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After the 'APIcalypse': social media platforms and their fight against critical scholarly research

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ABSTRACT

In the aftermath of the Cambridge Analytica controversy, social media platform providers such as *Facebook* and *Twitter* have severely restricted access to platform data via their Application Programming Interfaces (APIs). This has had a particularly critical effect on the ability of social media researchers to investigate phenomena such as abuse, hate speech, trolling, and disinformation campaigns, and to hold the platforms to account for the role that their affordances and policies might play in facilitating such dysfunction. Alternative data access frameworks, such as *Facebook's* partnership with the controversial Social Science One initiative, represent an insufficient replacement for fully functional APIs, and the platform providers' actions in responding to the Cambridge Analytica scandal raise suspicions that they have instrumentalised it to actively frustrate critical, independent, public interest scrutiny by scholars. Building on a critical review of *Facebook's* public statements through its own platforms and the mainstream media, and of the scholarly responses these have drawn, this article outlines the societal implications of the 'APIcalypse', and reviews potential options for scholars in responding to it.

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Introduction: end of an era

The face of scholarly social media research is changing, rapidly. For the past ten years or so – since *Facebook's* userbase began to grow rapidly in 2008, and *Twitter's* followed suit in 2009 – there had been a steady growth in the field, in methodological, theoretical, empirical, and organisational terms (see e.g., Baran & Ghaffari, 2017; Snelson, 2016; van Osch & Coursaris, 2014; Zimmer & Proferes, 2014). Building on increasingly large datasets, gathered through the Application Programming Interfaces (APIs) of the leading platforms, social media research had proven a particularly fertile field: driven especially by a number of leading centres for digital media research, the scholarly community developed and shared increasingly sophisticated methods and tools for gathering, analysing, and visualising social media data (Zimmer & Proferes, 2014, p. 257). These included, for *Twitter*, the public data gathering service *TwapperKeeper.com*, its open-source self-install version *yourTwapperKeeper* (2013), and subsequently especially the *Twitter Capture and Analysis*

Toolkit (TCAT), developed at the Digital Methods Initiative (DMI) at the University of Amsterdam (Borra & Rieder, 2014). For *Facebook*, DMI researchers developed the *Netvizz* tool (Rieder, 2013), with several other popular solutions also available. Further, commercial services such as Texifter (2018) partnered with social media platform providers to offer current and historical data and associated analytics in formats and at price points that specifically targeted scholarly users. As the following discussion will show, except for *TCAT* all of these tools and services have now been shut down or severely affected by changes to *Facebook*'s and *Twitter*'s API frameworks; this 'APIcalypse' is likely to severely affect further scholarly research on these platforms.

This considerable innovation in research methods and techniques that these tools represent also produced further research initiatives at increasingly ambitious scales, and often these initiatives specifically targeted the major gaps remaining in social media scholarship. For instance, much API-driven *Facebook* research remained limited to the platform's public spaces (such as *Facebook* pages), for obvious ethical, privacy, and practical reasons, and the Danish *Digital Footprints* project (2018) addressed this by inviting Facebook users to donate access to their private networks by connecting with the project's Facebook app (Bechmann & Vahlstrup, 2015). On *Twitter*, the bulk of the research focussed on easily accessible datasets centring on hashtags and keywords (a limitation highlighted *inter alia* by Burgess & Bruns, 2015); the Australian *TrISMA* project (Bruns et al., 2016) addressed this shortcoming by identifying and following the public activities of all 3.7 million Australian *Twitter* accounts. Across both platforms (and beyond), there was a need to generate more reliable, long-term, comparative metrics for user activities, especially around major world events, and the *Illuminating 2016* (Stromer-Galley et al., 2016) project addressed this task in the context of the 2016 US presidential elections, for example.

Finally, such work has also been increasingly supported by scholarly infrastructure. Journals such as *Information, Communication & Society* have opened their pages to a growing number of social media research articles (Snelson, 2016, p. 7); the International Conference on Weblogs and Social Media (ICWSM) grew out of earlier Web- and blog-related events in 2007; the annual Social Media & Society conference was launched in 2010; and the (unrelated) open-access journal *Social Media + Society* followed in 2015. More established conferences such as those of the Association of Internet Researchers (AoIR) or the International Communication Association (ICA) have also featured a substantial number of papers building on social media scholarship.

