

# DIGITAL DEMOCRACY

## How Digital Technology Is Changing Democracy and Its Study

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### Abstract

Digital technology affects how democracy works by influencing political mobilization and campaigns, amplifying political polarization, changing the tools of government, and threatening the survival of authoritarian regimes. Moreover, digital technology shapes the way social science is done, taught, and disseminated. It is adding big data and machine learning to social science toolkit; it is fostering research transparency, collaboration, and interdisciplinarity; it is adding data science to social science curricula; and it is changing how research findings are disseminated beyond academia.

## 1 Digital technology affects how democracy works

Recent advances in digital technology have started to have a profound political impact. Social media, and the internet more in general, have played an increasingly important role in shaping political processes (Farrell 2012), with wide-ranging implications for the way democracy works—including Swiss democracy.

### 1.1 Digital technology influences political mobilization and campaigns

Digital technology, including social media and big data, have played a crucial role in US elections since Obama's first presidential campaign in 2008 (Wilcox 2008). They change the way political actors mobilize support, as well as the ways citizens participate in politics. European parties have not been among the early adopters but have started to catch up. New forms of mobilization and participation are a key topic in political science research, as they are directly relevant for political processes in our societies. Recent examples geographically close to us include the campaign against the SVP's "Durchsetzungsinitiative," which relied heavily on social media, and the new platform [wecollect.ch](http://wecollect.ch), just launched by Swiss left-wing groups to facilitate the collection of signatures for popular initiatives and referenda.<sup>1</sup> In a context of increased electoral competition and decreasing signature requirements, this innovation (which right-wing parties will no doubt imitate) is likely to further increase the strategic usage of direct democracy as an electoral strategy (Leemann 2015), contributing to the "disenchantment" of Swiss democracy (Bochsler, Hänggli, and Häusermann 2015).

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<sup>1</sup>[Neue Zürcher Zeitung](#), 13.4.2016.

## 1.2 The digital divide may amplify political polarization

Digitalization and automation profoundly change the social structure, in particular by threatening routine middle-class jobs while fostering high-skilled jobs in post-industrial sectors (Autor 2014; Goos, Manning, and Salomons 2009). The political implications of the digital divide—at least in the short run—include increased inequality and political polarization between winners and losers of this process in the short run. Accordingly, political elites have become more polarized in many countries, including the US (McCarty, Poole, and Rosenthal 2006) and Switzerland, where divergence among political parties is very high compared to other European countries (Bochsler, Hänggli, and Häusermann 2015). Polarized environments change how citizens make decisions, for instance by decreasing the impact of substantive information (Druckman, Peterson, and Slothuus 2013). Although the internet is not the root cause of polarization, it may have contributed to its exacerbation by making it easier to express political views in public and to reduce the range of opinions one is exposed to (Farrell 2012). However, the polarizing effects of social media may have been exaggerated (Gentzkow and Shapiro 2011; Hargittai, Gallo, and Kane 2008).

## 1.3 Digital technology changes the tools of government

Governments are increasingly relying on big data for decision making (OECD 2015; White House 2014). Furthermore, the “Open Data” movement asserts that governments should make data public and freely accessible to promote transparency, innovation, and efficiency.<sup>2</sup> Many authorities have embraced this vision.<sup>3</sup> Digital technology is also changing how people form opinions and vote, two topics that are actively researched at the *Zentrum für Demokratie Aarau*.<sup>4</sup> And of course, governments rely heavily on digital technology to enhance their surveillance capacity. The referendum against the *Nachrichtendienstgesetz*<sup>5</sup> in Switzerland, not to speak of the international outrage against the US’s National Security Agency’s practices, shows that these practices are highly controversial.

## 1.4 Digital technology threatens the survival authoritarian regimes

Control over the internet is essential for authoritarian regimes. Information technologies facilitate collective action and were instrumental in the diffusion of protests during the Arab Spring (Aday et al. 2013; Lynch:2011kk; Hussain and Howard 2013). Social media can increase public awareness of electoral fraud (Reuter and Szakonyi 2015). Thus, it is no surprise that authoritarian regimes routinely manipulate internet access (Gohdes 2015). At the same time, they are compelled to walk a fine line between censorship and openness (King, Pan, and Roberts 2013, 2014; Lorentzen 2014).

## 2 Digital technology is changing the way social science is done, taught, and disseminated

The digital revolution is shaping the social sciences in several ways, including the kinds of tools that we use, how social scientists work together and replicate each other’s work, how digital technology is integrated in social science curricula, and how digital technology is used to communicate beyond academia.

