

THE NEW CRISIS OF PUBLIC COMMUNICATION

CHALLENGES AND OPPORTUNITIES FOR FUTURE RESEARCH ON DIGITAL MEDIA AND POLITICS

ANDREW CHADWICK



Contents

About the Author	3
Summary	4
1. Introduction	5
2. Digital Media as Liberation Media—But Liberation for Whom?	5
3. Four Challenges for Future Research	7
▪ Analyses of digital media and politics have tended to select cases that are progressive or pro-liberal democratic	7
▪ Research on digital media and politics has tended to employ the engagement gaze	8
▪ Research on digital media and politics has often underestimated the trade-offs between affective solidarity and rational deliberation	9
▪ Research on digital media and politics has mostly been driven by the rationality expectation and has underplayed the importance of indeterminacy in digital culture	11
4. Conclusion	14
About the Online Civic Culture Centre (O3C)	15
References	17

About the Author



Andrew Chadwick

Professor Andrew Chadwick, Professor of Political Communication and director of the Online Civic Culture at Loughborough University.

✉ a.chadwick@lboro.ac.uk

The views in this article are those of its author. This research on which this article is based received no external funding.

Summary

As the post-2016 political context becomes embedded, there is profound uncertainty about the long-term impact of digital media on the civic cultures of liberal democracies. In this article, I argue that the legacy of research on digital media and politics has created four epistemological problems that have hindered attempts to make sense of what amounts to a new crisis of public communication. Research in the field has tended to select cases that are progressive or pro-liberal democratic and it has usually employed what I term the engagement gaze. Research has underestimated the trade-offs between affective solidarity and rational deliberation and it has been driven by a rationality expectation that neglects the role of indeterminacy in digital culture. For more than twenty years, researchers have focused on whether online “engagement” was being sufficiently embedded in political or journalistic organizational settings, irrespective of the motivations and ideological goals of those who actually engage. This has often obscured problematic aspects of how digital media may be reshaping the formation of public opinion and behaviour in ways that contribute, alongside other factors, to the erosion of liberal democratic norms of authenticity, rationality, tolerance, and trust. Addressing these epistemological challenges—a project already underway across a range of research endeavours—will better equip the field for the future.¹

¹ I first aired the ideas presented here in two panels at the International Communication Association Annual Conference in Prague in May 2018—“Big Questions in Political Communication Research” and “Social Media Platforms: A Crisis of Democracy?”—and in keynote speeches to the *International Journal of Press/Politics* Annual Conference at the Reuters Institute for the Future of Journalism in September 2018 and the UK Political Studies Association Media and Politics Group Annual Conference at the University of Nottingham in November 2018. I thank the participants in those events, particularly Samantha Bradshaw, Nick Couldry, David Karpf, Sarah Anne Ganter, Philip N. Howard, Daniel Kreiss, Shannon C. McGregor, Lisa-Maria Neudert, Rasmus Kleis Nielsen, Stuart Soroka, Talia Stroud, Cristian Vaccari, Peter Van Aelst, Gadi Wolfsfeld, and the audiences in all events. Any errors or shortcomings in this article are mine alone.

In our post-2016 moment—after the inaccurate and misleading political advertising on Facebook in the Brexit referendum; after the disinformation and misinformation crisis of the 2016 U.S. presidential campaign; after revelations of the massive scale of automated social media activity designed to manipulate public attention during key political events, some of it sponsored by Russian intelligence agencies; after the Cambridge Analytica/Facebook data breach scandal; and after the live-streamed New Zealand terrorist massacre of March 2019—the mood among researchers of digital media and society is one of deep pessimism. So much has been lost of the optimistic visions for democratic change that once underlay scholarship in the field. Many pathologies of the present crisis were always there in some form, but were too often neglected (though see, for example, Daniels, 2009; Rojecki and Meraz, 2014). That being said, there is currently profound uncertainty about the long-term impact of all forms of digital media on civic life, but this is especially the case for social media platforms, which, for many people have become the *de facto* internet.

In this piece, I argue that, as the post-2016 context becomes embedded, four stark epistemological challenges that have been generated by the legacy of research on digital media and politics now face researchers in this field. Analyses of digital media and politics have tended to: (1) select cases that are progressive or pro-liberal democratic; (2) employ what I term the *engagement gaze*; (3) underestimate the trade-offs between affective solidarity and rational deliberation; and (4) be driven by what I term the *rationality expectation* while underplaying the importance of indeterminacy in digital culture. Addressing these challenges—a project that is already underway across a wide array of research areas—is one way (and I hasten to add that it is only one way) to better equip the field for making sense of the new context moving forward.

I also make a broader point in this piece, which boils down to the following: In the social sciences, there are times when it is useful to shift focus away from institutions and organizations and toward the analysis of impulses, emotions, identities, beliefs, and attitudes—in other words, toward the disparate origins of the elusive phenomenon that has, for want of a better term, become known as “public opinion.” In the analysis of digital media and politics, that time is now. Twenty years of research, mostly driven by normatively pro-digital media perspectives—which have mainly focused on whether online “engagement” was being *sufficiently* embedded in political or journalistic organizational settings—has tended to marginalize some important questions about the precise nature of digital engagement and the origins and consequences of digitally-shaped attitudes more generally.

I want to argue that this particular legacy, for all its analytical power, has made it more difficult for scholars to appreciate some problematic aspects of how digital media are reshaping how public opinion is formed and how the civic culture of liberal democracies is evolving.²

Digital Media as Liberation Media—But Liberation for Whom?

At the outset, we should bear in mind that, if judged against previously dominant media forms—particularly the broadcast media that so profoundly shaped society and politics during the twentieth century—digital media have always been liberation media; and, under certain conditions and in certain contexts, they still are. Current anxiety about the socially-destructive role of social media platforms—their monopoly power based on surveillance capitalism (Couldry & Mejias, 2019; Zuboff, 2019); their uses and abuses by political and corporate elites, or

² A new wave of research tackling these problems is now gaining momentum. It is impossible to do full justice to it here, but see, for example, Bastos and Mercea, 2019; Benkler, Faris & Roberts, 2018; Bennett & Livingston, 2018; Boler & Davis, 2018; Clayton, Blair, & Busam et al., 2019; Ging, Lynn, & Rosati, 2019; Marwick & Lewis, 2017; Noble, 2018; Quandt, 2018; Shin & Thorson, 2017; Sparkes-Vian, 2019; Starbird, 2017; Thorson et al., 2019; Vraga & Bode, 2018; Waisbord, 2018; Woolley & Howard, eds., 2018.

movements of exclusionary populism, illiberalism, and intolerance (misogyny, racism, nativism, xenophobia, and religious fundamentalism)—often ignore the fact that there are many states around the world in which authoritarian power structures prevail, freedom is severely limited by government surveillance, and mainstream media organizations are either directly censored or subject to stifling political pressure. For human rights dissidents in such states, social media remain an important means of communicating, organizing, and mobilizing against monolithic oppression.

