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Book Review: 'Decider avec les algorithmes. Quelle place pour l'homme, quelle place pour le droit'

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BOOK

Sonia Desmoulin-Canselier & Daniel Le Metayer, Decider avec les algorithmes. Quelle place pour l'homme, quelle place pour le droit, 272pp, **ISBN** 2247195393

REVIEW

"Decider avec les algorithmes. Quelle place pour l'homme, quelle place pour le droit" is a very recent book published in February 2020 and written by Sonia Desmoulin-Canselier & Daniel Le Metayer. S. Desmoulin-Canselier has a PhD in private law, and is a CNRS researcher at the Law and Social Change laboratory at the University of Nantes. D. Le Metayer has a PhD in Information Technology. He is the director of research at Inria[1]1 and member of the CITI laboratory of the National Institute of Applied Sciences in Lyon. One of the particularity of this book is not that it has been written for four hands, but that those belong to a jurist and a computer scientist. The synergy of explanations rooted into two

[1] National Institute for Research in Digital Science and Technology.

different disciplines allows the analysis of such a complex topic as Algorithmic Decision Systems under a double perspective: legal and technical. The publication is part of the Dalloz collection “les sens du droit”, composed by other 19 books. The collection aims at broadening the public debate on current topics by involving non-specialist readers interested in the legal culture, through the use of a more accessible language and a less formalistic style than standard academic works. Due to the rapid development of technology and the large amount of data currently available, more and more operations are being performed through algorithms and automatic data processing. Algorithmic Decision Systems represent a concrete application of the algorithmic logic. “Decider avec les algorithmes. Quelle place pour l’homme, quelle place pour le droit” lies within the ongoing debate on how to regulate increasing resorts to algorithmic decision-making software and face the deriving challenges.

The book explores, under a legal and technical lens, this emerging scenario characterised by noticeable uses of Algorithmic Decision Systems by public authorities in the medicine, policing, administration and justice fields. In the medicine domain, algorithms elaborate decisions regarding the diagnosis of allergies, illness, etc. Algorithmic-based decisions find their utility in the field of administration by supporting the selection of teachers, identifying beneficiaries of social aids, detecting frauds. Surveillance and crime predictions are the most common purposes of Algorithmic Decision Systems uses in policing. Algorithmic decision-support systems are also implemented in the justice domain to calculate the amount of compensation to be given to victims as well as to predict the risk of recidivism of convicts and the resolution of disputes. The selection of these four domains stems from the impossibility, recognised by the authors, of dealing with the use of Algorithmic Decision Systems in every single sector of society. The authors also found essential not to limit their analysis to the systems used in Europe but to extend it to other jurisdictions, like the United States. This choice relies on the assumption that certain systems already used overseas might be soon implemented in Europe as well. The analysis operated in the book concerns the risks and the overall impact on society of using automated decision-making tools in the public sector. The authors conclude their work with a regulatory proposal for the development and the implementation of responsible Algorithmic Decision Systems that

would comply with legal and technical standards. In the last decade, both the private and the public sector adopted numerous guidelines and ethical frameworks in the attempt to regulate the design, and usage of algorithmic-based tools. However, this regulatory scenario, characterised by general and sector-specific frameworks, that usually refer to more than one national jurisdiction, cannot be considered adequate. In fact, the vast majority of these documents do not have a binding nature, and each instrument has its own definition of terms and scope of application, probably due to the differences in legal systems. This lack of clarity results in uncertainty regarding what are the applicable laws and standards in specific contexts and the fragmentation of a European and global common system of reference.

Why is it so important to refer to values and rights when algorithm-based decision-making systems relying on automatic data processing are applied consistently in our society? Because, according to the authors of this book, despite the undeniable benefits of algorithmic decision-making systems in terms of reduced costs and time, as well as rational and objective outcomes, the logic behind Algorithmic Decision Systems is advisedly deemed as complex and opaque. Especially when relying on Artificial Intelligence (AI) and Machine Learning techniques, these software risk to undermine the autonomy of the decision-maker and the rights of the addressee of the automated decision.

