Executive Summary

As more and more political debate takes place online, the software that hosts our conversations have come under fire for exacerbating polarization, spreading fake news and harassment. The quality of democracy has unquestionably been undermined, but to understand how we must examine each platform separately.

This article explores how three prominent platforms shape the public conversation by examining how their affordances – the actions they make possible – each generate a different social dynamic. The dynamic on Facebook, for example, is not unlike a school cafeteria, where likeminded people group together in suspicious isolation of other groups. Twitter, on the other hand, resembles a crowded public square where the size of the throng can often result in antisocial behavior. Wikipedia is akin to the world’s largest library, both in the scale of the information and in the rules that govern behaviour inside.

The insights generated help equip us to improve the quality of democracy as the internet expands political participation. Governments, citizens and technologists all have a role to play in adapting what Alexis de Tocqueville called the “art of associating together” to the digital age.
About the Authors

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At Global Affairs Canada he was director of innovation and director of Iran/Iraq/Arabian Peninsula from 2012-13. A veteran of ‘hotspot diplomacy’, he was part of the United Nations operation in Somalia in 1993, and also served in Egypt (1996-8), as chargé d’affaires in Iraq (2003-5), in Afghanistan (2008-10) as deputy head of mission in Kabul, and as Canadian representative in Kandahar. He is a graduate of Georgetown University’s School of Foreign Service (1989-93), holds a MPhil International Relations from Oxford (1998-2000), and spent a sabbatical at Stanford University from 2010-11 as a visiting scholar in liberation technology at the Center for Democracy Development and the Rule of Law.

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Software is Disrupting Democracy

Around the world, the faith that citizens have in democracy has been undermined. As often as not, the tools chipping away at its foundations are software platforms.

In country after country, the polarization of political opinion has become so acute that many citizens can no longer agree to disagree. Indeed we have entered a period of "post-truth" in which it seems impossible even to agree on what objective reality is. As it appears increasingly unlikely that citizens can reach even a minimal degree of consensus about what the purposes of government should be, many abandon the political parties attempting to bridge divides and instead opt for populists that feed off societal divisions. In opting for Brexit or electing the Front National, the Alternative für Deutschland or the Movimento 5 Stelle, people are voting as much against fellow citizens with irreconcilable views as they are voting against the political institutions created to bridge those divides.

The means by which these societal ills of polarization, post-truth and populism increasingly manifest themselves are the various software platforms that have become ubiquitous in our lives. We see polarization in our Facebook newsfeeds, which portray a world completely unrecognizable to our neighbours on the other side of the ideological spectrum. A quick Google search about a controversial issue will often reveal fake news generated by one side or other of the debate. And the world’s most prominent populist, Donald Trump, built the base that delivered him to power primarily through Twitter.

If Marshall Macluhan taught us that the medium is the message,\(^1\) then it behooves us to understand how the medium through which society now converses shapes political outcomes.

How can we study the impact that software has on democracy? Software is not monolithic, and the influence it exercises is not singular: Each software platform has its own unique impact on how human beings interact and communicate. Since each affects social dynamics differently, each carries a different impact on political debate and decision-making, and merits separate examination.

The goal of this paper is to understand how the software platforms we use impact the quality of the democracy we live in. Through case studies of three prominent platforms (Wikipedia, Facebook and Twitter), we will tease out how the specific functions of a software application impact social dynamics, and how those dynamics either strengthen or weaken political participation. Finally, we will draw on these insights to show how software that is specifically built to create alternate, more positive social dynamics, can actually reinforce democracy.