Authors such as Morozov (2011) were right to draw attention to the limits of the liberation media discourse that has been so influential in research on digital media and society. But it is still obvious that the communicative practices of totalitarian dictatorship witnessed during the high modernity of the mid-twentieth century are almost unimaginable today. This is, in large part, due to the radical redistribution of the means of communication that the internet, and social media platforms in particular, made possible from the mid-2000s onward.

That being said, three counterpoints to the universality of liberation media discourse stand out as important at this juncture. First, there are forces of concentrated power and monopoly that are now undermining the early normative ideal of digital media as liberation media. These are arguably most powerful and advanced in the global West and the global North, but their reach extends beyond. Yes, we need to put these in perspective. But it would be unwise to downplay them, blame them on a “moral panic,” and hope that things will go back to how they once were. Above all, it is the concentration in the dominant social media platforms of such diverse, multifaceted, yet often subtle forms of power over the economy of public attention that makes this task so urgent. It is all the more important given that, after the failure of alternative social media models, such as Diaspora and Mastodon, for example, and the inability of rival search engines to make much of a dent in Google’s dominance, there are now so few genuinely sustainable means of running large-scale digital services on the basis of nonprofit principles. And matters are complicated still further by the fact that many of the alternatives to the dominant platforms, for example Reddit, have in fact been important to the rise of online hatred and disinformation (see, for example, Ging, Lynn, & Rosati, 2019; Jane, 2016).

A second counterpoint is that powerful social, economic, and political elites of all kinds have now adapted to the manifold threats once posed by digital media. From the integration of behavioural data and ad-tech in election campaigns, to the forward march, without sufficient ethical and political scrutiny, of digital data harvesting, surveillance, and networked forms of artificial intelligence (AI), it is now clear that, to paraphrase and augment Zuboff’s terms (2019: 9), digital connection among individuals has become *a means to others’ commercial and political ends*. Earlier optimism about the potential role of digital behavioural data in increasing political organizations’ responsiveness to the “real” wants and needs of the public is becoming more difficult to sustain, particularly in the absence of serious and sustained attention to the ethical and political problems that are now inevitably arising from attempts to deploy AI at scale (Noble, 2018; Wolfram, 2019).

A third counterpoint to liberation media discourse is arguably more difficult for digital politics researchers to accept, even though it may be essential for renewing the public mission of scholarship in this field over the coming years. It is that the liberation media discourse that has animated so much of the scholarship and commentary on digital politics has always had a problematic *orientation of benign neutrality* toward online engagement. Betraying the internet’s roots in the U.S. constitution’s strong doctrine of freedom of expression, in this approach, engagement has almost always been promoted as a positive societal benefit of digital media. Too often, this assumption, for all its obvious democratic appeal, has occluded careful consideration of *how* engagement is structured in specific ways by social distinctions and technological affordances, *who* is engaging, to *what ideological ends*, and *with what long-term consequences* for liberal democratic societies.

This is, of course, an age-old problem of post-Reformation and Enlightenment liberalism,

so acutely observed by Locke, Voltaire, Rousseau, among many others (see, for example, Bejan, 2017; Mounk, 2018). To what extent should societies tolerate the spread of behaviour and ideas that undermine the very foundations of liberal democracy's unique blend of popular self-determination and individual rights? And yet, this problem is also at the core of so much current anxiety about the role of social media in the spread of hatred and intolerance—from debates about online racism, xenophobia, and misogyny, to concerns about the coordinated online glorification and viral circulation of terrorist violence, to the appeal of exclusionary, anti-immigrant populism and extreme partisan online news. In the United Kingdom, this faultline ran through the entirety of the government's extraordinarily wide-ranging consultation on how to regulate the online sphere, the 2019 Online Harms White Paper. Discussions about democratically dysfunctional communicative behaviour in many other liberal democratic polities, including France, Germany, Italy, and even the United States, to name but a few, exhibit the same antinomy.

Confronting these problems is uncomfortable, but necessary, and scholars of digital media and politics are well-placed to contribute. Sides will have to be taken. But taking sides will also require good-quality evidence. The production of this kind of evidence requires rethinking some of the assumptions we bring to our research, the objects of analysis on which we focus, and the conceptual scaffolding on which we build explanations, as the post-2016 research agenda continues to blossom.

Four Challenges for Future Research

The legacy of research on digital media and politics over the last two decades presents four interrelated challenges for present and future work in the field. I should also add, in passing, that some of my own previous research has almost certainly contributed to them.

1. Analyses of digital media and politics have tended to select cases that are progressive or pro-liberal democratic

The growth of digital politics scholarship over the last two decades has mostly been fuelled by analyses of broadly progressive or pro-democratic cases (Schradie, 2019). Probably the best examples of this were the outpourings of optimistic scholarship on the 2008 Obama campaign and the events of 2010–2011 that prematurely became known as the Arab Spring. At the level of individual interventions, probably the most significant landmark was Shirky's highly influential book *Here Comes Everybody* (2008). But the selection bias extends in diverse ways across all kinds of cases, from political parties to social movements, to community activism, to news and journalism, and to critiques of the dominant social media companies themselves.³

The roots of this bias are deep and manifold, but one explanation is that much scholarship on digital media emerged from an almost instinctive critique of the elitism of the mass media system. The explosion of the internet at the turn of this century proved so exciting because it appeared to be sweeping all of that away. It promised to usher in new forms of politics characterized by flatter hierarchies, the empowerment of the previously powerless, and a new culture of openness, tolerance, and global cosmopolitanism. So many of the central animating concepts in digital politics research owed their origins to this reaction against the past: the decline of traditional journalistic gatekeepers, the horizontality of network connections, the rise of decentralized and “leaderless” quasi-organizations, the “wisdom of the crowd,” the breaking apart of monolithic government and party bureaucracies, the elective affinities

³ This generalization about the dominance of specific assumptions may not satisfy all readers, but consider the two major handbooks of digital politics research (Chadwick and Howard, Eds., 2009; Coleman and Freelon, 2015). Material examining non-progressive cases is noticeably absent from both volumes.

between digital media and the new, looser, individualistic identities of progressive postmaterialism and environmental protest, to name but a few.

