solutions have been developed. At the edge of lawlessness and mandatory law, a whole range of applicable standards more or less restrictive are emerging to fill possible legal loopholes, often out of necessity, as prior regulatory basis or to overcome political and economical issues at a national or international scale (Guzman and Meyer 2010; Pellet 2018). These private standards are not meant to replace the necessary traditional legal norms, but reflect a need for regulation. Due to the development of private initiatives, and with non-binding legal tools also known as *soft law* (Dupuy 1990; Cazala 2011) that are actively used in other legal domains, such as environmental law, the civil society is mobilizing to guarantee the development of AI for social good. This mobilization reflects a form of empowerment of the society in the prevention of AI-related risks. The term *responsibility* defines the principle of facing the consequences of our actions. However, the responsibility is expressed in different ways such as a coercive normative constraint, an economic mechanism, a moral imperative or a governance mechanism (Dahlsrud 2008; Costa et al. 2001). Consequently, a social accountability emerges and leads to the deployment of voluntary standards, coming from the civil society to guarantee a suitable principle of *social good* in addition or as a precursor to the traditional normative framework.

This paper explores and defines **how voluntary standards enable the use of AI for social good** with the introduction of different tools that have been successfully employed jointly with legal regulations in other legal areas such as the environmental law. Therefore, the major forms of voluntary standards applicable to AI ensuring its positive use according to the social good are gradually introduced, starting with the stakeholder awareness, followed with the voluntary application of private standards, and concluding with the incitement to the development of AI for social good.

Awareness on social good for AI

The actors empowerment and the integration of social good for AI start with the democratization of the information related to both AI risks for social good, and to the awareness of the concepts of social good for AI.

Risk awareness of AI for social good. The fast development of AI leads to concrete risks to the social good in different aspects of our societies. Different examples are available such as in the economic field, with the strong impact of AI on robotics and the employment market (Manyika 2017), or in the social area with the unfortunate transfer of important human biases to the systems (e.g. racism, sexism, etc.) (Bolukbasi et al. 2016; Zhao et al. 2017; 2018), or within the security domain with concerns involving the relations of AI to the concept of democracy (Ferrara et al. 2016), arms monitoring or in a legal aspect, with multiple questions on the protection of personal data and privacy (Albrecht 2016; Tankard 2016), or on the problem of accountability of AI systems (Taddeo and Floridi 2018; Tual and Fagot 2018). Researchers have drawn up a non-exhaustive list that includes “*labor displacement, inequality, an overall oligopolistic structure, totalitarianism, shifts and volatility in national power, strategic instability, and an AI race that sacrifice safety and other values*” (Dafoe 2017). Raising the awareness of AI risks is of crucial interest to ensure its implementation with respect to the standards of social good.

Without a normative framework, and in the same manner as the recent mobilization of numerous employees against a partnership involving their AI products and the army (Harwell 2018), some researchers become aware of these risks, and take responsibility and fight to establish safeguards for a responsible development of AI (Montréal 2018; Harwell 2018). A growing awareness expressed in the economic sphere by the recent creation of ethical committees from private companies, such as the *advanced technology external advisory council* (Levin 2019) or the foundation of an ethical institute (Shead 2019) aiming at conducting independent research increasing awareness by providing advice on the subject of AI for social good. Moreover, and at the country level, some governments realize the lack of standards and the increasing risk of AI, and start to build national study committees. As an example, France and Canada have recently announced the joint creation of the *international panel on artificial intelligence* (IPAI 2018). These mechanisms are expected to promote a respectful and ethical approach of AI with the principles of sustainable development. Unfortunately, some of them already suffer from internal biases on the subject (Levin 2019) highlighting the complexity of the task. Concurrently to these private initiatives, numerous open events promoting a risk awareness on AI for social good emerge, including well-known international conferences and workshops broadening the debate of stakeholders on this topic (e.g. NeurIPS AISG Workshop, Conference on AI, Ethics, and Society, International Conference on Artificial Intelligence

and Law). All of these tools are essential to raise awareness of the risks of artificial intelligence. Despite reflecting a beginning of interest, additional efforts must be made to improve their impact.

Raising the AI actors awareness to the social good.

