THE FUTURE OF ARTIFICIAL INTELLIGENCE: POLICY RESEARCH PERSPECTIVES

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1. Expectations of how Artificial Intelligence (AI) will influence policy research

Policy research deals with the policy cycle encompassing problem definition, and policy development, implementation, enforcement and evaluation for different policy domains. On the one hand, this research field empirically describes and analyses how the phases of the policy cycle are processed by relevant social actors in interaction with industry, the media and civil society. On the other hand, policy research is concerned with the issue itself, i.e. the reasons for success and failure of policies that have or will run through the process. Here, the research field offers scientific policy advice including ex-ante evaluation and assessments of potential futures, options, developments, and scenarios for policy domains to inform political debates and decisions. It is this latter function AI already has and will further influence policy research.

There is a tension in all phases of the policy cycle outlining the fundamental challenge in this area: political planning and steering for desirable futures is torn between the requirements for planning and the uncertainty of its effects. Usually, the implementation of policy measures for realising planning objectives is a risky enterprise: in complex policy domains, non-linearity exists between suggested interventions and a desired effect. Nevertheless, political planning means to consider and organise a chain of activities and measures to realise a specific objective. Drafting a plan implies scenario analysis and evaluation, i.e. producing knowledge about the future concerning the most likely developments. This in turn allows for preparation to face potential challenges to take place. Of course, such knowledge has obvious benefits, but crucially depends on finding reliable answers to "what-if" questions for evaluating different scenarios before implementing policy measures in empirical reality (Ahrweiler, 2017).

Computational models are increasingly applied by policy research to assist in developing, implementing and evaluating policies (Gilbert et al., 2018). As cause and effect are getting harder to pinpoint with increasing systemic complexity, AI is frequently used to unravel structures of interdependency and thereby improve the advice capacity of policy research. For example, systems mapping approaches such as Fuzzy Cognitive Mapping build qualitative models with different structures and assumptions to represent the situation with and without a policy intervention, thus evaluating different out-

comes. Alternatively, techniques such as Logic Mapping are used for ex-post evaluation of policies. These test how a certain policy might have affected an outcome of interest, which supports common theory-based approaches to policy evaluation such as the Theory of Change.

2. AI-induced changes in society and politics

However, it is not only policy research that is supported by AI. These applications have, in fact, already directly seeped into policy practice, and are thereby changing the ways in which policies are processed (Milano et al., 2014; Desouza, 2018). With this change in policy practice, effectiveness, success rates, and applicability of policies are improved, which means that the targets of policy – the policy domains, which principally encompass all parts of our society – are changing too. Through AI-supported political change, this technology enacts AI-supported social change.

In recent years, a range of projects were encouraged that promoted interconnectedness between national and supranational agencies (EU eGovernment Action Plan 2016-2020): the ongoing digitalisation of public administration, advancing eGovernance and the evolution of Smart Cities are all relevant bases for the impact of AI on policy making. One major consequence of increasingly interconnected systems is that government agencies find themselves acting in highly complex social systems. In order to act and react effectively and efficiently within these networks, actors are required to understand the complexity and implied characteristics of a given system. Understanding and managing (within) complex social systems becomes a key skill for any actor involved, as unintended side effects are ever-present.

In policy practice, AI already helps policy makers find the right policy measures to act on a certain situation, for example, by evaluating complex interrelations of major sectors in national economies or by helping candidates in their election campaign via big data analysis. The increase in computing power and access to big data lets other scenarios become conceivable reality. By means of interconnected databases and sensor-supported Smart Cities, decision makers could be able to make ad-hoc decisions informed by simulation models based on real-time data. Although the realisation depends on several factors (e.g. CPU efficiency and legal frameworks), research is already engaged in theoretical approaches to simulation models based on citizen big data for population dynamics analysis.

As AI helps humans keep complex social systems manageable, one of the most important questions in years to come will be to decide if AI should remain a tool for policy making or if it should become a decision-making authority by itself. If AI can help to run a successful campaign for candidates via big data analysis, it may someday also articulate a political agenda of its own. While this thought might provoke scepticism, and rightfully so, AI has already followed through with similar developments, graduating from assistant to decision maker in other contexts of its application.

The current example par excellence where the hypothesis of AI-supported policies enacting AI-supported social change can most strongly be illustrated is the Chinese Social Credit System: As a demographically growing and economically expanding nation, China feels challenged to maintain social cohesion and turns to AI for controllability. With an AI-System monitoring its citizens' behaviour and opinions, the government is establishing a social meritocracy aligned with its own perspective of good citizenship. It is not unlikely that hopes of rationalisation and efficiency gains might prompt policy makers to implement such systems elsewhere.

3. Policy responses required

AI is confronting democracy with the imponderables of the digitalised 21st century. The capabilities of AI will transform policy making on a large scale. It is time to act; to choose between the desire for more state control and the chances of increased participation. Especially in the context of government action, AI has the potential to support or harm democracy and society's cultural values.

On the supportive side, AI has tremendous potential to organise and optimise the distribution of public goods, thereby supporting public welfare. Policies need to invest in the technical management of these social development contexts; for example, more publicly funded research programmes need to address the capabilities of AI in multiple stakeholder contexts. Furthermore, AI empowers people to access more information, more data, and more knowledge sources than ever before. It also enables people to interact and communicate with more people than ever before. Policies need to recognise and react to the resulting potential for opinion formation and increased participation of citizens in the democratic process.

On the harmful side, AI can be used for anti-democratic top-down control, or

for realising manipulative or hidden agendas of lobbyists: Opinion formation, participation in social movements and networking increasingly take place in digital environments that are owned by private companies. State influence on these social mechanisms has diminished considerably. This environment is highly vulnerable to manipulation and influencing by AI programmes. Policies need to be established that encourage and implement a continuous ethical debate about core societal values and how to nurture them in a digitalised world.

References

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