The platforms themselves have long had an ambivalent relationship with such research, however. Early on, and especially in the face of accusations that social media were merely used for 'pointless babble' (Pear Analytics, 2009) and other 'banal' purposes (Rogers, 2014), they utilised scholarly research from time to time to demonstrate their own relevance and convince prospective commercial and government institutions to sign on to their platforms (see e.g., *Twitter Blog* posts such as Baker, 2015; Rogers, 2013). Over the years, the platforms have also hired a substantial number of university graduates – in instrumental fields such as computer science, unsurprisingly, but importantly also from more critical disciplines such as media, communication, and cultural studies – to bolster their workforce in key areas of operation; on occasion, they have also collaborated with external research teams (e.g., Kramer, Guillory, & Hancock, 2014; Su, Sharma, & Goel, 2016). And from time to time, the platforms have offered 'data grants' and similar

competitive schemes that explicitly invited scholars to apply for funding and data access for particular research initiatives. Indeed, for all its faults, even *Twitter's* ill-fated 'gift' of the entire *Twitter* archives since 2006 to the US Library of Congress (Alaimo, 2017; Stone, 2010) could be charitably regarded as a recognition both of the historical value of *Twitter* archives as a 'first draft of the present' (Bruns & Weller, 2016), and of the possible benefits of an in-depth scholarly investigation of their contents.

Yet the relationship between researchers and platforms was never entirely harmonious. For example, while *Twitter* offered elevated API access to researchers and developers in the early days of the platform (Bucher, 2013), in order to build its ecosystem and generate publicity, such access was eventually rescinded as the platform began to exploit the value of its data through commercial access frameworks like the data reseller GNIP (which eventually became its wholly-owned subsidiary). This shift in attitude towards the third-party researcher and developer ecosystem was summed up by one developer as 'thanks for getting so many people interested in Twitter. Now get lost', as a study by Bucher (2013) reports.

A notable early sign of this reorientation was that in 2011, *Twitter* forced the closure of the popular *TwapperKeeper.com* service, which had operated an on-demand keyword and hashtag gathering service and had made the resulting datasets publicly available to its users (O'Brien, 2011); this also meant that the sharing of datasets between researchers was increasingly conducted through non-public, grey channels (Weller & Kinder-Kurlanda, 2015). *Facebook's* relationship with scholars, too, soured considerably, especially after the substantial global controversy around the 2014 'emotional contagion' study it conducted in collaboration with researchers at Cornell University (Kramer et al., 2014), which was widely criticised for insufficiently addressing the ethical dimensions of a research approach that did not seek informed consent from the nearly 700,000 *Facebook* users whose newsfeeds were manipulated (Flick, 2016).

Indeed, this controversy may be seen as an early example of the significantly more intense criticism that has been levelled at *Facebook*, *Twitter*, and other social media platforms since 2016 for their treatment of users and their data, for their insufficient responses to platform issues ranging from hate speech and abuse through breaches of privacy to the dissemination of mis- and disinformation, and for their systematic evasion of critical and independent oversight. Such critiques, and the platforms' responses to them, were prompted especially by the widely publicised controversy around the dubious data analytics company Cambridge Analytica (Constine & Hatmaker, 2018), but in reality, that specific case is merely emblematic of a longer and more gradual process of disconnect between platforms and scholars, even if it was used by both sides as a justification for their subsequent actions.

Drawing substantially on the public statements of *Facebook* and other platforms, as published through their own corporate sites and reported in the mainstream media, and on the responses from the scholarly community that they prompted, this article explores the radical changes to API access, especially for *Facebook*, that have followed the Cambridge Analytica moment. It offers a critical evaluation, from the scholarly perspective, of the justifications provided for these changes, and considers the implications of this 'APIcalypse' for critical, independent, public-interest scholarship. It also critiques the alternative data access models now proposed and implemented by platforms like *Facebook* and *Twitter* and shows how these initiatives appear designed more to generate

positive media coverage than support meaningful scholarship. It closes with an overview of the possible pathways for researchers affected by this sudden crippling of social media data access, and a call to action for scholars to resist the platforms' duplicitous changes to their API policies.

