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WHAT'S THE ISSUE?

Based on large amounts of data, computer systems have gained new abilities to perform tasks that so far required human intelligence, from image and speech recognition to decision-making or to automatic translation between languages. Today, artificial intelligence (AI) has already become widely used with wide-reaching economic, social and ethical implications. For that reason, inquiries into the ethical and social implications of current advances in AI are as urgent and essential as economic approaches.¹ The report of the House of Lords Select Committee on Artificial Intelligence (AI), for which one of this brief's authors (Dr Mercedes Bunz) gave oral evidence, is an important step in this regard. Published in April 2018, it calls for the UK to lead the way on ethical AI. The UK government has understood the importance of AI but is focussing on it mainly from a business perspective.

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Its policy paper 'Industrial Strategy: Artificial Intelligence Sector Deal' published shortly after the Lord's report states: 'AI has the

potential to solve complex problems fast, and in so doing, free up time and raise productivity². By introducing new automation, the potential of AI will indeed change businesses and more: successful automation of skills that so far needed human intelligence will have a fundamental impact on ever more aspects of everyday life, raising profound social, ethical and legal questions. These questions stem from the potential of bias accidentally built into AI systems, a lack of transparency in algorithmic decision-making, and insufficient testing of the predictability of AI technology. Further questions are raised by the tendency that an automation of knowledge also means a privatisation with public knowledge becoming corporate. And last but not least, the automation of knowledge work also leaves a question about the potential impact of AI on the labour market. Besides a rise in productivity caused by AI assisting with the accomplishment of tasks in a more efficient way, researchers from the University of Oxford³ have warned that there will be a rise in unemployment due to substitution of human-performed work by AI technology. Here, the government's Industrial Strategy states the hope for the emergence of new types of jobs to compensate for those that might be lost.⁴

From Alan Turing to Sir Tim Berners-Lee, Britain's contribution to digital innovation has been instrumental in the past and should also be so in the future. Today, AI is deemed to be one of UK's strongest sectors which could possibly 'add an additional £654 billion to the UK economy'⁵. The UK government currently aims to boost the UK's position in AI technology through working closely with AI businesses as described its 'Sector Deal' presented in April 2018.⁶ It suggests to 'work with industry to explore frameworks and mechanisms' that allow managing data in 'Data Trusts'.

With the aim to add an ethical and democratic perspective to this approach, we present and convey the findings from a research study into the effect of algorithms and AI applied to things resulting in the so-called internet of things. The following section will present research evidence on the challenges and opportunities arising from such transformation of objects and analyse the agency that things acquire through being informed by algorithmic processes. The subsequent review of policy options elaborates on international debates and also illustrates how non-regulation is an undesirable scenario if one wants to follow the overarching principle of the promotion of human flourishing laid out in the joint report by the British Academy and the Royal Society.⁷ Following their recommendation and this principle, the final section of this report will present a range of policy recommendations to strengthen this human flourishing regarding the development and usage of AI technologies.