

Artificial Intelligence as Global Commons and the “International Law Supremacy” Principle

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ABSTRACT: The current paper analyzes the issue of Artificial Intelligence—AI—focusing on Artificial General Intelligence—AGI—and Artificial Super Intelligence—ASI—from the perspective of international law. It begins with the acknowledgment of the fact that AI poses historically unique challenges on the basis of its ontological characteristics and mainly of the emerging autonomy. Its autonomy bears the potential of leading to actual personhood—or raising AI entities to the status of “being”—thus necessitating the attribution of legal personhood too. Such a situation would be groundbreaking for all legal systems as well as for the way we comprehend various conducts, terms and legal relationships. In this framework, of the ecumenical challenges that AI poses, the article argues in favor of a common, international response, through the international law supremacy principle. In addition to that, the article makes the argument for the regulation of AI entities that lie at an intermediate technological phase, meaning for those which have surpassed the level of “res”, without constituting fully autonomous “beings” yet and thus raising the issue of the attribution of legal personhood, that the regulatory framework of global commons could be adopted, both for the entities themselves, as well as for their creations.

KEYWORDS: Artificial Intelligence, Autonomy, Global Commons, International Law, Legal Personhood

Introduction

Artificial Intelligence—AI—is emerging as one of the dominant issues globally, extending its presence at almost all levels of human conduct having raised both concerns and expectations (Sofge 2015; United Nations 2017; Cellan-Jones 2018).

It poses a number of issues which are historically novel per se or at least are novel in terms of the intensity with which they emerge: the interaction between humans and AI (Larson 2010, 106) and the legal, moral and social implications, (Kowert 2017, 181-83) the use of AI for lethal reasons, (Lin 2017; Schmitt & Thurnher 2013, 231; Human Rights Watch 2012; The Economist 2018) the magnitude of higher productivity (The exact impact of AI in such terms cannot be foreseen in the long term but still the trend is present and some estimation can be made, for example foreseeing a higher productivity of up to 40% until 2035. Bose 2018) and wealth accumulation (The multifaceted impact of AI in the economic circuit, can be summarized—roughly speaking—into deep-learning, robotization, dematerialization, gig-economy, autonomous driving and to the wider field of the so-called industrial revolution 4.0. Wisskirchen et al 2017, 9-13) combined with its impact on the labor force as a factor of the economic circuit (Wisskirchen et al. 2017, 16) and—probably—above all, the potential creation of completely autonomous AI entities constitute the main matters of debate.

The current article is built on the distinction between weak and strong AI, with the latter being defined on the basis of its intellect autonomy and as leading potentially to the attribution of legal personhood to AI entities, which manifests an emphatic endorsement of the fore-mentioned autonomy. On the basis of such unique developments, the first level of the paper argument advocates the regulation through public international law.

The second level of the argument suggests that in advance of a potential classification of autonomous AI entities as legal persons—which prerequisites an extended debate about the speculation for the type of “persons” and therefore for their legal status—an intermediate step is to classify such entities and their creations as global commons in order to achieve transparency in the technology leading towards strong AI, as well as to avoid unfair ownership of creations of AI entities.

In order to sustain this argument, a brief reference to the ontology of AI is presented as well as a short analysis of legal personhood. (A complete analysis would necessitate distinct analyses about the significance and uniqueness of each one of the fore-mentioned areas of AI development. However and because of the limited space of the current paper, only limited references will be made.) Then, the

argument for the supremacy of international law in terms the regulation of AI is proposed and last, the case for the attribution of global commons status is made.

Ontology of AI

AI has been defined as “a broad set of methods, algorithms, and technologies that make software ‘smart’ in a way that may seem human-like to an outside observer” (Noyes 2016). The focus lies in the “human-like” intelligence of machines (Laton 2016, 94). A further classification identifies four sub-categories, namely AI designed to think like humans, to think rationally, to act like humans and to act rationally (Russell & Norvig 1995, 4-5).