Well-known researchers on social sciences and on the management theory I. Nonaka and H. Takeuchi have proposed an interesting approach particularly suited for these issues called the *rugby metaphor*. The latter idea highlights the richness of the information that can be cultural, moral, emotional or technical as well as the importance of the selection and transfer processes of the information by the actors of a specific situation (Bellon 2002). This work demonstrates the importance of the information and of its circulation among the various stakeholders, but most importantly, it shows the need to mobilize relevant and meaningful information at the right moment. Based on these hypothesis, the use of AI for social good necessarily involves both formal and informal education and training to allow a transfer of the relevant information to raise the awareness of the different actors.

In the same manner as computer science students are often introduced to the economics and management sciences, AI actors could and have to be initiated to fundamentals of social good (e.g. basic rights, social sciences, risk management,...) to integrate them whether consciously or unconsciously to their research or processes of production. Conversely, a dissemination of non-scientific or basic knowledge on methods related to AI to the civil society is crucial and must be encouraged to simplify the integration of the AI-related concepts and their impact on our societies. As an example, it is feasible to apply existing tools, including advertising campaigns or public seminars, to leverage a minimal but global knowledge on AI. Then and as a result of Corporate Social Responsibility (CSR), some organizations have set up an entire legal culture that could be transferred to AI to develop a collective intelligence of their teams regarding AI. A very simple, but powerful tool, is to create and broadcast informative e-learning videos. Indeed, it represents a training tool among others that raises awareness by focusing on the actions and reflexes to adopt, especially on the identification of a potential risk.

Awareness of artificial intelligence actors allows them to become conscious of the impact of their actions and their decisions in the development of risks related to new technologies. Once aware, they can act to limit these risks facilitating the advancement of an artificial intelligence for social good. Despite the fact that this paper proposes to study soft law techniques related to AI for social good, an effective and complete awareness of all actors in this field requires that our leaders and representatives are also interested. In fact, soft law techniques must be complementary to the adoption of public policies for the supervision of AI. Therefore, it is necessary to bring the attention of politicians to the many risks of AI and the crucial interest of its management.

Private standardization of social good for AI

Once the different AI actors are well-aware of the concept of social good, various instruments must be proposed to formalize its integration and induce behaviors that are respectful of the idea of social good within the use of AI, such as the development of voluntary standards from private initiatives.

Ethical standards for social good in AI. As stated by the Nobel Prize for Economics Joseph Stiglitz, “ *we are a global community, and like all communities, we must follow rules to live together. They must be clearly seen as fair and just. They must pay due attention to the poor as well as the powerful, and demonstrate a deep sense of honesty and social justice* ” (Ferry-Maccario et al. 2006) and regardless of the considered domain. In this extent, AI constitutes a major scientific and technological breakthrough that brings important social benefits, but also rises critical ethical and social risks (Montréal 2018). Ethical challenges that the community, and in the absence of a legal framework in this area, has took off. Indeed, among the tools of voluntary standardization to enhance the concept of social good within the AI domain, some ethical standards have recently emerged while others are still in development.

As an example, the *Montréal declaration for a responsible development of artificial intelligence* (Montréal 2018) is advocating for a positive development and use of AI based on specific social good principles. Following the latter declaration, other institutions such as the *Council of Europe* are interested in extending these principles to a general ethical framework for a responsible and ethical use of AI with respect to the Human Rights, rule of law, and democracy. More precisely, the *Council of Europe* investigates the impact of AI in specific domains, including the medical field (Bioethics Committee) (Yuste et al. 2017), with a strategic action plan on the interactions of technologies and Human Rights in the biomedical context, or gender equality (Gender Equality Committee), with a funded project to prevent and reduce the risk of sexism induced by AI algorithms (Zhao et al. 2018; 2017; Bolukbasi et al. 2016). In fact, numerous areas with an emphasis on AI are investigated, including education, discrimination, cyber-security,..., Despite various ongoing projects on ethical standards that constitute a significant progress toward the supervision of AI for social good, coordination and the practical application of these standards remain an open and crucial problem. Indeed, all these institutions could benefit from coordinating their ethical standards. More precisely, a global coordination would enable an international ethical framework for AI, and would make the effectiveness of its application easier. Furthermore, and due to the abstract concepts driven by the idea of an ethical AI, an effective implementation of these texts implies to improve them with more global actions. As an example, we propose to conceive specific ethical “*codes of conduct*” for professionals, to deploy in private companies or in public institutions. Ethics is of particular interest to the artificial intelligence community.

Nevertheless, the research in this field mainly comes from western-based societies. Thus, AI for international social good must envision common values and its principles must come from around the world.