When talking about Algorithmic Decision Systems, one must be aware of their different features. The authors offer a grid of evaluation, based on four classification elements, which allows drawing different categories of Algorithmic Decision Systems. First of all, according to the *technique* used, more or less complex classes of decision-support systems can be distinguished. AI-based software produce more complex and less intelligible outcomes. Secondly, the *developing method* is another factor that determines the level of control and oversight that can be exerted on the software at stake. Algorithmic Decision Systems can be developed by institutions, administrations or private entities. It is frequent that when developed by privates, the algorithmic logic is protected by trade secret. This does not allow evaluating that the algorithm works in accordance with human rights and standards. Further concerns originate from the contribution of private companies that

develop tools for the delivery of public services. The risk that private interests are pursued at the expense of the public interest is high. The third element that the authors consider crucial when classifying algorithmic tools for decision-making is their *level of automation*. Algorithmic Decision Systems may assume varying degrees of human involvement, they could be semi-automatic (the book define them as "systèmes algoritmique d'aide a la decision") and used to assist humans in making decisions or fully automatic, meaning that they make and execute decisions autonomously. The distinction is paramount when establishing the value and the role of an automated decision. It is clearly stated in the book that the relevance of the role played by a decision made via a fully or a semi automated system can often become the same. This concept is better explained through the example of a judge, using an Algorithmic Decision System only as a support to her decision. It is assumed that, once she receives the suggestion from the machine, she will rarely take the responsibility of detaching from it. Therefore, the result would likely be as if the decision was made by the machine alone. The last criteria to categorise Algorithmic Decision Systems mentioned in the book consists in considering their different *users*. Indeed, decision-making systems based on algorithms can be put at the service of individuals, private and public organisations.

The authors stress that - regardless of their level of automation - when implemented in the four selected sectors of interest of this book, Algorithmic Decision Systems pose concrete concerns regarding the legitimacy, efficiency and reliability of outcomes. Legitimacy concerns depend on the aim pursued, the nature and the functioning of the algorithmic tools implemented. Cautious approaches are recommended also due to the fact that Algorithmic Decision Systems are not infallible. Indeed, they can make erroneous predictions. Studies mentioned in the book show that a decision made by algorithms can reach a maximum of 80% of accuracy.

Algorithmic decision-making systems are also exposed to the risk of reproducing biases already existing in the dataset used to train the algorithm to make decisions. This would eventually result in the perpetuation of the same discrimination on and on. It is also possible that discriminatory outcomes derive from the design of the software itself.

Further concerns relate to the impossibility of control and oversight on the functioning of the algorithmic logic, especially when the so-called "black box" enters into play, as well as to the risk of profiling and data leakage deriving from the massive treatment of personal data used to run the algorithm.

Against this worrying background determined by inappropriate and irresponsible uses of technology embedded in decision-making systems, it is meaningful the recall to the respect of fundamental rights and principles done by the authors. Many are the values deriving from the longstanding European tradition of protection of human rights and fundamental freedoms. By referring to universal declarations, multilateral conventions, European Union legislative acts, and national jurisdictions, the book depicts a non-exhaustive list of principles to be transposed in a general framework dedicated to the regulation of Algorithmic Decision Systems, as well as in more sector-specific instruments. First and foremost, algorithm-based decision-making systems must respect the principle of human dignity, in order to avoid the reduction of humans as means to economic efficiency and overcome individual differences. The authors fear that "la personne est oubliée au bénéfice des données qu'elle produit" (pg. 115). The principle of individual freedom, personal autonomy and consent, respect for private life and personal data, equality and non-discrimination (the principle of "privacy by design" introduced by the GDPR is gaining momentum) must be observed too. Importance is also attributed to the respect of the rights to information and access to public documents, effective judicial remedy, fair trial and adversarial principle, as well as to the principle of proportionality. The re-configuration of the requirements for the attribution of responsibility is also deemed as necessary. In case of damages caused by an algorithmic-based decision-making systems, particularly the ones based on AI, pose new challenges regarding the identification of the responsible subject among its designer, programmer, producer, data controller, user.

In the last chapter, the authors propose a step-by-step procedure, that they define "le cercle vertueux", for a responsible development of Algorithmic Decision Systems that would prevent from dramatic consequences on freedoms and rights of individuals and

confer reliability to these systems.