AI is in principle distinguished between weak AI, where “the computer is merely an instrument for investigating cognitive processes” and strong AI, where “[t]he processes in the computer are intellectual, self-learning processes” (Wisskirchen et al. 2017, 10). Weak AI is labeled as Artificial Narrow Intelligence—ANI—while strong AI is further distinguished between Artificial General Intelligence—AGI—and Artificial Super Intelligence—ASI.

While the first type also poses significant issues, the prospect of AGI and ASI, ontologically includes the historically unique issue, of AI entities which might be capable of mimicking human intellect and—potentially—of surpassing humans not only in specific aspects of human intellect but holistically (Schuller 2017, 387-388) breaking thus, the barrier of—human controlled—automization. Recognizing this possibility as a very realistic one, the EU Committee on Legal Affairs (2016, 4) held that “[U]ltimately there is a possibility that within the space of a few decades AI could surpass human intellectual capacity in a manner which, if not prepared for, could pose a challenge to humanity's capacity to control its own creation and, consequently, perhaps also to its capacity to be in charge of its own destiny and to ensure the survival of the species.”

Such a procedure has been described with the “OODA Loop” scheme, where OODA stands for “observe, orient, decide, act” (Marra & McNeil 2013, 1193). In the context of such a coherent sequence of conducts, what determines the level of autonomy of an AI system is not the exercise of one of these conducts but the implementation of the whole circle, which eventually constitutes the “machine-learning” procedure. Machine learning is comprised of a performance and of a learning element. The first one “senses the environment”, while the latter, employs feedback from the system and amends the performance element (Schuller 2017, 396).

The capacity of AI to include a variety of factors in the first element of its learning procedure and even more its potential capacity to identify new factors are crucial regarding its intellect self-development towards autonomy. Machine learning thus resembles more to “coaching” than programming and also to human learning procedure (Scherer 2016, 365; Tanz 2016; Cuellar 2017, 33; Kowert 2017, 183). It also draws “an exceedingly blurry line between computer-assisted human choice and human-ratified computer choice” (Kroll 2017, 633). On the basis of these characteristics, AI could form a new “domain” of intellect entities—or beings (Copeland 2000; Armstrong & Sotala 2012, 52; Galeon & Reedy 2017).

Such a development should not be perceived as necessarily leading to intellect autonomy and function, identical to that of humans. The path towards intellect autonomy contains a great deal of unpredictability regarding the actual form it will take, when implemented by a non-human entity and therefore while it can be speculated it cannot be foreseen with complete accuracy. The above mentioned ontological condition gives rise to some of the main issues in relation to AGI and ASI: how will they interact with humans, in the framework of existing legal systems? Will such entities or beings be entitled to legal personhood?

The potential for legal personhood

This latter question is probably the most groundbreaking and puzzling one, which has been posed to any legal system. The detachment of legal personhood from human being remains somewhat of a paradox causing an extent of “fuzziness” of the concept of personhood (Solum 1992, 1285; Barrat 2013, 39-41). Even up to the extent that it is not completely identified with humans—which remains the main approach—it includes artificial entities which are consisted of and administered by humans—

i.e. corporations, states, international organizations etc. Essentially, legal personhood has been—until now—attached directly or indirectly to human entities (Dowell 2018, 321).

A definition of non-human personhood is a matter of interdisciplinary approach, which cannot be made here. What can be proposed here though is that a crucial element would be the intellectual autonomy of the entity (for example, consciousness, sentience, sapience) although the type and the extent must be further clarified? (MacDonald, 2016) For example an entity, that can be in general conscious that it possesses consciousness, which it can evolve and enhance on the basis of its own critical reflection and assessment of external factors, can be considered as having a high level of autonomy. A lower level of autonomy exists if an entity can demonstrate such consciousness at a narrow field or can self-evolve and self-adapt to external influences, thus reaching decisions “of its own”, without being conscious of its intelligence as such. Still, even in these latter cases, such an entity will be in possession of some—critical—extent of autonomy from its original programming.