Technical standards for social good in AI. In the last decades, the concept of social responsibility, that relies on the voluntary initiative, has been highly investigated in the field of corporate social responsibility for the environmental protection and Human rights (Hay, Stavins, and Vietor 2005; Idowu et al. 2013; Darnault 2018). The social responsibility answers a global need for references (e.g. standards, laws), enabling an institution or a company (e.g. AI-related products) to fully integrate its economical, social and legal environments alongside with its different stakeholders, within the management of the institution or company. The standardization is a crucial element of the *soft law*, that represents common standards to illustrate and standardize the practices of the social responsibility, and ensures a certain efficacy by proposing a collective solution to technical or organizational issues (Castka et al. 2004; Helfrich 2008). The private standardization based on soft law techniques offers the advantage of tailored voluntary commitments but does not replace legal regulations.

Various national, regional or international organizations are at the origin of these voluntary standards designed specifically for the audiences they target to build a common frame of reference for AI. In fact, and in the same manner as W3C that has standardized the compatibility of certain web-based technologies, few organizations start to embrace the concept of AI and its supervision for social good. As an example, the *International Standardization Organization* (ISO) is currently working toward new strong standards for AI in collaboration with the United Nations (UN) Sustainable Development Goals (SDG). Despite the fact that recently published standards mostly consider information technologies (IT) and the reference data architectures, numerous ongoing or upcoming projects focus on the use of AI, such as the standard *ISO/IEC AWI 38507* that relates to the governance of IT and the governance impacts of the use of AI technologies (ISO 2019). In the same context, a French standardization association, named AFNOR, actively works on important aspects of the use of AI including ethical and social concerns, reliability and the integration of the risks induced by systems relying on machine learning based solutions (AFNOR 2019). These voluntary standards are based on consensus among all actors and in this sense they all agree: economic actors and consumers, professionals and users, to clarify and harmonize practices and define the quality level, security, compatibility, impact of products, services and practices. While they contribute to the establishment of minimum quality thresholds, the achievement of compatibility between organizations and the reduction of organizational variability, these standards are usually purely functional and must complement legal regulations that protect the common good.

Incitement to social good for AI

Based on the previous introduction to social behaviors of social good standards for the use of AI, it is now feasible and important to actively promote their development toward the community and to induce a generalization of social good in AI.

Contractual commitment to social good for AI.

While most of the contractual relations are limited to the principal intentions of the parties and solely consider their main duties (Nurit-Pontier and Rousseau 2012), it is worth emphasizing that a contract not only establishes a commercial relationship but also enables to anticipate foreseeable risks (Deharo 2011; Posner 2002). More precisely, it represents a legal instrument that defines a powerful communication tool, that can be used to determine contractual partners engaged in responsible processes or to incite them to develop this aspect. It is therefore of crucial interest to integrate informational components in the contracting process of the formation of the contract, to motivate and lead to the partners agreement to the concept of social good for the use of AI, as it has already been demonstrated for climate change (Hautereau-Boutonnet and Porchy-Simon 2019).

For example, voluntary environmental standards have gradually shaped international trade rules by infiltrating the contractual practice (Howard, Nash, and Ehrenfeld 2000; Delmas and Terlaak 2001; Johansson and Lidestav 2011). Thus, the use of the contractual tool, in particular the environmental clauses mentioned in the ethical charters or stipulated in the international contracts, formalizes the commitment of certain companies in the fight against the environmental risks. A method used in environmental matters that can be transposed, combined with the deployment of voluntary standards, to fight against the risks of AI. Then, and with both public and private institutions, it is feasible to internally integrate the observance of ethical standards in employment contracts. In fact, among the sources of applicable labor law, it is necessary to distinguish external sources (*e.g.* international rules, laws, collective agreements) from internal sources (*e.g.* collective agreements of companies, regulations, uses ...). Thus, the employer can develop rules, standards of ethical behavior that are imposed on workers (James 2000). Externally, ones can consider to obtain the adherence of institutional, commercial or financial partners to the defined ethical standards, to ensure the integration of technical standards enabling a responsible development of AI within the partner organization. In fact, in the same manner that employers can induce the ethical behavior of its employees by contract, an organization can influence the behavior of its partners by their contractual commercial relations. The freedom that frames the contractual tools makes it possible to consider adding contractual clauses regulating the use of a research object, or a product, to limit restrictively the utilization and the resale of an AI technology compliantly to social good principles.

