

Special Issue Introduction



Tom Kane



Nick Novelli

Technology for Governance, Politics, and Democracy

The aim of this special issue is to evaluate the social impact and social implications of new and emerging technologies on governance, politics, public administration, and policy-making; and to evaluate the future prospects of digital democracy, and its transformative potential for increasing public engagement, community empowerment, and social entrepreneurship.

Innovative Information and Communication Technologies (ICT) already play an important role in e-governance and digital democracy, both at national and community levels. There is unprecedented opportunity for community collective choice, whereby citizens who are affected by a set of governing rules can help to select policy options, rank spending priorities, and can, in partnership with their local government representatives, participate in the approval, implementation, modification, and application of those rules. Parliaments can be petitioned by citizen groups to insert debates into the legislative process. Social networking ICTs make it possible for politicians and political parties to engage directly with citizens at every stage

of the democratic process. But not all their effects are positive.

Although ICTs for governance, politics, and democracy themselves are neutral with respect to “good” or “bad” outcomes, tool design (and the intentions behind the design) are never neutral. Moreover, these digital technologies, unlike other

tools, are never neutral with respect to influence and control. Thus, for example, although it is possible to engage communities in broader and more meaningful political participation, it is equally possible to manage, distort, or manipulate the dissemination of information through technological and/or economic mastery



of the platforms for communication. There has been growing societal concern that black-box algorithmic systems of social networking have, to varying degrees, been harmful to democratic principles. The last four yearly statements of the *Bulletin of Atomic Scientists* each address the issue of misinformation and social networking during political campaigns. The 2018 statement (2) offers a detailed warning:

“The Science and Security Board is deeply concerned about the loss of public trust in political institutions, in the media, in science, and in facts themselves — a loss that the abuse of information technology has fostered. Attempts to intervene in elections through sophisticated hacking operations and the spread of disinformation have threatened democracy, which relies on an informed electorate to reach reasonable decisions on public policy — including policy relating to nuclear weapons, climate change, and other global threats. Meanwhile, corporate leaders in the information domain, including established media outlets and internet companies such as Facebook and Google, have been slow to adopt protocols to prevent misuse of their services and protect citizens from manipulation. The international community should establish new measures that discourage and penalize all cross-border subversions of democracy.”

We note significant new commitment from the global ICT companies to address these concerns (1). The articles in this special issue, coming from a broad range of disciplines, includ-

ing political science, politics, philosophy, data science, engineering, and artificial intelligence offer insight, suggestions, and an optimistic perspective about the practical steps that can be taken to ensure democratic values are defended and protected where technologies are involved in support of citizen democratic rights.

Caroline Lucas, MP, draws our attention to the need to understand the new kinds of businesses that companies such as Facebook and Google represent. The author provides a clear deliberation on the necessity for finding new legislative procedures that will bring our democracy “up to date” to cope with websites and social networking groups where people can be influenced during election cycles. There are already concrete examples of these technologies being used in illicit ways, and Lucas provides concrete suggestions of legislation and regulatory reforms that could do the crucial job of keeping these abuses in check. Lucas reminds us that “politics is about power” and that some people will do almost anything to get it.

Diaconescu asks us to address issues of human meaningfulness as we deploy more AI-enabled technologies and strive to be ever more efficient in the Information Society. The author questions the implicit values behind current technological developments and asks us to place human values into all issues of design. Diaconescu highlights a number of disturbing inversions of purpose and suggests that meaningful changes in how we develop, value and use technology are required. The author argues that required change will not come about through any simple, immediate reform but will rather arrive through a series of piecemeal alterations in approach acting holistically over time.

Manville and Ober take a broad overview of where we are with de-

mocracy and suggest that although our democratic systems show elements of crisis, we should use the issues we face to propel us towards newer, more effective forms of democracy. The authors suggest that we have been developing democracy for millennia and, using a metaphor from software, suggest that we are on our way towards developing and deploying the next system of democracy, “Release 4.0.” For this new form of democracy to flourish in the 21st century, the authors present four design principles for the required system. The paper provides a detailed and fascinating historical look at the development of democracy, tracing democratic theory back to Aristotle. With this historical perspective, they explore how we can adapt democracy for a radically different world while maintaining the crucial ideas it was founded on.

Pitt, Rychwalska et al. make a compelling case for the need for a generative meta-platform for social networking, democratically maintained, and cooperatively operated beyond the purview of offerings from globally successful ICT companies. The authors identify four broad categories of social media platform users and present a holistic view of the need to generate social networking platforms that belong, democratically, to the users who use them. The authors envisage platforms that serve their communities, where businesses are not allowed to extract information assets from the activities of users of the network — privacy, functionality and data ownership lie with the users.