In doing so this article takes a decidedly 'data activist' perspective (Kazansky, Torres, van der Velden, Wissenbach, & Milan, 2019), prompted by a growing consensus amongst social media scholars that these increasing restrictions are problematic not only for the research itself, but also for the society and societies in whose interest such critical, independent, publicly-funded research is conducted. These concerns have been expressed most prominently in a series of open letters to *Facebook* and other platforms by scholars and the foundations and non-government organisations that support their research (e.g., Bruns, 2018; Knight First Amendment Institute, 2018; Mozilla, 2019a, 2019b), as well as in public interventions from former *Facebook* insiders (e.g., Stamos qtd. in Hughes, 2019; Mac & Warzel, 2018). This article also draws on these contributions to outline the platforms' key strategies in responding to such criticism, and to identify four possible pathways for social media researchers trying to grapple with the rapidly changing environment for their work.

Cambridge Analytica and its aftermath

The Cambridge Analytica scandal broke in earnest with the publication of Carole Cadwalladr's investigative article in *The Guardian* on 17 March 2018. In addition to more conventional, offline techniques, the media coverage revealed Cambridge Analytica's apparent data analytics and psychographic voter targeting capabilities, building especially on social media data obtained from *Facebook* with the help of a 'personality test' app that gathered information from up to 87 million users (Constine & Hatmaker, 2018). This highlighted *Facebook*'s commodification of user data in general, and its lax user privacy protection measures in relation to third-party *Facebook* apps in particular.

Key to this aspect of the controversy was the role played by researcher and developer Aleksandr Kogan, who was singled out in *Facebook*'s initial statement on its suspension of Cambridge Analytica and parent company Strategic Communication Laboratories from the platform:

In 2015, we learned that a psychology professor at the University of Cambridge named Dr Aleksandr Kogan lied to us and violated our Platform Policies by passing data from an app that was using Facebook Login to SCL/Cambridge Analytica, a firm that does political, government and military work around the globe. (Grewal, 2018)

For his part, Kogan acknowledges that he developed the app used by Cambridge Analytica, but also claims that he did so in the employ of Cambridge Analytica rather than as a University of Cambridge scholar. From this perspective, then, Kogan suggests that

[what] Cambridge Analytica has allegedly done, [to] use people's Facebook data for micro-targeting, is the primary use case for most data on these platforms. Facebook and Twitter and other platforms make their money through advertising and so there's an agreement between the user of 'hey, you will get this amazing product that costs billions of dollars to run and in return we can sell you to advertisers for micro-targeting'. (Qtd. in Weaver, 2018)

This article is not the appropriate vehicle to judge the truth of these conflicting claims; rather, for our present purposes it is important to highlight the immediate emphasis on inappropriate data sharing practices between research and industry in *Facebook's* public response. This diverts attention from far more fundamental questions about the ethical and privacy implications of its commodification of user data. After all, even *Facebook* itself admits that Kogan 'gained access to this information in a legitimate way and through the proper channels that governed all developers on Facebook at that time', and only 'subsequently' failed to 'abide by our rules', by sharing the data with Cambridge Analytica (Grewal, 2018). Indeed, this point is strengthened further in a next-day update to the press release, in response to media reports that the scandal constituted a data breach:

Aleksandr Kogan requested and gained access to information from users who chose to sign up to his app, and everyone involved gave their consent. People knowingly provided their information, no systems were infiltrated, and no passwords or sensitive pieces of information were stolen or hacked. (Grewal, 2018)

An uncharitable reading of *Facebook's* response to the Cambridge Analytica controversy, then, might conclude that by carefully highlighting Kogan's alleged role in the data gathering process the company's public relations department deliberately sought to obscure the fact that the platform's fundamental business model had ostensibly enabled the emergence of Cambridge Analytica and similar political and advertising microtargeting services. This should not immediately be understood as part of a long-term strategy to discredit scholarly social media researchers, however – more likely, as Kogan himself also alludes to (Weaver, 2018), his unquestionable involvement in Cambridge Analytica's data gathering efforts simply positioned him as an obvious and convenient scapegoat that enabled *Facebook* to divert attention from its own business practices.

Facebook's reaction to the Cambridge Analytica controversy, and its and other platforms' subsequent actions in related contexts, reveal a number of interweaving corporate strategies that claim to improve data security and user privacy, but by accident or design also severely undermine critical, independent, public-interest research. Based on the platforms' own announcements, the following discussion documents three key elements of these strategies; subsequently, the article also outlines various possible pathways for scholarly responses to these interventions.