Ensure the use of AI for social good. Despite the fact that the integration of a standardization constitutes an important step toward a responsible use of AI for social good, standards are non-binding and there is no guarantee of their correct application within private or institutional organizations. As a consequence, it is essential to propose tools to ensure the conformity of the acts of an organization that specifically showcases its compliance with a responsible AI program, or to at least inform the public and the stakeholders of the organizations that commit or not. In fact, the principle of certification is to give citizens (*i.e.* customers, users, administrators) an insurance on the quality of a service or a product. The certification brings the evidence, testifies, establishes the respect of a reference frame. In this extent, new control centers must be developed.

In particular, it is important to dissociate the *standardization*, that defines the process of conception and production of reference materials (*e.g.* standards) from the *certification* that denotes the conformity assessment obtained by an entity from a third-party body with respect to specific standards (Grenard 1996; Krzan et al. 2006). In fact, the latter certification bodies are part of the voluntary standard-setting instruments due to the fact that organizations choose to comply without any legal obligation. As an example, environmental protection often involves to demonstrate on the packaging of a product its attachment in the fight against climate change, through a label, or by highlighting the efforts made to limit the CO₂ consumption, or even by showcasing its involvement to a sustainable development program aiming at promoting the recourse to local producers (Hautereau-Boutonnet and Porchy-Simon 2019). Thereby, it is possible to follow the same approach, but with AI products and toward the use of social good for AI (Rolnick et al. 2019). However, it is necessary to recall that most of the certifications provide the compliance guarantee with certain standards, including private standards. Thus, one must pay attention to the standards whose certification ensures compliance. In addition, the major certification centers are also voluntary standardization centers. Therefore, they ensure compliance with the rules and standards they have established, in accordance with the regulations in force, but do not guarantee behaviors established and controlled by the public authorities. The source of certified standards and the defended interests being distinct, differentiation is more than necessary. While certifications must be used with cautions, they represent an interesting tool to encourage those involved in AI to guide its development toward social good.

Finally, it is admitted and well-known that voluntary standards and soft law techniques do not replace legal regulations. Nevertheless, they enable the civil society to opt for an important and effective virtuous circle driving the development of AI toward social good as illustrated in Figure 1.

Conclusion

In this paper, it has been shown that the lack of a legal system, despite the crucial need for frameworks and standards regarding AI, leads to the rise of a private standardization. The latter voluntary standardization enables, through the numerous and various tools introduced in this work (summarized in Figure 1), to gradually build foundations for the future legal edifice. The awareness raising of the civil society and the actors of the field to the AI-related risks allows the establishment of voluntary ethical and technical standards. These standards lead to a change in the behavior of the actors that adhere to them but also impact the behavior of their employees and partners. A virtuous circle illustrating the role that everyone can play in the development and use of artificial intelligence for social good.

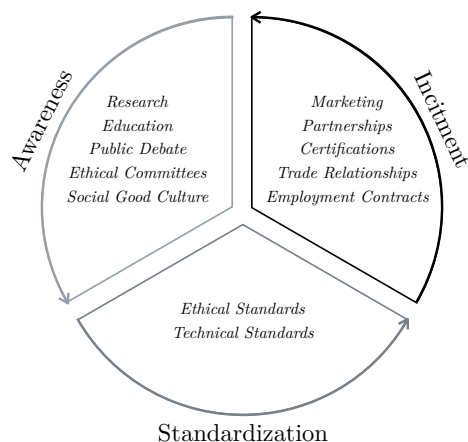


Figure 1: Illustration of the virtuous model based on soft law techniques for the development of an AI for social good.

These soft law techniques can boost the international normative activity by extending its scope, particularly in the context of emerging legal areas such as AI. Indeed, these tools have various advantages including flexibility and adaptation that facilitate their development and application. Based on soft law techniques, the different AI actors can directly act on their own behaviors, but also on their collaborators actions to encourage an AI for the social good. An important interest for soft law that is easily explained by its *lightened* nature on the procedural level and its faculty of extension. Nevertheless, the gap between the flexibility of this process and the power of action it provides represents a risk of legal protection for the civil society. It is therefore crucial to keep in mind that voluntary standards, despite their multiple benefits, must remain a temporary alternative or an accompaniment to the adoption of legally binding standards. Indeed, if they guarantee a form of social good to artificial intelligence, they do not guarantee the respect for the common good, which is protected by government standards. Further research is thus needed on the AI governance issue: the problem of devising global norms, policies, and institutions to better ensure the beneficial development and use of AI advances (Dafoe 2017).

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