Editorial

In 2018, Delphi was launched with the objective to encourage and foster interdisciplinary debate and discussion on technological progress. The focus of Delphi is specifically dedicated to stimulating exchange around the potential gains, challenges and questions that are provoked by emerging technologies, such as Artificial Intelligence (AI), autonomous weapons and robotics.

The previous issue saw a variety of constructive-critical perspectives regarding emerging technologies, such as automated weapons, applications of AI in music therapy and online social networking sites. This issue welcomes interdisciplinary contributions from the fields of law, the philosophy of technology as well as from industry representatives and policymakers. Moreover, this issue covers perspectives on a variety of technologies and related questions. From the potential dangers of cyber warfare technology, to the potential gains of AI, this issue covers the full range of Delphi's central objective.

This issue also welcomes a new section: *Outlook*. In the Outlook section, experts from wide ranging technology-related fields are requested to express their views regarding a central theme connected to emerging technology. For this issue we asked our contributors to examine the business value of ethical tech. The concept is as hard to define as it is interesting to investigate which makes interdisciplinary analysis particularly fruitful.

Providing an ethicist's viewpoint, Steffen Augsberg argues that ethical technology can be seen as technologies which are developed with an anticipation of ethical concerns. Examples include the growing awareness of the impact of climate change and concerns about our increasingly data-driven environment and connected debates around privacy. Clearly, as he argues, there is a business model for manufacturers who incorporate such values into their technologies or develop technologies that tackle those issues. As Ida Rust puts it, it is well imaginable that products will have a tag in future that says 'ethically approved'. This view is also reflected in Paul Nemitz's analysis of Apple's success in the stock markets. According to Nemitz, Apple has gained a competitive advantage by heeding the ethical concerns of its customers and users in its design process. But ethical technology cannot be reduced to products which anticipate societal attitudes towards the big ethical questions of the day. As Siri Beerends remarks, it may also be useful to ask whether or not technologies, such as advanced AIs, can themselves be ethical in the way humans are. That is, could AI-systems engage in the complex and multi-layered ethical situations we find ourselves in? And perhaps more crucially, could they do so in a 'human' way?

A part of the answer could be found in the Startup Digest of this volume, which features two businesses explicitly aiming to make a positive impact on society through the application of emerging technologies. Aiming to promote the 'art of making data useful', Dataconomy advocates for a better understanding of data science and looks to enhance 'data literacy'. Meanwhile, Gapsquare's goal is to eradicate unfair payment

structures by utilising AI and in that sense aligns with Augsburg's definition of ethical tech. This because it identifies payment structures in business, which are unequal because they are based on, for example, gender or race. In short, it is a technology that anticipates developments in ethical attitudes. However, it is also an ethical technology in the sense that it does engender biases itself. It is not a neutral technology but reflects certain ethical dispositions and engages in ethical questions. For example, it needs to decide what equal payment is and what it is not. Gapsquare argues that it has found a way of tackling potential issues by constantly reviewing their systems. As such, and as Siri Beerends suggests, it is ultimately up to humans to make decisions on these crucial questions.

The debate regarding AI and the ethical questions it provokes, continues in the Review section. What AI is, what ethical questions it provokes and how experts should deal with them, is the theme for discussion in Paula Boddington's book, *Towards a Code of Ethics for Artificial Intelligence*. As the reviewer shows, Boddington has delivered an important contribution to the rapidly growing field of AI-ethics. However, it remains somewhat unclear who the addressee of book is. Nevertheless, as Naudt shows, Boddington's book does succeed in opening up new perspectives in a field that is becoming more and more concerned with ethical questions.

The second book review, by Caio Weber Abramo, explores yet another important domain in emerging technology: bioethics. Abramo has delivered a review of Melinda Hall's book on bioethics and enhancement, *The Bioethics of Enhancement: Transhumanism, Disability, and Biopolitics*. Hall's book itself is a critical assessment of transhumanist discourse and the transhumanist's focus on overcoming human embodied vulnerability. According to Hall we should not focus on enhancing our embodied being, but rather look for political and social ways to improve our current condition. Critical as Hall's contribution is, Abramo feels that she does not go far enough. In reading Abramo's article we find an interesting and thought provoking argument for this position. A position that also makes clear why Hall's book is an important book to read if we seek to understand the debates in the field of bioethics.

In the Report section we return to the subject of AI. Specifically, Jessica Schmeiss and Nicolas Friederici have investigated what is needed to drive the development of AI in Germany and critically examined the German government's 'AI made in Germany' agenda, which aims to make Germany a world leader in the development of AI. What makes the contribution particularly relevant is its concreteness. The study found that there are three different areas in which Germany could become a leader in the development of AI. Firstly, it could contribute in developing AI-based technology for other firms, which created the demand for it in the first place. Secondly, startups could develop AI technology for automating tasks that are currently performed manually. Finally, AI could function as a solution providers. That is to say that it could that provide entirely new solutions and create new products and demands. According to Schmeiss and Friederici, this field holds the most potential and should therefore receive the lion's share of available funding.

Paul Nemitz's and Arnd Kwiatkowski's article is also about assessing the future possibilities of new and emerging technologies from a practical perspective. Their article investigates whether it is feasible that large and new platforms, comparable to

Whatsapp and Facebook, could be established in Europe. They have focused on the areas of health, public administration and education, and made some concrete suggestions on how to optimise circumstances so that the establishment of platforms in these areas could be achieved. Again, this article contains some concrete suggestions in that direction and is for that matter a nice starting point for policymakers in this field.

By contrast, the article by Nolen Gertz, Peter-Paul Verbeek and David Douglas, is perhaps the most philosophical one in this issue. In this thought provoking piece, the authors use insights from Technical Mediation Theory (TMT) to show that cyber technologies do not merely produce effects in cyberspace. What happens in cyberspace does not stay there; no dualism between a 'real' and a 'virtual' world exists. Cyber warfare technologies do have a profound impact on our 'real lives' as well. When that has been shown, it does become possible to draw an analogy between cyber warfare technology and biological warfare technologies. The latter have been banned by the Biological Weapons Convention (BWC) as weapons of mass destruction with uncontrollable effects. But since cyber technologies belong, like biological weapons, to our everyday life, their use and further development should be banned altogether. The article is notable for the careful analyses that supports this conclusion.

Maja Brkan has offered a perspective from the field of law, focusing on a highly topical subject, the impact of AI on democracy. Her article offers an assessment of the detrimental impact of social bots (algorithmic driven social media accounts) and targeted advertisements on online social networks. These technologies could have a significant impact because of their scale and the lack of some point of (human) verification. This goes also for the emerging phenomenon of 'deep fakes', the manipulation of material which makes the content seem real or expressed by an actual person. Although it is not always clear what the effect of deep fakes and other online technologies could be, Brkan tends to conclude that these forms of AI are 'silently taking over democracy'. In her article we find an important and convincing account of the need to include some form of transparency in the AI's we use in democratic processes.

The second issue of 2019 is Delphi at its best in that it offers a wide ranging forum in which philosophical, legal and business-inspired perspectives meet in order to reflect on the profound and manifold ways in which technologies are changing our society and modes of being.

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