These disparate themes all seemed tied together for scholars who came of age intellectually with the critiques of politics, society, and media that inspired so many social scientists during the 1990s—those whose outlook was shaped by the collapse of the Berlin wall in 1989 and the writings of Foucault, Habermas, Bourdieu, and Castells—again, to name but a few. The internet and digital media *looked like* the technology of a new era of freedom. Concentrations of power in the hands of state and corporate elites would supposedly diminish and the authentic voices of marginalized, previously under-represented groups would find untrammelled expression in the public sphere, free from the arid conformity of the past.

All of that did happen, of course. But we now face the reality that some of the most consequential attitudes and behaviours enabled by digital media have not been particularly pro-liberal democratic or progressive. Consider, for example, inauthentic social media expression, such as the role of automated bots in social media commentary during the televised debates of the 2016 U.S. presidential election (Kollanyi, Howard, & Wolley, 2016) and the Brexit referendum (Bastos & Mercea, 2019). Or social media expression designed to cultivate the spread of misinformation, mutual mistrust, intolerance, and hatred, such as right-wing commenters' deliberate targeting of news articles about immigration (Quandt, 2018). Or the ways in which the (partly) algorithmically-determined “folksonomic” hierarchies of misogyny on the Urban Dictionary platform insinuate themselves into the broader economy of online attention, due to the prevalence of the site's entries in Google's search rankings (Ging, Lynn, & Rosati, 2019). Or the civically ambivalent motivations that lead people to share false and misleading information—and the regularity with which they do so (Chadwick, Vaccari, and O'Loughlin, 2018; Chadwick and Vaccari, 2019). Or the unfortunate stereotype that the “dark web” and non-mainstream social media sites have been “radical, progressive, socialist, anarchist, feminist, queer, or anti-racist” (Gehl, 2015) when, in fact, many such sites have also hosted content that is directly opposed to such values.

The conceptual and methodological tools to come to terms with these developments are now being built. Researchers are focusing their attention on the intolerant and democratically dysfunctional aspects of digital media engagement. It is important to continue to redress the imbalance created by the previous tendency to focus on optimistic, pro-democratic outcomes.

2. Research on digital media and politics has tended to employ the engagement gaze

The second epistemological challenge I want to highlight leads on from the first. It is that research on digital media and politics has tended to employ the *engagement gaze*. By the engagement gaze I mean that most research on digital media has assumed that *more* engagement unproblematically creates more democratic goods for the media system and the polity. The problem here is that the engagement gaze has conditioned researchers to look for evidence of engagement, and, wherever they find it, celebrate it as an unalloyed good. This gaze has involved underplaying the importance of three factors that ought to be considered when appraising any form of engagement: first, the substantive ideological and political goals of those who engage; second, the extent to which the consciously-designed incentive structures of any communication environment can make it more likely that some types of engagement will erode liberal democratic norms of authenticity, rationality, and tolerance; and third, the likelihood that new pathways to engagement will likely have longer-term, systemic consequences for the civic culture of politics.

Shelley Boulianne's remarkable meta-analysis of 320 survey-based journal articles on digital media and political participation—more than twenty years of published research—is instructive (Boulianne, 2018).⁴ Very few of those 320 articles have much to say about the

⁴ I thank Shelley Boulianne for sending me the full variable list for her 2018 article. Any errors or shortcomings in my

substantive ideological and political goals of the participation they analyzed. Ideology appears in only 14 percent of the 320 studies and almost always as an explanatory variable, divorced from any specific intentions or outcomes of participation. Motivations and goals mostly go unmeasured, too, unhelpfully obscured by the seemingly benign neutrality of the engagement construct. Nor did many of those 320 studies have much to say about how digital media affordances, such as the algorithmic sorting of information in news feeds and other relevant technological design factors, enable and constrain engagement in consequential ways (Thorson et al, 2019). Boulianne's analysis covered quantitative survey research but the engagement gaze has been equally common in qualitative and case-study based work.

The engagement gaze is an academic problem, but it also has its roots in the discourses of Silicon Valley and of the "platform" (or what Stephen Wolfram (2019), in his testimony to the U.S. Congress, termed the "automated content selection business") that have been so important for the expansion of social media companies. Constructing engagement with a gloss of benign neutrality has suited social media companies perfectly. It offered the promise of rapidly expanding user numbers without the chore of having to pay too much attention to the costly business of policing content on their platforms or considering the trade-offs of using design affordances such as the algorithmic news feed, which can nudge people to spend greater time on the platform because it prioritizes information that accords with their attitudinal biases.

This legacy of underplaying ideological and political goals, illiberal motivations, problematic technological design, and long-term consequences has made it more difficult for scholars of digital media and politics to adapt to the post-2016 climate. The neglect of people's ideological goals when they engage online is understandable because it enables academics to avoid accusations of political "bias." But this neglect has also opened up opportunities for individuals, groups, and movements who deliberately seek to produce and circulate ideas that undermine liberal democratic norms. All of this is justifiable when engagement is treated with benign neutrality, as it is under the engagement gaze. The neglect of problematic technological design is, in large part, a symptom of the lack of transparency by the social media companies themselves and the lack of a proper structure of public accountability for auditing the effects of algorithmic and machine learning based sorting of information.

The first challenge I have outlined is relatively soluble: researchers can analyze non-progressive cases and focus on the ideological and political goals of engagement. The second challenge is more difficult. We can hope that there is sufficient public and political pressure on social media companies to open up their data and algorithmic methods to responsible researchers. But the third and fourth challenges I want to outline move things onto more troubling terrain.

3. Research on digital media and politics has often underestimated the trade-offs between affective solidarity and rational deliberation

The third epistemological challenge is that previous research on digital media and politics has tended to underestimate the inevitable trade-offs between affective solidarity and rational deliberation.