The Quality of Democracy

One of the earliest and most influential chroniclers of contemporary political life, Alexis de Tocqueville, argued that there is more to democracy than the institutions by which citizens select their leaders. He claimed that a successful democracy is built as much on "the art of associating together," by which he meant the ability of individuals to collaborate in pursuing the public good.\(^2\)

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For Tocqueville, the quality of democracy depends on this “art of associating together” growing stronger as more and more citizens earn that ability to participate in political life. The challenge in Tocqueville’s day was the expansion of voting rights to all property-holding men, which increased the number of people that had a say in how society was run. He admired the ability of the United States to accommodate the expansion of the franchise through the growth of what would today be called civil society. He wrote his famous book, ‘Democracy in America’, partly as a way of exhorting European nations to do the same.

For Gabriel Almond and Sidney Verba a “political culture of participation” is what differentiated modern, democratic societies from those based on traditional bases of authority.\(^3\) They saw political participation – the mechanism by which citizens’ voluntary activities can affect politics – both a constructive element and a symptom of good democracy.

More recently, Stanford political scientist Larry Diamond explained:

“No regime can be a democracy unless it grants all of its adult citizens formal rights of political participation, including the franchise. But a good democracy must ensure that all citizens are in fact able to make use of these formal rights to influence the decision-making process: to vote, to organize, to assemble, to protest, and to lobby for their interests. With regard to participation, democratic quality is high when we in fact observe extensive citizen participation not only through voting, but in the life of political parties and civil society organizations, in the discussion of public policy issues, in communicating with and demanding accountability from elected representatives, in monitoring official conduct, and in direct engagement with public issues at the local level.”\(^4\)

In today’s society, technology increases the avenues that citizens have for political participation. The proliferation of social networks, for example, “offering opportunities to express ideas, demands, and frustrations that are instantly accessible to everyone at practically no cost.”\(^5\)

Alexandra Segerberg and W. Lance Bennett consider the internet itself as a mode of participation. They identify new patterns of citizen-driven engagement in the political process enabled by digital technology. One pattern involves “broader public engagement...using interactive digital media and easy-to-personalize action themes.” Social media platforms allow individuals to connect with each other, form personalized groups based on social and political interests, organize events – including demonstrations, charity fairs – and can give them stage from which they can state their opinions and demands for better governance. At a broader level, they also observe “technology platforms and applications taking the role of established political organizations.”\(^6\)

If the internet influences the quality of democracy by enabling different forms of political participation, the question of how that influence works can only be answered by examining each software platform separately. For each platform shapes the way


individuals interact with one another in its own unique way. The unique patterns of human activity that emerge from use of one software or another each carry their own promise and threat to the quality of our democracy.

To understand how each software platform shapes democracy differently, we can study their affordances.

The Affordances of Software

Affordances can be understood as “the actions a given technology facilitates or makes possible.” Donald A. Norman first introduced the concept of affordances in his seminal book ‘The Psychology of Everyday Things’ (1988), explaining that:

“the term affordance refers to the perceived and actual properties of the thing, primarily those fundamental properties that determine just how the thing could possibly be used. [...] Affordances provide strong clues to the operations of things. Plates are for pushing. Knobs are for turning. Slots are for inserting things into. Balls are for throwing or bouncing.”

Zeynep Tufekci, a Turkish activist and scholar of digital communications, applied the concept of technological affordances in the context of activism through software and social media platforms. Her recent work ‘Twitter and Tear Gas: The Power and Fragility of Networked Protest’ examines how the different designs adopted by these platforms give users the ability to communicate in distinct ways. The technological affordances engendered by the features of different software applications impact how users interact and the information they receive from these platforms. If political actors choose to manipulate these affordances in one way or the other, it can encourage or suppress the participation of the software’s users in the political process.

Let us turn to some of the more prolific software platforms to determine which affordances help spur or deter engagement in the public sphere. In each case we will start by examining the specific features that have been built into each platform by design, as the owners seek to promote a certain kind of behaviour. We will then consider what affordances this creates and the social and political outcomes they give rise to.

The Case of Wikipedia

Wikipedia is the largest and most popular body of information for general reference in the world. A web-based encyclopedia founded on a model of openly editable content, it is an indispensable source of information on the issues, people and debates in public life.