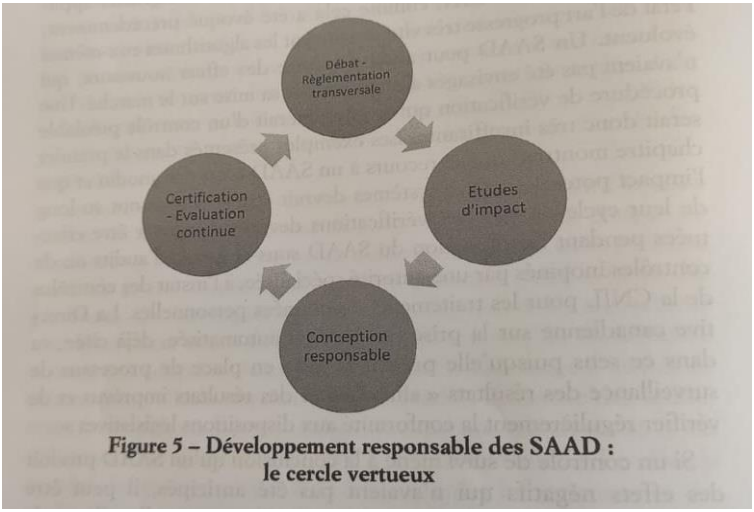

Figure 5 – Développement responsable des SAAD : le cercle vertueux

Figure 1 - Page 250

The cycle consists in the *elaboration of a legislative instrument* specific for Algorithmic Decision Systems, which would take into account fundamental rights. The drafting process should be accompanied by an extensive public debate in order to strengthen the legitimacy and public acceptance of the framework. The second phase prescribes that an *impact assessment* on sector-specific regulations for Algorithmic Decision System should be carried out in order to ensure the correct transposition and respect of the rights and standards set forth by the general framework.

The responsible approach envisaged from the authors sees, at its third step, the setting of clear objectives to be met when implementing decision-systems based on algorithms. The identification of the *mission statement* should pursue a balance between the human role and intervention in the process and the machine interference. Eventually, to ensure that decision-making systems meet the objectives pursued, the authors propose that Algorithmic Decision Systems undergo a *certification* procedure. The techniques on which

these systems rely are in constant development. Due to the new and still unknown potential applications, which could pose new and so far unimaginable risks and challenges, it is important that oversight and control over those systems is carried out regularly. The authors do not explain why the fourth and last step of the cycle, named “certification-evaluation continue” is linked to the first step of the process, “debat-reglementation transversale”. It seems intuitive though that public debate and revisions of the general regulatory framework might be necessary every time innovations in Algorithmic Decision Systems risk to challenge rights and principles regulating society.

The authors conclude the book by stating that in this clash between technology and humanity, the urgency is not to “remettre l'humain dans la boucle” but to reallocate in a meaningful way the power to the parties contributing to the development and implementation of Algortihmic Decision Systems, as well as to strengthen the human ability to intervene on decisions proposed by algorithmic systems. The fear of humans of being excluded from technological development is in fact contradictory because humans are the responsible for such a progress. They play a fundamental role in each step of this progress by designing, training, allocating, developing, and using these technologies in the first place.

“Decider avec les algorithmes. Quelle place pour l’homme, quelle place pour le droit.” is a valuable work for many reasons. It allows the understanding of such a complex and unsung topic as Algorithmic Decision Systems through the use of a flowing and accessible language, as well as a joint effort by two experts in two different disciplines. Nevertheless, the book is detailed and precise in information regarding both the domains, technology and law.

One might affirm that the scope announced at the beginning of the book, namely the analysis of semi-automatic systems based on algorithms, is sometimes disregarded throughout the book. Indeed, the evaluation of compliance with fundamental rights and principles is operated against not only mere decision-support software but also fully automated ones. Due to the different risks deriving from the use of one or the other of these systems, one could always treat them as if they run on the same logic. A similar

remark regards the way authors deal with systems based on simple algorithms that perform rule-based operations - which are normally characterised by identifiable input and output – an AI-based systems - where the so-called “black box” enters into play -. Also in this case, the challenges posed by the use of one system instead of the other are remarkably different.

Perhaps, underlying even more the differences between semi and fully automated systems as well as between rule-based and more autonomous ones, would render even more clear to readers, especially the ones less familiar with the topic, the concerns deriving from the use of these systems and the required procedure to regulate them. The scope of the authors of popularize the topic of Algorithmic Decision Systems to broaden the discussion arena would then be fully achieved.