EXPLORING THE CONSEQUENCES OF RISK ASSESSMENT AUTOMATION.

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INTRODUCTION

The increasing and unmanageable volume of information needed to conduct Chemical Risk Assessments (CRAs) is pushing the sector towards Artificial Intelligence (AI). The belief is that AI technologies could help speed up and modernise the science-policy cycle of CRAs, specificallywhen it comes to process simulation, supporting evaluations, identifying problems, facilitating collaboration, finding experts, gathering evidence, conducting systematic reviews, knowledge discovery and building cognitive models. However, this shift raises concerns from a legal and ethical perspective mainly due to the expanding autonomy of AI and the capabilities AI has to support regulatory decisions. Recurrent legal questions revolve around the understanding of who is responsible if something goes wrong due to a decision taken on the basis of AI, transparency and desirability. Other questions have to do with the inner workings of AI as 'past-generating futures' technologies and the potential biases that may implicitly or explicitly impact the process.

METHODOLOGY

Using AI to facilitate the knowledge-policy interface that informs regulatory decisions about placing chemical compounds onto the market raises many questions. However, how to address them is still in its infancy among social science and technical communities. Our work contributes to filling this gap by exploring the research question: what does Artificial Intelligence entail in the context of Chemical Risk Assessment? To this end, this contribution reviews the literature on the use of AI for decision-making processes in a multidisciplinary fashion in order to unearth the underpinnings of the topic and identify key concepts, research gaps and evidence sources, with the aim of anticipating the potential consequences of automation in the context of CRA.

RESULTS

Our preliminary results show that while AI can increase resource efficiency and the speed of conducting CRAs, automating parts of the assessment is nonetheless not straightforward and raises particular ethical, legal and societal concerns. In the particular context of CRA automation, our results show numerous examples in which social science research has shown that using machine learning techniques to inform decision-making processes can lead to fatal errors that may be difficult for humans and policymakers to oversee. These errors range from harm, unexpected consequences, exacerbation of bias and no future-proof

outcomes to a profound change in transparency. Moreover, while the Society of Automotive Engineers (SAE) has established automation levels for automobiles through the standard SAE J3016, there are no universal standards that define the levels of autonomy for AI used within other fields, such as medical robotics, corporate management or risk assessments.

DISCUSSION

Given our exploratory work in this field, the scientific community behind CRA is urged to discuss the autonomy levels of Risk Assessment Automation, the establishment of clear roles and responsibilities concerning the automation process, and the provision of more precise guidance at policy level. Adopting AI for CRA may entail a more profound change in the science-policy context that may have further implications for education, and require a skill shift from the stakeholders involved in such processes. As such, it becomes increasingly evident that these discussions cannot be handled by scientists alone, but that there should be rigorous stakeholder involvement, including the involvement of legal scholars.