What complicates things even more is that the rise of AI up to a level of—potential—personhood will not be most probably an exact replication of human intellect behavior. “[U]ltimately, robots' autonomy raises the question of their nature in the light of the existing legal categories—of whether they should be regarded as natural persons, legal persons, animals or objects—or whether a new category should be created, with its own specific features and implications as regards the attribution of rights and duties” (Committee on Legal Affairs 2016, 5). In such a sense, defining factors of human personhood—for example death—will be irrelevant or at least will need to be largely adjusted (Dowell 2018, 327-329). In addition, some of the characteristics and therefore legal concepts which orientate out of the placement of human actions within the specific socio-economic model could most probably be irrelevant for AI entities. It is gradually indicated by several AI applications, that concept, such as morality, ownership, profitability and viability will have different meaning—if any—for AI. Characteristic is the debate about the ownership of intellectual property. While the courts are until now decline to attribute such rights to non-human entities, legal theory has justified in favor of the contrary position. An answer to such a dilemma of course could be simply to acknowledge that an AI entity might autonomously have achieved a discovery on the one hand while on the other hand the legal concept of patents cannot have any implementation on entities, for which the human aspiration of profitability has no relevance. Therefore, the answer is not to attribute to some human(s) the rights from a patent that they do not deserve—at the expense of the rest—but to have no patent at all (Watson 2018, 68).

Therefore, in a situation of co-existence of “intelligent” entities not only the (im-)balance between the levels of intelligence but also the potential inconsistency in terms of fundamental concepts could be proven challenging regarding the coherence of social, political and legal systems. Still, eventually, the emergence of AGI and ASI will necessitate the attribution of some extent and of some type of legal personhood, bearing rights and obligations.

The International Law Supremacy Principle and AI as global commons

The ontology of AI, its already existing and future applications, as well as the potential emergence of AGI and ASI leading to new types of actual personhood and raising the prospect of legal personhood to constitute the main ground for the invocation of the international law supremacy principle, through an equivalent, international treaty.

The first reason is that the fore-mentioned paragons, due to their significance for the whole of humankind exceed the sphere of national interests and legal systems.

The second one is that the potential emergence of a personhood—in the sense of autonomous intellect—of a different type and especially through the merging of AI and cyberspace might lead to the breach of the relationship between legal personhood—in the sense of rights and obligations—and sovereignty (Hildebrandt 2013, 202). What has been historically a fundamental part of sovereignty and thus of the national legal systems capacities, is “territoriality”. The latter comprehends as self-obvious the fact that every human being as well as any artificial entity which fulfills certain capacities exist in a certain part of a physical space which belongs to a state.

The merging of AI and cyberspace on the contrary will potentially lead to entities which will have the capacities of intellect personhood as described above, without any legal attachment to physical space and thus to states. Therefore entities possessing actual personhood will be out of reach of the legal authority of states. This is why the need for regulation of their potential legal personhood by another legal system will emerge. That becomes then, the role of international law (Conolly 1995, xxii; Ford 1999, 854, 870). In this framework an international treaty is proposed, which could regulate, existing AI technology leading to AGI and ASI, as well as the latter two types of AI.

The last critical point refers to the legal characterization of the different levels of AI development, in the context of which the argument about legal commons or “res communis” is presented.

On the one end, currently, AI is perceived as innovative technology or as the sum of different technological advances; eventually as “res”. This is after all why development of AI technology until now is considered as the privilege of the private, technological sector, (Dowell 2018, 314-15) with little—if any—public regulation.

On the other end, as said before, AGI and ASI will emerge as new types of intellect personhood and therefore they should be attributed a type of legal personhood as well, if they are both to be comprehended correctly and to avoid unfair treatment, towards humans as well. The latter, in the sense that an unfair, towards all the rest, advantage would be acquired by few.