Suspension and shutdown: new restrictions to APIs and terms of service

The immediate response to the Cambridge Analytica controversy was to disable data access for potentially problematic API clients, and to exclude potential future users by tightening the APIs' terms of service. In addition to cancelling the API data access of Cambridge Analytica itself, *Facebook* reviewed the practices of several other social media data analytics services, in specific political as well as more general commercial fields, and reportedly suspended some 200 third-party apps (Pasternack, 2018). In July 2018, it even briefly banned one of the industry leaders, Crimson Hexagon, over allegations of improper data use. In relation to that suspension, *Facebook's* Vice-President of Product Partnerships stated, somewhat implausibly, that 'we don't allow developers to build surveillance tools using information from Facebook or Instagram' (ABC News, 2018).

In the wake of the immediate scandal, *Facebook* soon announced further changes to the data access regimes for its public API services. Without warning third-party developers and researchers, it advanced the previously planned shutdown of subsidiary platform *Instagram*'s public API from 31 July to 4 April 2018 (Constine, 2018); on the same day, it also announced substantial reductions to the functionality of *Facebook*'s Events, Groups, and Pages APIs – that is, to the key APIs providing data on public activity on the platform – that similarly came into effect immediately, 'starting today' (Schroepfer, 2018). The announcement also foreshadowed further API adjustments as well as reviews of data access permissions for existing apps 'over the coming months'.

Although some of these changes may be welcome in principle where they genuinely improve data protection and user privacy, the lack of consultation about and speed of implementation of these adjustments also meant that a considerable number of third-party apps and services, including key research tools, were now failing to operate correctly, or were threatened by future changes. One key casualty was the widely used *Facebook* research tool *Netvizz*, which was required to undergo a new app review process for 'suspicious applications' and failed to regain approval, for reasons that *Facebook* has not clarified. As developer Bernhard Rieder, a scholar in the Digital Methods Initiative at the University of Amsterdam, has written, this means that to date 'Netvizz still functions ... and may very well continue to live a zombie existence in the future', but *Facebook*'s inherently non-specific feedback to app approval requests also means that scholars are increasingly unlikely to try to maintain such research tools 'in this structurally opaque and unhelpful environment'. For his part, Rieder himself has already decided to 'take a step back from Netvizz' (Rieder, 2018), and he is unlikely to be the only app developer – in both the scholarly and commercial fields – to have responded in this way.

Facebook and its subsidiaries are not the only platforms to have reacted in this way to the Cambridge Analytica controversy: in July 2018, *Twitter*, too, announced changes to the way it manages its API. Here, the initial changes were predominantly administrative rather than technical: while previously, it was comparatively straightforward to register as a *Twitter* developer and request one or more authentication keys required for *Twitter* apps (including key scholarly data gathering tools like *TCAT*) that access the public *Twitter* API, the company is now implementing a new registration process requiring developers 'to provide detailed information about how they use or intend to use Twitter's APIs so that we can better ensure compliance with our policies' (Roth & Johnson, 2018). However, as a *Bloomberg* article on these changes has pointed out,

users who sign up to use the developer platform also have to agree to Twitter's policies. One of these imposes restrictions on studying a range of subjects, including political beliefs and racial and religious topics. ... It's disturbing that the company requires researchers using their API to agree to policies that include restrictions on studying topics like identity politics. (Alaimo, 2018)

Facebook's terms of service similarly restrict the conduct of legitimate scholarly and journalistic research into problematic uses of the platform (Knight First Amendment Institute, 2018, p. 2f.)

Subsequent changes to the *Twitter* API itself appear to have been targeted especially at third-party clients used by power users; this has curtailed the functionality of popular tools such as *Twitterific* or *Hootsuite*, which can now no longer offer automatically refreshing

Twitter timelines or push notifications. While less critical for most scholarly purposes, these changes reveal a growing desire for *Twitter* to position its own apps and Website as the only legitimate point of access to *Twitter* content (Perez, 2018), in what the company itself calls a ‘more focused approach’ (Johnson, 2018). In addition to such end-user tools, however, another target of this ‘more focused approach’ was also the commercial data service *Texifter*, which had previously provided historical *Twitter* data and analytics to scholarly users under a long-standing licence arrangement with the platform. According to *Texifter* CEO Stu Shulman, ‘Twitter rejected its application to renew its contract to use Twitter data for academic purposes and said that only use of Twitter data for businesses would be acceptable. ... Twitter made the pricing prohibitive’ (qtd. in Alaimo, 2018), too, and *Texifter* was eventually decommissioned on 30 September 2018 (Texifter, 2018).