A new wave of research has foregrounded emotion as a key force in media, politics, and journalism (e.g. Papacharissi, 2015; Wagner & Boczkowski, 2019; Wahl Jorgensen, 2018). But a central tension runs through this work. As Papacharissi has demonstrated, affect can interact with the affordances of social media, particularly circulation, repetition, and recursion, and play a role in opinion formation and mobilization by contributing to the social solidarity and identity that are essential precursors to collective action (Papacharissi, 2015). But the social force of affect online is also such that the identities from which it springs, and which it shapes and

analysis of her data are my responsibility.

reinforces, can be highly resistant to challenge and subversion. Online, identity based on affective ties seems to become particularly difficult to dislodge. This point underlies much of the anxiety about “filter bubbles” and “echo chambers,” it informs much of the empirical research on misinformation and misperceptions, and, as Kreiss argues, it may ultimately imply the fracturing of civic epistemology: “the basis upon which people understand and agree upon political facts and truths” (Kreiss, 2017; see also Waisbord, 2018). Arlie Russell Hochschild’s book *Strangers in their Own Land* (2016), about conservative identity in the American South, is instructive in this regard. While Hochschild has little to say about digital media, she does reveal much about how, in local communities, complex, multi-layered emotional substructures condition daily life and attitudes to political and economic authority. This provides a useful orientation for exploring the roots of intolerance and misinformation online (see Davies, 2017; Kreiss et al., 2017).

Animating affective divides is what Hochschild terms “deep stories.” A deep story is essentially an overarching, metaphorical sensibility. It serves as an emotionally-charged basis for everyday orientations toward social, cultural, economic, and political reality. The deep story feeds identity, social division, and resentment toward the other side, however that side is defined. As Hochschild puts it: “A deep story is a feels-as-if story—it’s the story feelings tell, in the language of symbols. It removes judgment. It removes fact. It tells us how things feel.... And I don’t believe we understand anyone’s politics, right or left, without it. For we all have a deep story” (135).

Concerns about online echo chambers may have been exaggerated, not least because both the empirical evidence for their existence and their social and political implications have always been contested (Bakshy et al, 2015; Barberá et al, 2015; Bruns, 2019; Bucher, 2018; Fletcher & Nielsen, 2017; Settle, 2018; Stromer-Galley, 2003; Sunstein, 2001; Sunstein, 2017; Wojcieszak & Mutz, 2009). But much of the research on this topic was conducted before the mass use of social media and its focus has often been diffuse. Is it about lack of diversity in people’s media and information diets? If so, there is little evidence that this is the case. Or is it that the ideologically committed tend to seal themselves off, in the interests of rapid and concerted mobilization based on emotional outrage? The evidence for the latter is more weighty. The post-2016 context is now generating evidence that the ways in which social media platforms have positioned behavioural metrics and algorithmic sorting of content at the centre of their business models for garnering attention can shape group attitudes and behaviour (Settle, 2018; Stewart et al., 2019). The U.S. fake news factories and bot crises of the 2016 campaign provide evidence of how Facebook’s news feed and Twitter’s hashtags have introduced surprising new vulnerabilities in the economy of attention, but the problem is a larger one: content that reinforces one’s identity is now more accessible than ever to those in society who are motivated to have their identity reinforced, even if that identity is based on democratically dysfunctional norms, such as the refusal—fuelled by misogyny, xenophobia, or racism—to hear the other side. Boler and Davis (2018) have introduced the concept of “affective feedback loops” to capture this convergence of algorithmic cues and social identity. Decades of research in communication and political psychology on fluency, confirmation bias, selective exposure, and motivated reasoning has demonstrated that many people are predisposed to having their attitudes reinforced by their media consumption habits (Stroud, 2010), but we are only in the early stages of learning about how selective exposure informs people’s online *production and sharing* (Shin & Thorson, 2017).

When an understandable cognitive bias—the need to have one’s views reinforced, to reduce risk and uncertainty—converges with social media affordances—for example, visible metrics and cues and the algorithmic curation of search, feeds, and hashtags—the heady mix is highly conducive to building collective action through affective solidarity, even if the informational context may be based on falsehoods. But this scenario is not so beneficial for rational deliberation and building consensus through recognition and respect for difference. The inevitable trade-offs for liberal democratic political culture caused by this tension ought to be

examined more carefully in future research.

Technological affordances have played only a minor role in traditional public opinion scholarship, which has been mostly about the message, not the medium. And yet, public opinion research *has* paid attention to problematic aspects of how public opinion is formed, for example through the study of elite cues (see for example Edelman, 1988; Zaller, 1992). It has also considered the limits to genuinely informed public opinion when media exposure is conditioned by partisanship, polarization, and motivated reasoning (for an overview see Flynn, Nyhan, & Reifler, 2017). Attention to how the affordances of digital media interact with the social and psychological constraints that we know shape all citizens' reasoning about public affairs can update these approaches. And, of course, we should also bear in mind that social media affordances are not always as they appear on the surface. They are vulnerable to being exploited, often in hidden ways, by actors of various kinds who seek to distort the economy of attention and influence public opinion through subterfuge, spreading false rumours, or splicing together information from a range of different sources, some reputable, some less so (Kollanyi, Howard, & Woolley, 2016; Rojecki & Meraz, 2014; Stewart et al, 2019).

As social media increased in popularity after the late-2000s, attention to elite cues was mostly sidelined in favour of conceptual frameworks that focused on what seemed to be so "new" about "new media": individual agency, the erosion of traditional gatekeepers, and "user-generated content" (e.g. Bruns, 2008). But we now face many important questions about elite persuasion. While it has been reconfigured, it remains of importance for the formation of public opinion and political behaviour. An important task, then, is to identify the elite origins of affectively charged misinformation and the conditions under which it spreads online, exposing potentially large numbers to content which—and this is crucial—many then choose to curate and share in their own social media networks (Thorson & Wells, 2016).

4. Research on digital media and politics has mostly been driven by the rationality expectation and has underplayed the importance of indeterminacy in digital culture

By the rationality expectation I mean the assumption that individuals are reflective, act on the best information available in the media system, and that the best resources for that action are to be found online, because the internet supposedly has comparatively few biases and distortions impacting the production and circulation of political knowledge. As Hedrick et al (2018) have argued in a similar vein, much research about digital media and politics has been informed by the assumption of an "earnest internet." This, they suggest, "generally posits that people act rationally and in good faith; care about facts, truth, and authenticity; [and] pursue ends in line with their political and social values and aspirations..."

