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AI and the Electoral Process

I am a political scientist at the University of Duisburg-Essen, but since a couple of years I am being delegated to the Center for Advanced Internet Studies in Bochum. As a research professor I am heading the program on „Digital Democratic Innovations" and one of our focus topics currently is „digital decision making" – and basically, that´s why I am here :-)

Today, I will start my intervention from my disciplines´ point of view – that means, I start with severing the „electoral process" from campaigns and other processes of political information and communication before an election. In the focus of my remarks is the organization of elections and the multiple ways how citizens are casting their vote and how the votes are counted and processed. Thus, I do not bring a specific technological perspective on AI to the table – I am focusing on the political and institutional environment instead.

That said, I want to turn to the modernization of elections – be aware that I come from Germany, where our main voting technology still is… paper and pencil. And, as you probably have learned during the last year, we are totally able to mess up elections while using this rather oldschool set of technologies. (Just last week the constitutional court decided that it is necessary to repeat last years Bundestagswahl in many electoral districts in the city of Berlin. And the state election for the Berliner Abgeordnetenhaus even has to be repeated in full until early 2023).

I am doing research on modernizing the vote since a couple of years, and the usual focus is the use of computerized voting equipment on election day: that comprises voting machines displaying some sort of ballot to the voters who then make their decision and in return get a receipt („paper trail"). But there are also machines that are used only for controlling the voter´s identity or only for tallying the vote. More recently there have been added portable solutions to organize the entire workflow on election day and make the process more comfortable for poll workers. But who am I telling this?

As you all know, there is a huge variety of technologies involved in current electoral processes – while in the US during the next couple of days still ballots from the midterm elections will be counted (and counted again), the presidential election in Brazil was completed just three hours after the last voter had cast his or her ballot. Although these two recent examples show different paths of electoral modernization, they have something in common: they have to find trust in the electorate. So - how to create that public trust? Which institutions help to secure the vote and which regulatory strategies lead to a secure and publicly accepted electoral process?

When you compare the strategies you will find similarities between the two states, although they use different forms of voting technology. And we can also broaden the perspective and include Estonia into this micro-sample: as Oliver Kask mentioned earlier today, the votes can be cast and processed in an online environment, which adds even more complexity to the table (and it must be open to swift changes in a speedy matter). Just to make things clear (again): in none of these electoral processes any form of „artificial intelligence" or „algorithmic decision making" is involved – yet. Up to now, modernizing the vote is focusing on specific software solutions, running on hardware that is not connected to the Internet (with the exemption of Estonia).

All of this electoral processes are fully functionable, yet they are often and widely criticized, especially, when there are close (or very close) races around. A couple of weeks ago, you all probably witnessed Jair Bolsonaro hesitating to concede his loss, although the voting process in Brazil was executed very smoothly. And today, already one week after the US midterm elections, we still look nervously to states with close races for a house seat or some other

important public office. What those processes definitely need is trust – trust among the electorate and trust among the candidates and political parties (the latter is especially the case in the US).

And thus, my main question for this intervention is: Does the use of AI systems contribute to creating more trust in an electoral process, that is already using some sort of technology? It is my notion that computer-supported elections have to be developed very carefully, in an incremental process, improving rather one step at a time than to completely overthrow a long-time learned and culturally embedded system.

All this leads up to the role and importance of Electoral Management Bodies – are these, *are your* organizations capable of installing, monitoring and – if necessary – improving or even cancelling new forms of voting and organizing the electoral process? In my view, this is a key question that has to be addressed before we try to assess and discuss the use of AI in the context of voting.

Now let me share some observations of the three cases I already mentionend. In Brazil, the Supreme Electoral Court (Tribunal Superior Eleitoral) shields the entire electoral process at the highest state level; in Estonia, the national election authority (Riigi valimisteenistus) has been established with special responsibilities for organizing and developing elections while a different structure cares for regulatory oversight; and in the United States, the Election Assistance Commission supports executive authorities responsible for conducting elections in the states, where the Secretary of State enacts regulatory oversight.

On a smaller level, the state of California has developed the most advanced institutional framework to monitor and maintain digital voting structures. Regulatory power is vested in the office of the Secretary of State, currently held by Shirley N. Weber of the Democratic Party. The *Office of Election Cybersecurity* tackles concrete problems connected to digital security issues, including dis- and misinformation or „electoral rumor control". Besides that, the *Office of Voting Systems and Technology Assessment* (OVSTA) is responsible for certifying voting equipment of all sorts. They keep track of technology used onsite at polling places, such as ballot marking and ballot printing devices or tallying equipment.

In addition to these public institutions, commercially operated testing facilities examine voting machinery intended to use in upcoming elections. In sum, over the past twenty years a functional network of interconnected points of control has been installed, guaranteeing the integrity of the electoral process and restoring public trust in the system.

All these multi-level regulatory systems do work quite well when it comes to the use of computerized voting equipment – but will they also be able to supervise the usage of AI systems, added to the existing systems? These public-private-partnerships are observing, improving and maintaining the digitized electoral process by creating transparency – they open up the process at a certain point of time before closing it again in order to secure the system. To do so, they need to be supported by a robust institutional setting that was developed and refined over the years. In return, public trust in the system is created – voters feel safe while using the system and casting the vote not into a „black box", but maybe into a „grey box". They do not exactly know what is happening behind the scences, but they feel comfortable the way things work.

(Basically, that is exactly the situation in Germany: The „Briefwahl" – mail-in ballots – is our weapon of choice when it comes to voting technology. As the system is up and running since the 1950s, it is „culturally learned" and agreed upon by most if not all citizens. But still – we do not exactly know whether the ballot dropped into a mailbox is delivered to the polling station and gets finally counted. We suppose so, *we trust the system*. And I might add: I am not convinced that this system is functioning so perfectly like most Germans probably think).

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So, let´s get back to the question of AI usage within the electoral process. To integrate new (and maybe helpful) systems, we do not only have to look into the technical features of those systems, but we have to think about how to integrate them into the system of regulatory procedures. This will be not an easy task: as the three discussed cases indicate, it is quite complicated to get hold of the usage of „traditional" computerized voting equipment. It probably will be much more complicated to set up control units and routines to approve AI systems in the electoral process.

Creating and maintaining public trust in the election system is a key function of Electoral Management Boards – thus they (*you*) would need to build up resources that are trustworthy and capable of reviewing AI systems on a regular basis during an election cycle. An EMB also had to pursuade not only the electorate, but also political actors that AI systems really would improve and/or ensure the existing process.

Based on this thoughts about the complexity of modernizing the electoral process, I see at least two huge challenges coming up:

1. Any form of AI added to the electoral process has to significantly improve the workflow of that system. Simultanously, it has to provide a basic level of transparency for the voters.

2. The Electoral Management Board has to create an institutional setting that is able to hold up (or to restore) public trust in the electoral process.

Only if those key challenges can be overcome, the future implementation of AI systems into the electoral process might be a good idea.

So, from a political scientists point of you, I still remain sceptic about the implementation of AI into the electoral process. Ask me again tomorrow (or maybe later) whether I have changed my mind :-)

Thank you for your attention.