It should be noted here, of course, that other commercial social media analytics services still exist, and continue to offer metrics for *Twitter* and other platforms; additionally, *Twitter* itself also offers premium, paid data access models. However, their price points, data offers, and analytics services are generally ill-suited to typical scholarly research needs: the costs associated with such services are usually unaffordable for scholars with limited funding; data access – especially with respect to export for analysis in scholarly content or network analysis software – is often shallow and limited; and analytics functions are generally geared to basic market research questions rather than more complex scholarly investigations. Amongst the commercial data providers, *Texifter* was the only service that explicitly addressed scholarly customers, and its loss leaves a considerable gap in the social media research landscape.

For increasingly beleaguered major platforms such as *Facebook* or *Twitter*, it is easy to see independent, critical scholarly research as a potential threat to their corporate identity, and to treat it accordingly; as Stanford University’s Justin Littman has put it, ‘research by academic institutions is clearly perceived as a liability post-Cambridge Analytica. ... While there’s clearly a huge societal benefit to this research, it’s not necessarily research that benefits social media companies directly. It’s easier to say no than to figure out how to handle it properly’ (qtd. in Alaimo, 2018). From this perspective, the rapid reduction of data access through the platform APIs in the wake of Cambridge Analytica may not simply be a genuine countermeasure to stop similar rogue operators: these would presumably have the resources to buy data from commercial social media data resellers, or the wherewithal to engage in data acquisition through large-scale scraping or other unauthorised means. Rather, it is also a convenient step towards disabling and evading unwanted independent, critical, public-interest scholarly scrutiny.

Indeed, such efforts to evade scrutiny transcend API-based access methods. In early 2019, *Facebook* also took explicit steps to disable the functionality of a browser plugin promoted by the investigative journalism initiative *ProPublica* that would capture the *Facebook* ads encountered by plugin users, as well as a number of similar other tools. Using direct Web scraping methods that did not rely on API access, the plugin sought to generate independent, publicly accessible observational data especially on political advertising practices in the United States and elsewhere; citing a need ‘to keep people’s information safe’, *Facebook* responded by deliberately obfuscating the HTML code served by its Website in such a way that ads could no longer be immediately recognised as distinct elements of a *Facebook* page (Merrill & Tobin, 2019). Subsequent updates and counter-updates to the

plugin and HTML code have sought to re-enable and re-disable the tool's functionality, respectively. It should be noted here that *Facebook* also provides a searchable *Facebook* Ad Library that is meant to offer some transparent information on what ads are scheduled on the platform, and by whom – but a lack of comprehensive search functionality and limited international coverage have resulted in widespread criticism of this initiative, and public calls for a more research-focussed redesign (Mozilla, 2019a, 2019b).

Corporate data philanthropy: a 'new paradigm' for data access?

Partly in an effort to address the significant data access gaps caused by such shutdowns, and partly also to ward off the negative publicity resulting from the growing scholarly criticism of their heavy-handed new enforcement tactics, several major social media platforms have sought to replace their previously indiscriminately available APIs with more targeted, bespoke schemes for scholarly data access; the *Facebook* Ad Library is one example for such initiatives. Indeed, even before Cambridge Analytica broke, and partly in response to persistent criticism of its insufficient response to rampant abuse, hate speech, and fascist propaganda on its platform, *Twitter* had launched a somewhat vague call for research proposals that would help it 'measure the health of Twitter' (Twitter, Inc., 2018); in July, it revealed that two of more than 230 proposals had been selected for funding and data access (Gadde & Gasca, 2018). This approach broadly mirrors the company's never repeated 'Twitter #DataGrants pilot program' of 2013, which awarded data access to six out of 1,300 submitted applications (Kirkorian, 2014) – in each case, the success rate for applications was considerably lower than even for most of the competitive funding schemes operated by the various national and international research councils, and it is therefore perhaps more appropriate to describe these initiatives as data *lotteries* than as data grants (Burgess & Bruns, 2015).

Facebook has chosen to follow a broadly similar path, but to avoid a fully in-house applications assessment process. Instead, it empowered two researchers from Harvard and Stanford to set up a new entity, 'Social Science One', that also partnered with seven US-based non-profit foundations and the non-profit Social Science Research Council to facilitate its own applications process for funding and *Facebook* data access. The mission of this new entity is outlined in an unpublished manuscript authored by the founders, Gary King and Nate Persily, and made available via Social Science One's site: 'we propose here a new model of industry-academic partnerships designed to span the divide between the needs of internet technology firms, academic researchers, and the public, even in highly politicized environments' (King & Persily, 2018, p. 2). On Social Science One's Website, however, it is also made clear that this partnership is not envisaged as one between equals: 'it enables firms to enlist the scientific community to help them produce social good, while protecting their competitive positions' (Social Science One, 2018a). This form of corporate data philanthropy appears designed predominantly to benefit the corporation, therefore.