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<sup>2</sup><http://opendata.ch/>.

<sup>3</sup>For example, <https://opendata.swiss/en/>; <https://www.stadt-zuerich.ch/opendata>.

<sup>4</sup>[http://www.zdaarau.ch/de/forschung/fsp3/e\\_dc.php](http://www.zdaarau.ch/de/forschung/fsp3/e_dc.php).

<sup>5</sup><http://www.vbs.admin.ch/internet/vbs/de/home/themen/ndb/uebersicht.html>, <http://www.nzz.ch/schweiz/schnueffelstaat-gegner-sammeln-gegen-unterschriften-fuer-referendum-1.18670705>.

## 2.1 Digital technology is changing the social science toolkit

We are “witnessing a major shift in social science research methodology” (Alvarez 2016: 1). On the one hand, social scientists are taking advantage of “big data” in a number of different ways, for example by using social media data to measure conflict dynamics (Zeitzoff 2011), estimating ideology (Bond and Messing 2015), studying the diffusion of political information (Halberstam and Knight 2014), or conducting experiments on political mobilization (Bond et al. 2012). Of course, big data is not a panacea and their usage needs to consider many theoretical (Clark and Golder 2015; Patty and Penn 2015), methodological (Hargittai 2015; Nagler and Tucker 2015; Titiunik 2015), and practical (Crosas et al. 2015) challenges. Moreover, digital technology is enabling researchers not only to exploit available big data, but also to actively produce them using crowd-sourcing (Benoit et al. 2016). And finally, machine learning is enabling researchers to analyze complex datasets, large and small. Text analysis is a prominent case in point (Grimmer and Stewart 2013; Hopkins and King 2010; Roberts, Stewart, and Airolidi 2016; Roberts et al. 2014).<sup>6</sup> Political scientists at the University of Zurich are currently conducting research, including three SNF-funded projects,<sup>7</sup> applying digital techniques such as crowd-sourced coding, automated web-collection techniques, topic models, intelligent annotation interfaces, and meta-data extraction. They are also working with the Swiss Electoral Studies project<sup>8</sup> on the automated analysis of tweets, open survey questions, and media coverage of federal election campaigns.

## 2.2 Digital technology is changing social science research practices

Digital technology has prompted a shift from individual work to larger scale, collaborative, increasingly interdisciplinary projects, often pursuing problem-solving goals, which sometimes requires new types of structures beyond traditional departments organized along disciplinary lines (King 2014). Digital technology has also facilitated efforts to increase the transparency of social science research by promoting norms of data sharing and replicability.<sup>9</sup>

## 2.3 Digital technology is changing social science curricula

Digital technology is taking a more prominent role in social science curricula. Stanford’s political science department, for instance, recently introduced a data science track in its undergraduate program.<sup>10</sup> The University of Zurich’s Department of Political Science offers a data-driven political journalism track in its MA program,<sup>11</sup> which has produced a start-up, *Politan*,<sup>12</sup> founded by recent graduates.

## 2.4 Digital technology is changing how social scientists communicate to the public

Digital technology, and especially social media, have changed how social scientists disseminate their ideas beyond academia (Healy 2015). It has removed traditional intermediaries between scholars and the public, created new possibilities for discussion and exchange, and made it easier to measure public outreach. Scholars can engage in these activities individually, but their impact is greatly enhanced by

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<sup>6</sup>See also *Political Analysis*’ virtual special issue on “Recent Innovations in Text Analysis for Social Science” ([http://oxfordjournals.org/our\\_journals/polana/text-analysis-virtual-issue.html](http://oxfordjournals.org/our_journals/polana/text-analysis-virtual-issue.html)).

<sup>7</sup>SNSF No. 100017-146104, SNSF No. 10017-143191, and NCCR Democracy IP 6.

<sup>8</sup><http://forscenter.ch/en/our-surveys/selects/>.

<sup>9</sup><http://www.dartstatement.org/>.

<sup>10</sup><https://politicalscience.stanford.edu/undergraduate-major/major/data-science-track>.

<sup>11</sup><http://www.ipz.uzh.ch/de/studium/MA/tracks/dj.html>.

<sup>12</sup><http://www.politan.ch>.

blogs such as *The Monkey Cage*<sup>13</sup> or the new SNF-funded platform *DeFacto*,<sup>14</sup> located at University of Zurich's Department of Political Science, which offer accessible summaries of academic research and expert opinion on topical issues.

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<sup>13</sup><https://www.washingtonpost.com/news/monkey-cage/>.

<sup>14</sup><http://defacto.expert>.

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