Perhaps the one feature most responsible for Wikipedia’s dominance is its capacity for co-created content. The online encyclopedia relies on volunteers – any given person with internet access – to provide knowledge by contributing to its database, whether by generating new articles or by editing existing pages. There are currently 5,596,959 content articles on English Wikipedia, a marked difference with Encyclopedia Britannica, which currently offers 120,000

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online articles.\textsuperscript{13}

Users do more than take part in the editing process. As volunteers gain credibility within the Wikipedia community, they gain authority to conduct certain technical actions upon undergoing a community review process. There are currently 1,225 administrators on English Wikipedia, who participate actively in the governance of the platform.\textsuperscript{14}

This function of co-creation – mass participation in developing and curating the online encyclopedia\textsuperscript{15} – generates an unprecedented volume of information. The affordance this creates is the ability citizens have to access knowledge. Any citizen with access to the World Wide Web can turn to Wikipedia for free to learn about virtually any topic.

The social impact of this affordance is a better-informed population. Any citizen seeking to better understand the debate on controversial public issues such as carbon taxes, immigration controls or macro-economic policy can get a rough and ready introduction to the issues with a few minutes of reading on the site.

In this era of fake news, one would expect the world’s largest source of information for general reference to be a ripe target, particularly given the open protocols for editing the content there. In fact Wikipedia is surprisingly absent from the debate on fake news. Indeed, other sites even count on Wikipedia to help users sort out fake news from real facts.\textsuperscript{16} That is due to the fact that the rules governing content in Wikipedia create strong incentives for verifiable information to be included and contentious information to be challenged.\textsuperscript{17}

It is possible that software, when designed with a view to improving the quality of public life, can enhance rather than undermine democracy. To use an image from the physical world, to understand how Wikipedia shapes democracy think of it as a vast public library. Everyone is welcome in, and can access the information they want. But there are rules governing how people behave in a library, and as a result libraries tend to be studious, rule-bound places.

The Case of Facebook

Facebook is the world’s largest social network, surpassing 2 billion monthly active users in July 2017.\textsuperscript{18} The feature that has made Facebook such a runaway success is most likely the personalization of mass communications. Every one of its 2 billion users has their own unique newsfeed, populated by content relevant in some way to the individual user.

Unlike many other social networks, Facebook operates on the basis of communication by consent. Users engage with known individuals, accepting each friend request before communication can flow. They can find friends suggested based on their location, their common ties or interests.


This combination of personalized communications and the curation of a network unique to each individual user creates a certain degree of connection, separate from the connection individuals have in the physical world. The affordance this generates is the creation of a sense of community. Many people find Facebook attractive because of the opportunity it gives to know what others they care about are doing and thinking, even at great distance. It helps us feel connected to people even if we are separated by large distances.

But it is not just any kind of community that Facebook helps engender. It creates communities of like-minded people. The social outcome of this affordance is homophily, the tendency to associate with people you agree with and to disassociate with those with whom you don’t.

Tufekci describes homophily as “a concept similar to the notion ‘[b]irds of a feather stick together.’” The idea is that people with similar views find each other and converge, creating a social circle based on their commonalities – and communicating less with people that don’t share their views.

The political impact of this effect of homophily is polarization. As individuals associate more with people that agree with them and less with those who don’t share their views, society divides into different segments, insulated and blinded from each other’s perspectives and experience.

The image from the physical world that best applies to Facebook is the high school cafeteria. Around each table huddle friends who excitedly share information, jokes, rumours. They enjoy being with one another, and it gives meaning to their lives. But each table features a different clique, separating insiders and outsiders. Try to sit at the wrong table and you’ll quickly find out that you’re not welcome. Express an opinion counter to what the others think that the reaction will be instantaneous. Just like high school, Facebook is where you find the people you love the most and the people you detest the most.