This assumption has seldom been questioned in research on digital politics, though new research is now moving beyond this complacency. For example, it is becoming clear just how widespread trolling and other behaviour that does not fit the rationality expectation is on the so-called "ambivalent internet" (Karpf, 2017; Phillips, 2016; Phillips & Milner, 2017; UK Department of Digital, Culture, Media, and Sport, 2019). A more general problem is how slippery authenticity has now become in digitally mediated communication. This goes beyond the much older argument that self-reflexivity and "playfulness" are important parts of online culture (see for example Turkle, 1995). Now, playfulness is implicated in a much broader culture of generalized indeterminacy implicating powerful and large-scale organizational actors. Significant majorities of the public now report that, online, it is increasingly difficult to distinguish what is authentic and sincere from what is inauthentic and insincere. This is visible in the slump in people's trust in online news and information, as evidenced across many countries in recent survey reports by Pew (2018) and the Reuters Institute for the Study of Journalism (RISJ).⁵

⁵ Only 44 percent of people in 37 countries the RISJ surveyed for their 2018 Digital News Report said they trust news overall. But only 34 percent said they trust news found via search and a mere 23 percent trust news found on

The problems are compounded when one considers two points. First, there is emerging evidence that sizeable minorities of the individuals who share problematic news and other information online are doing so in ways that contribute to the decline of trust in the public sphere (Chadwick and Vaccari, 2019). Second, although survey research shows that only a minority of the public trusts news they find through search engines and social media, those same surveys show that search engines and social media are extremely popular gateways for *discovering* news. So, we are faced with the twin paradoxes that many people increasingly distrust the news and information that they themselves play a role in circulating on social media, and most people say that they value encountering news via media they mostly distrust.

Moving beyond the rationality expectation opens up possibilities for understanding these and other pathologies of today's online politics, from the strategically-deployed techniques of "irony" and "satire" so often used in the expression of racism, homophobia, and sexism on mainstream social media platforms and the increasingly popular alt-right sites such as 4Chan, 8Chan, and Gab, to the bizarre, insider memes of the #GamerGate movement opposed to women's influence in public life (Hawley, 2017; Nagle, 2017).

One seriously pernicious contributor to this culture of indeterminacy is so-called "deepfake" video. It is worth reflecting on some of the implications of this development.

It is deepfakes' unusual technological proficiency and their ease of production and distribution—all achieved through multiple acts of digital engagement, of course—that defines their contribution to the new online culture of indeterminacy. Deepfakes have particular technological characteristics that set them apart from other forms of disinformation, and which unsettle some conventional wisdom about how audiences make sense of problematic information. The most important of these is that they rely upon AI "deep learning" that uses already publicly available online video and audio to reconstruct representations of individuals. Granted, deception of one kind or another has always been an important part of mediation; political fakery is as old as politics itself. Visual representation has often hinged on the manipulation of the boundaries between the real and the imagined, and audiences quickly became attuned to the dramatic conceits made possible by increasingly sophisticated editing technologies in the professional entertainment industry (see Gunning, 1989). People learn to distinguish between the factual and fictional modes of communication that often coexist in the same artefact, or they suspend their disbelief. At the same time, the nearest thing to an iron law of both audience research in communication and misinformation research in political science is that prior beliefs, socially situated knowledge, experience, and cultural orientation all play important roles in shaping how we appraise attempts to persuade or mislead us. Audiences interrogate and selectively decode (e.g. Hall, 1979/2001); citizens engage in motivated reasoning based on their "priors" (Flynn et al., 2017). And, given the numbers who now share photos and videos online, it is clear that the internet's visual turn has proved popular because practices such as distributed citizen witnessing have promised a close correspondence between authentic, unmediated social reality and the flow of public representations of that reality.

Yet political deepfakes do not sit easily with these established understandings of audiences and authenticity, precisely because deepfakes are such accomplished forms of nonfictional, visual deception. They leave little interpretive space into which audiences might introduce oppositional readings. Prior beliefs, experiences, and cultural orientations may shape how individuals make sense of deepfakes, but to what extent? Many political deepfakes will rest on their visual representations or on skilful combinations of visual and verbal elements. In these cases, the undetectable nature of the deception challenges the idea that audience members will be able to effectively mobilize their pre-existing cognitive and informational resources—political knowledge, awareness of news and current events, lived experiences, and cultural reference points, or even their basic familiarity with the appearance and gestures of a

social media.

political candidate—to actively make sense of a deepfake.

Deepfake video thus presents some serious challenges to the rationality expectation. Indeed, one symptom of the problem is that they have caused divisions among the global anti-disinformation and fact-checking communities. Some have argued that a more serious problem is so-called “shallow” fakes—simple photoshopping of still images, or the use of misleading captions, for example. There is also the view that, by drawing attention to deepfakes, scholars and journalists may unwittingly contribute to a culture of indeterminacy by creating the perception that nothing can be trusted. In turn, the argument runs, this may empower those who benefit from disinformation (e.g. Wardle, 2019). But this argument misses a broader one. If other forms of deception have historically been more prevalent than deepfakes, it does not necessarily follow that scholars and journalists should not pay attention to the problem of deepfakes. And although there have been plenty of examples of when deceptive visual content has spread online, that content has, after all, been much easier to identify than deepfakes, which is the central point.⁶

If deepfakes become a regular feature of political events, as is already the case with fake social media accounts, fake news websites, and social media bots, one possible outcome is that healthy citizen skepticism turns to cynicism and apathy—the withdrawal that accompanies the attitude that so little political information online can be trusted because establishing the truth is so exhausting. Fears about disinformation often hinge on whether people will be directly deceived by falsehoods, but the lesson of the past is that people are just as likely to become uncertain about the truth and withdraw into the private sphere. This was an important strand of dissident critiques of the neo-Stalinist states in Eastern Europe (e.g. Havel, 1985) and it has its origins in revisionist accounts of propaganda that focus, not on mass deception, but on how a culture of distrust generates perceptions of chaos and indeterminacy that frees illiberal elites to promise to restore order and certainty, while curtailing liberal democratic rights (e.g. Arendt, 1968). It also frees illiberal elites (and now non-elites) to wilfully mislead—because so little can be trusted. As legal scholars Robert Chesney and Danielle Keats Citron have argued in their analysis of deepfakes, this “makes it easier for liars to avoid accountability for things that are in fact true” (Chesney and Citron, 2018).