De Brasi highlights the dangers of confirmation bias in the personalization algorithms of “Google Search” and “Facebook Feeds.” Regarding the issue of social media services being used as part of democratic activities, he makes the case that many forms of democracy require epistemic

standing that the personalization systems of social networking corrode. Even if it's not intentional, when all the content one sees is algorithmically curated, it can reinforce false beliefs and prevent exposure to alternatives. Observing that this is threatening to democracy he makes a compelling case for the need for minimal levels of democratic competency for citizens and for direct citizen involvement in the democratic governance of technological tools that threaten democracy. Conditions for democratic regulation are then proposed.

Kane views "Facebook for Politics," a highly successful social networking service for political campaigns, through the lens of John Searle's "Chinese Room" metaphor and highlights the difference in scale between tasks such as answering questions in a foreign language and satisfying a political campaign customer during a democratic election. The paper presents a case for treating the activities of such powerful tools, which are scaffolded and partnered by professionals, as the activities of artificial persons that need to be monitored and policed in real time. Ethical questions surrounding the operation and management of election-influencing artificial persons are presented in the paper. It raises interesting and important questions about the nature of responsiveness in the digital age.

Srinivasan, Sangwan et al. draw our attention to an emotional analysis of Twitter feeds whereby the authors were able to plot how happy Twitter users appeared to be with the performance of the presidential candidates in the 2016 U.S. presidential elections. The analysis follows the course of the election campaign and graphically highlights the change in fortunes of Hillary Clinton's campaign in the crucial final two weeks of the election. The authors present a way of plotting the emotional impact of election activities on communities of Twitter

users. This highlights just how much information about us, down to our personal emotions, can be gleaned from our social media profiles.

Hodson addresses the consequences of Twitter feeds replacing news feeds in eight local communities in Canada that are outside of major urban centers. His analysis shows that while hashtag news feeds in Twitter attempt to fill the news gap that is felt in local communities that are short of local news broadcasters, they fail to provide challenging information or substantive discussion on locally-relevant political news, instead only promoting partisan rhetoric. He notes that "these discursive communities may even be detrimental to democratic discourse, in the sense that they spread misinformation or conspiracy." The author presents a research question of the need to explore best use of Twitter to support political event coverage.

Varshney highlights relationships between information surprise, information content, and the size of message parcels that can be transmitted. The notion is that to attract attention, a message must exhibit some surprising features. Its key result is that when it is important to keep a level of surprise high, that the surprise itself trumps the importance of the information that is being highlighted. This has interesting and potentially troubling implications in terms of the types of social media communications that will successfully get attention and how informative they will be to their audience.

We are extremely grateful to all the contributors for taking the time to develop and present their work in this special issue. Taken as a whole, these papers articulate a broad range of concerning issues, show us practical means for framing the issues, and pose vital questions that are raised as we develop ICTs and

as we seek to evolve democratically. Although the concerns are arresting, and can seem overwhelming, the collective contribution of these papers brims with optimism. We see that we are faced with many problems, but also that we are now aware of them and can even identify promising solutions — what remains is just to put those solutions into practice. Furthermore, the professional range of contributors and contributing disciplines suggests that, in tackling these issues, a new era of ICT research programs is upon us: one that will see research questions being explored by teams balancing skills from the sciences, the arts, the humanities and the engineering disciplines. This interdisciplinary dialogue is promising, as only through pooling our knowledge and working together will we be able to ensure that technology is a force for good, not harming but benefitting us and our political systems.

Acknowledgment

We especially acknowledge the support of Jeremy Pitt — for his vision in seeing the potential of this special issue, for his direct contributions, and for his editorial assistance during its development.

Guest Editor Information

Tom Kane is with the School of Computing, Edinburgh Napier University, Edinburgh, U.K.

Nick Novelli is with the School of Philosophy, Psychology and Language Sciences, University of Edinburgh, U.K.

References

- (1) M. Burgess, "Apple joins Facebook, Google, Microsoft, IBM and Amazon in OpenAI," *Wired*, 2017; <http://www.wired.co.uk/article/ai-partnership-facebook-google-deepmind>.
- (2) J. Mecklin, "It is 2 Minutes to Midnight: 2018 Doomsday Clock Statement," *Bull. Atomic Scientists*, 2018; [https://thebulletin.org/sites/default/files/2018 Doomsday Clock Statement.pdf](https://thebulletin.org/sites/default/files/2018%20Doomsday%20Clock%20Statement.pdf).