**The Case of Twitter**

On Twitter, individuals are less insulated or compartmentalized. This second-most popular social network in the world had 328 million users in July 2017. It operates quite differently from Facebook. Its features include short messages (limited to 140 characters traditionally, and more recently to 280), the ability to make easy connections by following any person with a public profile, and the lack of filters or content restrictions, including the possibility of creating an anonymous account. Taken together, these functions have given Twitter users the ability to operate as their own independent broadcasters, reaching untold numbers of people immediately, if they craft their tweets and promote them for maximum effect.

The affordance of Twitter is the ability to spread information instantaneously, to the entire world. This is what makes Twitter addictive. For so many critical events changing our world, Twitter is where we first hear the news. When the U.S. succeeded after a decade

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19 Tufekci, p. 9.


of efforts in tracking down the author of the terrorist attacks of September 11, 2001, it was a neighbour of Osama bin Laden that broke the news. Sohaib Athar tweeted that there were U.S. military helicopters hovering in his neighbourhood in Abbottabad, Pakistan, and the news spread like wildfire.

The social outcome of such an affordance is radical openness. News can now spread at the speed of fibre optic cable, the second someone writes a tweet, right onto the devices of hundreds of millions of others. No need for any filtering, any analysis, any sober contemplation, or any context. It is virtually impossible to head off the spread of information.

This radical openness may have a positive impact on the freedom of expression, and vexes efforts by authoritarian regimes from blocking information. On the other hand, it is also a form of social interaction that is devoid of many of the rules and conventions that make social interaction sociable and pleasant. When society is brought together into a single arena, without privacy and without the intermediation of any institutions, is one which lacks the characteristics that define a community, such as shared values and civility.

Think of Twitter as a crowded public square, where thousands of voices can be heard and yet where some members of the crowd engage in the kind of anti-social behaviour that is harder to get away with in smaller settings.

Harassment, for example, has become a major problem on Twitter. Any woman or member of a minority group can attest to the risks of interacting on Twitter. For a prominent example, consider the case of the video game GamerGate. In 2014, a large number of video game players enacted a campaign of harassment and trolling against women who criticized such games or the portrayal of female characters within them.

The more powerful the woman, the more intense the harassment. As her prominence in the federal Cabinet and her influence in Canadian politics grew, the Minister of the Environment, Catherine McKenna, became the target of an ongoing campaign of harassment on Twitter. The meme used to attack McKenna was to compare her to a doll not generally associated with qualities of human intelligence. When Saskatchewan MP Gerry Ritz repeated this meme by calling her a "climate Barbie", she denounced the comment as "sexist [and] misogynistic", reflecting how women “especially women in politics” are perceived, requiring “changes in behavior and changes in attitude.”

Claiming democracy back

Software users are not powerless in the face of the influence their preferred platforms exercise on them. Neither are citizens helpless in the face of the changing social dynamics that these platforms generate. Understanding the affordances of software and their political outcomes should empower us to reclaim some agency over software and the influence it plays.

We each have our own role to play in adapting democracy to the digital age. For one, government has the duty to uphold the rights of citizens online and in the physical world, if necessary, by holding companies accountable for how they treat users within their respective jurisdictions. The recent victory of the European Union (EU) in setting new norms for the

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protection of personal data not only in its own jurisdiction but around the world, is a case in point. As the fallout of personal data abuses in the 2016 U.S. presidential election drives software company after software company to strengthen data protection, the EU’s General Data Protection Regulation (GDPR) provides a set of rules that address the problem more effectively than anything the U.S. government has been able to muster.\textsuperscript{28}

Software users can also help engender an environment for exchange and active participation, by practicing civility in their online conversations. Citizens should also participate in protecting their own personal data, in order to avoid leaving themselves vulnerable to manipulation or schemes.

Citizens also have the capacity to affect change, by remaining abreast of technological developments that can empower them and by standing up for marginalized populations and individuals when witness to these people being attacked online.