We are already seeing signs of this culture of indeterminacy. For example, Toff and Nielsen’s qualitative research in the north of England has shown that “I don’t know what to believe” has become one important response to the uncertainties of encountering news on social media and private messaging apps (Toff and Nielsen, 2018). Meanwhile, Petersen et al (2018) have gathered survey data that shows what they term a “need for chaos” is an important motivation among those in Western democracies who share false rumours and conspiracy theories. As the authors put it, “the sharing of hostile political rumours is not motivated by a desire to aid actors within the system. Instead, it is motivated by a desire to tear down the system.” By their estimates, such motivations are present among about 40 percent of the U.S. population (Petersen et al, 2018).

All of this points to an unsettling vision of the future, but to see it and address it requires relaxing the rationality expectation and coming to grips with some of the wilder frontiers of online mis- and disinformation.

⁶ A further proxy indicator that deepfakes are to be taken seriously is that social media companies themselves have issued public statements that, if unchecked, they are likely to harm their business models. See, for example, Mark Zuckerberg’s announcement in June 2019 (<https://www.theatlantic.com/technology/archive/2019/06/zuckerberg-very-good-case-deepfakes-are-completely-different-from-misinformation/592681>) and Twitter CEO Jack Dorsey’s November 2019 announcement that Twitter will ban political advertising on the platform (<https://twitter.com/jack/status/1189634360472829952>).

Conclusion

In this article I have argued that research on digital media and politics ought to be recalibrated to explain how digital media can shape public opinion in ways that are dysfunctional for liberal democratic societies.

Overcoming four epistemological challenges from the legacy of research on digital media and politics will prove central to this task: the tendency to select cases that are progressive or pro-liberal democratic; the tendency to employ the *engagement gaze*; underestimating the trade-offs between affective solidarity and rational deliberation; and the tendency to be driven by the rationality expectation and neglect the importance of indeterminacy in digital culture.

There are no easy and singular solutions to these challenges, but it is also the case that addressing them is already underway across the social sciences. The overarching issue is that disinformation, misinformation, hatred, and intolerance are radically networked like never before, and the raw materials for individuals and organizations to behave in democratically dysfunctional ways are diverse and multiple.

In the context of this new crisis of public communication, much of the work is likely to focus on explaining how social, psychological, and technological variables converge in ways that shape how individuals form identities and opinions about the political world.

Can we fruitfully integrate these objects of analysis—social and psychological variables and the affordances of digital media—to help understand how liberal democracy is evolving, now that the great expansion of social media platforms is nearing completion? Can we develop better understandings of how social media interact with, and potentially reconfigure, the different constraints on rational opinion formation at the individual level? Is it possible to identify the blend of cognitive biases, social identities, and affordances that align to produce democratically dysfunctional forces that threaten the foundations of liberal democracy? And, finally—perhaps the biggest challenge of all—can we, as scholars, effectively intervene in public and policy debates to minimize the impact of these forces in the interests of promoting liberal democratic norms of tolerance and trust?

About the Online Civic Culture Centre (O3C)

Established in 2018 through Loughborough University's Adventure Research Programme, the Online Civic Culture Centre (O3C) applies concepts and methods from social science and information science to understand the role of social media in shaping our civic culture. Led by Professor Andrew Chadwick, it features academic staff and doctoral researchers drawn from the disciplines of communication, information science, social psychology, and sociology. O3C enables interdisciplinary teams of researchers to work together on issues of misinformation, disinformation, and the rise of hate speech and intolerance online. It develops evidence-based knowledge to mitigate the democratically dysfunctional aspects of social media. At the same time, it identifies and promotes the positive civic engagement benefits of social media. For more information, visit the [O3C website](#) and [follow us on Twitter](#).

O3C Researchers

- Professor Andrew Chadwick, Professor of Political Communication, Department of Communication and Media, O3C Director
- Rachel Armitage, doctoral researcher
- Catherine Baker, doctoral researcher
- Meghan Conroy, doctoral researcher
- Professor Louise Cooke, Professor of Information & Knowledge Management, Centre for Information Management (CIM)
- Harvey Dodds, doctoral researcher
- Professor John Downey, Professor of Media and Communication, Department of Communication and Media
- Dr Suzanne Elayan, Postdoctoral Researcher, CIM.
- Professor Tom Jackson, Professor of Information and Knowledge Management, CIM
- Dr Simone Natale, Lecturer in Media and Communication, Department of Communication and Media
- Dr Line Nyhagen, Reader in Sociology, Department of Social and Policy Studies.
- Dayei Oh, doctoral researcher
- Andrew Ross, doctoral researcher and research assistant
- Dr Martin Sykora, Lecturer in Information Management, CIM
- Dr Cristian Tileagă, Senior Lecturer in Social Psychology, Department of Communication and Media
- Dr Cristian Vaccari, Reader in Political Communication, Department of Communication and Media

O3C International Advisory Board

- David Babbs, Clean Up The Internet
- Rob Berkeley MBE, BBC
- Dr Leticia Bode, Associate Professor, Communication, Culture, and Technology programme, Georgetown University, USA
- Duncan Brown, Shift Design
- Dr Emily Dickinson, Opinium Research
- Julie Elliott MP and member of the Digital, Culture, Media and Sport Committee and member of the Digital, Culture, Media and Sport Committee and Chair of the All Party Parliamentary Group on Digital Skills.
- Professor Phil Howard, Director, Oxford Internet Institute
- Carl Miller, Research Director of the Centre for the Analysis of Social Media (CASM), Demos.

- Simon Murdoch, Hope Not Hate.
- Dr Rebekah Tromble, George Washington University.
- Professor Josh Tucker, Director of the Social Media and Political Participation (SMaPP) Lab, New York University.