In between these two “ends” though, there is the intermediate phase, in the course of which AI technology moves towards AGI and ASI and thus towards intellect and legal personhood, starting therefore to surpass the “res” situation, without having reached the “personhood” one though. However, it already produces creations and will do so even more in the near future, through its developing autonomy, which means that such creations are and will not be the outcome—directly or indirectly—of the initial programming. In addition, the technology leading to AGI and ASI is already present, posing moral and legal dilemmas about who should control it and under what terms.

It is in such a context that the paper suggests that for this intermediate phase the international community should begin to think on the basis of global commons, regarding the gradually more autonomous AI entities, as well as their creations, shifting the legal characterization from res, to “res communis” and then to “legal personhood”. The two ideas behind the proposal for such a classification is that first the attribution to a human or to a corporation for a creation that is not causally connected to their initial programming would provide them with an unfair advantage and extent of control—through patent for example; second, that the fore-mentioned significance of the potential of technology towards AGI and ASI should not be left to be regulated under the private sector’s prevailing, ambition for profit.

In what sense though could global commons be used for the regulation of AI during this intermediate phase? Global commons primarily refer to space; to the existing domains, physical or artificial, such high seas, outer space, Antarctica and—according to some views—the cyberspace (Tsagourias 2015, 25).

While AI could barely be described as such, the characterization of global commons is proposed as a regulatory framework, which establishes control “...for the benefit of all nations” (Clancy 1998, 603). More specifically, the approach to global commons through the “common heritage of mankind”—CHM—doctrine can further clarify the suitability of such a regulatory framework, in spite of the fact that AI does not constitute space.

Under the CHM scheme of global commons, there are five defining elements: they are not ownership of anyone but they are to be managed by the international community as a whole, they constitute objects of “universal popular interests”, the economic benefit out of them should be shared by all parties, they must be used for peaceful activities and the research on them should be accessible by all parties (Joyner 1986, 190-99).

The fundamental idea is that certain “res” are considered of such significant for the whole of humankind that they must be governed collectively, at a public level, without being broken down into smaller parts or being controlled by some states only or private owners (Tsagourias 2017, 24-25). This fundamental perception of CHM despite referring in principle to different “res” than AI could fit in

with the latter, during this intermediate phase, on the basis of their ontology. This latter legal classification can be mainly speculated and up to some extent only, foreseen, since the extent and the type of autonomy which is not yet concluded will be the determinative factor. In any case it could and should be included, albeit in a more extended essay. The same approach can be proven even more important in relation to the products of autonomous AI entities, instead of seeking to whom a patent should be attributed.

The private or state ownership—by one or more—would contradict the fundamental concept of fairness, not only regarding the violation of such entities’ growing autonomy but also in terms of fairness among humans and within the international community. In addition it could be rather dangerous to trust on private ownership or to state, egoistic interests, the development of technology with such potential consequences. On the basis of these assumptions it is suggested that the regulatory framework of global commons and CHM could extend to a different legal concept, which because of its unique nature needs to borrow elements of normative frameworks of different fields.

Conclusions

The issue of AI—and more specifically of AGI as well as ASI—does not refer solely to the proximate future (Moravec 2009; Abadi & Andersen 2016). It constitutes a matter of the present as well, given that the technology leading to autonomous GAI and SAI is present and evolving.

In such a sense, the regulation of current technological advance, as well as of the creations of already existing, autonomous—partially or in a specific field—AI constitutes a necessity, exactly because it will determine the shape of AGI and ASI. The proposal of the paper is that during this intermediate phase the normative framework of global commons can offer public control of creations which cannot be attributed to human programming. In addition, the framework of global commons could establish a transparent framework for the regulation of technological advances, leading to the unique situation of the emergence of non-human, autonomous, intellect beings, claiming legal personhood.

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