And finally, technologists can also participate in enhancing the quality of our democracy, by building software which strengthens, rather than weakens, our institutions and by working with entrepreneurs who aim to help build a better society.

\section*{Building Software to Strengthen Democracy}

How can supporters of democracy go about creating software that strengthens democracy rather than undermine it?

The founders of \textit{Betterplace}, Farhaan Ladhani and Ben Rowswell, saw how software can dramatically increase political participation, having witnessed the outpouring of civic action that filled Tahrir Square in Egypt in 2011 and subsequently in the streets of Venezuela in 2017. They also saw the early sights of disruption that software can bring to democracy. In the first case, they witnessed how institutions unprepared for the sudden advent of more active citizens risked collapse. In the second case, it became evident how divided online communities exacerbated polarization on the streets.

These two crises, and several in-between, demonstrated the limits existing software faces in empowering citizens. Facebook and Twitter were not created for the purpose of strengthening democracy, and indeed repeated political upheaval in various jurisdictions reveals how damaging their limitations can, in fact, be.

After years of experimentation and research into how political activists use software to achieve political impact, Ladhani and Rowswell were able to extract the affordances software needs to engender if citizens are to succeed in collaborating in the public interest.

The mobile web app \textit{Betterplace} is the result of these efforts.\textsuperscript{29} A software platform that tailors recommendations for individuals to take action on issues in their community, \textit{Betterplace} aims to mobilize a much larger portion of the population in civic life.

The insights that fed the design and development of \textit{Betterplace} can be described through three affordances built into the software.

First, \textit{Betterplace} aims to make it easier for millions of regular citizens to get involved in issues that concern them. It does this by presenting opportunities for individuals to take action on those issues – not merely by reading or sharing opinions about them, but by acting. Just as Tocqueville described civil society organizations forming spontaneously for individual citizens to act on social challenges ranging from public education to economic growth to combating various social ills, \textit{Betterplace} aims to draw people past talking about issues into taking action.


\textsuperscript{29} \url{https://start.better.place}. 
The functions built into the app to facilitate this affordance include an interactive interface, which gives users the ability to review opportunities for action quickly and select those that appeal to them, and integration into other apps on their mobile phones. As phones become more dominant in daily life, making civic action easy requires that users be able to discover and engage in civic action through their mobile devices.

Second, Betterplace allows citizens to personalize their experience of civic action. The affordance of personalization is what makes so many software platforms appealing to users – from the tailoring of communications that Facebook offers to the individualized shopping experience which fuels Amazon to the targeted approach to dating that makes Tinder so popular.

Betterplace personalizes opportunities for civic action by asking users what their interests are, what contributions they are willing to make and where they live. Its algorithms then prioritize opportunities for action to match the profile of the user.

Third, Betterplace allows users to mobilize fellow citizens to take action on the issues that matter to them. By enabling the co-creation of civic action, Betterplace taps into the affordance that helped Wikipedia achieve the massive scale it now enjoys. When individuals can freely join together to create common value, the sky is the limit for what the growth this makes possible.

Conclusion

Democracy has adapted to the many changes in society since Tocqueville first wrote about the “art of associating together”. New technologies have expanded communications, from the advent of the telegraph in the 1850s, radio at the end of the 19th century, and television in the 1940s and 1950s. New groups of citizens began to have a say in society with the expansion of the franchise to women in the early 20th century, and with the removal of obstacles to the participation of ethnic and racial minorities in the late 20th century.

Each expansion in political participation disrupted political life and led many to lose faith in democracy. But citizens adapted to each change and found new ways to collaborate. Similarly, today we are experiencing changes in communications technology that are multiplying the voices that shape public discourse. The din this creates can be discouraging.

But as we learn about the affordance these new technologies create for public debate, and as we see how political dynamics are shaped by those affordance, we can begin to use software to adapt the art of associating together to the digital age.
Bibliography


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