References

- Arendt, H. (1968). *Between Past and Future: Eight Exercises in Political Thought*. New York: Viking.
- Bakshy, E., Messing, S., and Adamic, L. A. (2015) Exposure to Ideologically Diverse News and Opinion on Facebook. *Science* 348(6239), 1130–1132.
- Barberá, P., Jost, J. T., Nagler, J., Tucker, J. A., & Bonneau, R. (2015). Tweeting From Left to Right: Is Online Political Communication More Than an Echo Chamber? *Psychological Science* 26(10), 1531–1542.
- Bastos, M. and Mercea, D. (2019) The Brexit Botnet and User-generated Hyperpartisan News. *Social Science Computer Review* 37(1), 38–54.
- Bejan, T. M. (2017). *Mere Civility: Disagreement and the Limits of Toleration*. Cambridge, MA: Harvard University Press.
- Benkler, Y., Faris, R., & Roberts, H. (2018). *Network Propaganda: Manipulation, Disinformation, and Radicalization in American Politics*. New York: Oxford University Press.
- Bennett, W. L. & Livingston, S. (2018). The Disinformation Order: Disruptive Communication and the Decline of Democratic Institutions. *European Journal of Communication* 33(2), 122–139.
- Bode, L. & Vraga, E. K. (2018). I Do Not Believe You: How Providing a Source Corrects Health Misperceptions Across Social Media Platforms. *Information, Communication & Society* 21(10), 1337–1553.
- Boler, M. and Davis, E. (2018). The Affective Politics of the “Post-Truth” Era: Feeling Rules and Networked Subjectivity. *Emotion, Space and Society* 27, 75–85.
- Boulianne, S. (2018). ‘Twenty Years of Digital Media Effects on Civic and Political Participation, *Communication Research*. doi: 10.1177/0093650218808186.
- Bruns, A. (2019). *Are Filter Bubbles Real?* Cambridge: Polity.
- Bucher, T. (2018). *If... Then: Algorithmic Power and Politics*. New York: Oxford University Press.
- Chadwick, A. & Howard, P. N. (Eds.) *Handbook of Internet Politics*. London: Routledge.
- Chadwick, A., Vaccari, C., and O’Loughlin, B. (2018). Do Tabloids Poison the Well of Social Media? Explaining Democratically-Dysfunctional News Sharing. *New Media and Society* 20(11), 4255–4274
- Chadwick, A. & Vaccari, C. (2019). *News Sharing on UK Social Media: Misinformation, Disinformation & Correction*. Online Civic Culture Centre, Loughborough University: <https://www.lboro.ac.uk/research/online-civic-culture-centre/news-events/articles/o3c-1-survey-report-news-sharing-misinformation/>
- Chesney, R. & Citron, D. K. (2019, forthcoming). Deep Fakes: A Looming Challenge for Privacy, Democracy, and National Security. *California Law Review*. Available at https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3213954##
- Coleman, S. & Freelon, D. (2015) *Handbook of Digital Politics*. Cheltenham: Edward Elgar.
- Clayton, K., Blair, S., Busam, J.A. et al. (2019). Real Solutions for Fake News? Measuring the Effectiveness of General Warnings and Fact-Check Tags in Reducing Belief in False Stories on Social Media. *Political Behavior*. <https://doi.org/10.1007/s11109-019-09533-0>
- Couldry, N. & Mejias, U. A. (2019). *The Costs of Connection: How Data is Colonizing Human Life and Appropriating it for Capitalism*. Stanford, CA: Stanford University Press.
- Daniels, J. (2009). Cloaked Websites: Propaganda, Cyber-Racism and Epistemology in the Digital Era. *New Media & Society* 11(5), 659–683.
- Davies, W. (2017). A Review of Arlie Russell Hochschild’s *Strangers in their Own Land: Anger and Mourning on the American Right*. *International Journal of Politics, Culture, and Society* 30(4), 413–420.
- Edelman, M. (1988). *Constructing the Political Spectacle*. Chicago: University of Chicago Press.
- Fletcher, R. and Nielsen, R. K. (2017). Are People Incidentally Exposed to News on Social Media? A Comparative Analysis. *New Media & Society* 20(7), 2450–2468.
- Gehl, R. W. (2015). The Case for Alternative Social Media. *Social Media + Society* 1(2), 1–12.
- Ging, D., Lynn, T., & Rosati, P. (2019). Neologising Misogyny: Urban Dictionary’s Folksonomies of Sexual Abuse. *New Media & Society* <https://doi.org/10.1177/1461444819870306>
- Gunning, T. (1989). An Aesthetic of Astonishment: Early Film and the (In)credulous Spectator. *Art and Text* 34, 31–45.
- Hall, S. (1979/2001). Encoding/decoding. In Durham, M. G. and Kellner, D. M. (eds) *Media and Cultural Studies: Keywords*. Oxford: Blackwell, 163–173.
- Havel, V. (1985). *The Power of the Powerless: Citizens Against the State in Central Eastern Europe*.

- London: Routledge.
- Hawley, G. (2017). *Making Sense of the Alt-Right*. New York: Columbia University Press.
- Hedrick, A., Karpf, D., & Kreiss, D. (2018). Book Review: The Earnest Internet vs. the Ambivalent Internet. *International Journal of Communication* 12, 1057–1064.
- Hochschild, A. R. (2016). *Strangers in their Own Land: Anger and Mourning on the American Right*. New York: New Press.
- Jane, E. (2016). *Misogyny Online: A Short (and British) History*. London: Sage.
- Karpf, D. (2017). Digital Politics After Trump (Retrospective Book Review of Andrew Chadwick's *The Hybrid media system: Politics and power*, Zizi Papacharissi's *Affective publics: Sentiment, technology, and politics*, and Daniel Kreiss's *Prototype politics: Technology-intensive campaigning and the data of democracy*). *Annals of the International Communication Association*, 2017. <http://dx.doi.org/10.1080/23808985.2017.1316675>
- Kollanyi, B., Howard, P. N., & Woolley, S. C. (2016). Bots and Automation over Twitter During the First U.S. Presidential Debate (Comprop Data Memo 2016.1). *Computational Propaganda Project, Oxford Internet Institute*: <http://politicalbots.org/wp-content/uploads/2016/10/Data-Memo-Second-Presidential-Debate.pdf>
- Kreiss, D. (2017). The Fragmenting of the Civil Sphere: How Partisan Identity Shapes the Moral Evaluation of Candidates and Epistemology. *American Journal of Cultural Sociology* 5(3), 443–459.
- Kreiss, D., Barker, J. O., & Zenner, S. (2017). Trump Gave Them Hope: Studying the Strangers in Their Own Land. *Political Communication* 34(3), 470–478.
- Marwick, A. and Lewis, R. (2017). *Media Manipulation and Disinformation Online*. New York: Data & Society Institute.
- Mounk, Y. (2018). *The People vs. Democracy: Why Our Freedom Is in Danger and How to Save It*. Cambridge, MA: Harvard University Press.
- Nagle, A. (2017). *Kill All Normies: Online Culture Wars From 4Chan And Tumblr To Trump and The Alt-Right*. Alresford: Zero Books.
- Noble, S. U. (2018). *Algorithms of Oppression: How Search Engines Reinforce Racism*. New York: NYU Press.
- Flynn, D. J., Nyhan, B., & Reifler, J. (2017). The Nature and Origins of Misperceptions: Understanding False and Unsupported Beliefs About Politics. *Political Psychology*, 38, 127–150.
- Papacharissi, Z. (2015). *Affective Publics: Sentiment, Technology, and Politics*. New York: Oxford University Press.
- Petersen, M. B., Osmundsen, M., & Arceneaux, K. (2018). A “Need for Chaos” and the Sharing of Hostile Political Rumours in Advanced Democracies. Paper presented to the American Political Science Association Annual Meeting, 2018. Available at <https://psyarxiv.com/6m4ts>
- Pew Research Center. (2018). *News Use Across Social Media Platforms 2018*. Washington DC: Pew Research Center.
- Phillips, W. (2016). *This Is Why We Can't Have Nice Things: Mapping the Relationship Between Online Trolling and Mainstream Culture*. Cambridge, MA: MIT Press.
- Phillips, W. & Milner, R. M. (2017). *The Ambivalent Internet: Mischief, Oddity, and Antagonism Online*. Cambridge: Polity Press.
- Quandt, T. (2018). Dark Participation. *Media and Communication* 6(4), 36–48.
- Reuters Institute for the Study of Journalism (2018). *Reuters Institute Digital News Report 2018*. Oxford: Reuters Institute. <http://media.digitalnewsreport.org/wp-content/uploads/2018/06/digital-news-report-2018.pdf>
- Rojecki, A. and Meraz, S. (2014). Rumours and Factitious Informational Blends: The Role of the Web in Speculative Politics. *New Media & Society*. doi: 10.1177/1461444814535724.
- Schradie, J. (2019). *The Revolution That Wasn't: How Digital Activism Favors Conservatives*. Cambridge, MA: Harvard University Press.
- Settle, J. E. (2018). *Frenemies: How Social Media Polarizes America*. New York: Cambridge University Press.
- Shin, J. & Thorson, K. (2017). Partisan Selective Sharing: The Biased Diffusion of Fact-Checking Messages on Social Media. *Journal of Communication* 67(2), 233–255.
- Shirky, C. (2008) *Here Comes Everybody: The Power of Organizing Without Organizations*. London: Allen Lane.
- Sparkes-Vian, C. (2019). Digital Propaganda: The Tyranny of Ignorance. *Critical Sociology* 45(3), 393–409.

- Starbird, K. (2017). Examining the Alternative Media Ecosystem Through the Production of Alternative Narratives of Mass Shooting Events on Twitter. *Eleventh International AAAI Conference on Web and Social Media*.
- Stewart, A. J., Mosleh, M., Diakonova, M., Arechar, A. A., Rand, D. G., & Poltokin, J. B. (2019). Information Gerrymandering and Undemocratic Decisions. *Nature* 573, 117–121.
- Stromer-Galley, J. (2003). Diversity of Political Conversation on the Internet: Users' Perspectives. *Journal of Computer-Mediated Communication* 8(3).
- Stroud, N. J. (2010). Polarization and Partisan Selective Exposure. *Journal of Communication* 60 (3), 556–576.
- Sunstein, C. R. (2017). *#Republic: Divided Democracy in the Age of Social Media*. Princeton: Princeton University Press.
- Thorson, K., Cotter, K., Medeiros, M., & Pak, C. (2019). Algorithmic Inference, Political Interest, and Exposure to News and Politics on Facebook. *Information, Communication & Society* doi: <https://doi.org/10.1080/1369118X.2019.1642934>
- Thorson, K. & Wells, C. (2016). Curated Flows: A Framework for Mapping Media Exposure in the Digital Age. *Communication Theory* 26 (3), 309–328.
- Toff, B. and Nielsen, R. K. (2018). “I Just Google It”: Folk Theories of Distributed Discovery. *Journal of Communication* 68 (3), 636-657.
- Turkle, S. (1995). *Life on the Screen: Identity in the Age of the Internet*. London: Simon & Schuster.
- UK Department of Digital, Culture, Media, and Sport. (2019). *Rapid Evidence Assessment: The Prevalence and Impact of Online Trolling*. Ref: 101030: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/811449/DCMS_REA_Online_trolling_.pdf
- Wagner, M. C. & Boczkowski, P. J. (2019). Angry, Frustrated, and Overwhelmed: The Emotional Experience of Consuming News about President Trump. *Journalism*. DOI: <https://doi.org/10.1177/1464884919878545>
- Wahl-Jorgensen, K. (2018). *Emotions, Media and Politics*. Cambridge: Polity.
- Waisbord, S. (2018). Truth is What Happens to News: On Journalism, Fake News, and Post-Truth. *Journalism Studies* 19(13), 1866-1878.
- Wardle, C. (2019). This Video May Not Be Real. *New York Times*. August 14: <https://www.nytimes.com/video/opinion/100000006635241/deepfakes-adele-disinformation.html>
- Wolfram, S. (2019). Testimony Before the Senate Subcommittee on Communications, Technology, Innovation Hearing On Optimizing For Engagment: Understanding the Use of Persuasive Technology on Internet Platforms. <https://writings.stephenwolfram.com/2019/06/testifying-at-the-senate-about-a-i-selected-content-on-the-internet/>
- Wojcieszak, M. E. & Mutz, D. C. (2009). Online Groups and Political Discourse: Do Online Discussion Spaces Facilitate Exposure to Political Disagreement? *Journal of Communication* 59(1), 40–56.
- Woolley, S. C. & Howard, P. N. eds., (2018). *Computational Propaganda: Political Parties, Politicians, and Political Manipulation on Social Media*. New York: Oxford University Press.
- Zaller, J. (1992). *The Nature and Origins of Mass Opinion*. New York: Cambridge University Press.
- Zuboff, S. (2019). *The Age of Surveillance Capitalism: The Fight for a Human Future at the New Frontier of Power*. London: Profile.

Online Civic Culture Centre (O3C)
Department of Communication & Media
School of Social Sciences & Humanities
Loughborough University
Loughborough LE11 3TT
United Kingdom

@O3CLboro

lboro.ac.uk/research/online-civic-culture-centre



**Loughborough
University**

O3C

O3C 2 / December 2019