The 'King-Persily paper' presents the needs of social media research in a way that makes the organisational model for Social Science One appear as the logical 'new paradigm for industry-academic partnerships' (Social Science One, 2018b). To justify Social Science One's model of data philanthropy, King & Persily present the reader with only two stark, 'antipodean' choices for how the relationship between scholars and platforms

could be organised: on the one hand, data provision to ‘fully independent’ scholars, which is unlikely to serve the interests of the platform, and on the other hand, academic research ‘inside companies’ and under ‘nondisclosure and other legal agreements’ (King & Persily, 2018, p. 3). Both of these models are flawed, they suggest: ‘academic independence with inadequate information generates little value. Full information with dependence on the firm for pre-publication approval poses actual or apparent conflicts of interest’ (2018, p. 4). The obvious answer to this dilemma is the Social Science One paradigm, naturally, rather than any of the fundamentally different approaches we might also envisage: a model that ‘ensures that the company’s interests are protected, the data is kept secure and private, and the researchers publishing maintain independence’ (2018, p. 4).

The proposed price of such harmony, however, is to limit scholarly inquiry to issues and topics that are unlikely to put pressure on the platform providing the data: ‘the optimal way forward... is to find research questions that are of intellectual interest to the scientific community and either provide valuable knowledge to inform product, programmatic, and policy decisions, or are orthogonal to company interests’ (King & Persily, 2018, p. 12). This reads as a very thinly veiled call to researchers to restrain their criticism if they hope to work under the Social Science One paradigm: in the case of platforms like *Facebook* or *Twitter*, this approach to finding research questions would presumably rule out research that seeks to address key current issues such as abuse, hate speech, or disinformation (which are certainly not ‘orthogonal’ to these platforms’ interests), if there was any likelihood that the research might find the platforms’ own affordances or policies culpable in facilitating such phenomena. King & Persily allow that ‘some bad news for the company will sometimes unavoidably surface’, but warn that ‘few companies would participate in facilitating research designed solely to evaluate [their] own actions’ (2018, p. 12).

In line with the ‘new paradigm’ outlined in the King-Persily paper, therefore, Social Science One set a number of strict limitations for the first (and thus far only) call for project proposals it has published. The call

invites proposals that examine the impact of social media and related digital technologies on democracy and elections, generate insights to inform policy at the intersection of media, technology, and democracy, and advance new avenues for future research (Social Science One, 2018b),

yet requires that researchers ‘should not be investigating internal corporate policies, decisions, or product development’ and should do so only ‘for scientific purposes, not for purposes of advocacy, journalism, investigation of individuals, or research for competitors’ (*ibid.*). It is not immediately clear how these restrictions are compatible with the Social Science One model’s stated aim that ‘researchers publishing maintain independence’ (King & Persily, 2018, p. 4).

Presumably, in fact, these restrictions would rule out identifying the individual accounts (i.e., *individuals*) responsible for the spread of mis- and disinformation, hate speech, trolling, and other misuses of the platform that might disrupt democratic processes and change election outcomes, and would prevent researchers from working with mainstream media to disseminate their findings to a general audience (*journalism*), or from developing proposals to policymakers and regulators for how to address such election interference more effectively (*advocacy*). This leaves precious little room for actual,

meaningful, socially responsible, and impactful research, especially at a time when there are growing calls for scholars to embrace a more ‘data-activist research agenda’ (Kazansky et al., 2019, p. 244) in order to combat pressing societal problems.

After all, in the wake of the UK’s Brexit referendum and the US presidential election and the widely publicised role that interference campaigns on social media platforms by various political, commercial, and state actors played in their outcomes (e.g., Grinberg, Joseph, Friedland, Swire-Thompson, & Lazer, 2019; NATO Strategic Communications Centre of Excellence, 2017; Woolley & Howard, 2017), but also in light of broader concerns about user profiling, spam, abuse, hate speech, trolling, and extreme polarisation in social media, much of the current research agenda for social media scholars is far from ‘orthogonal’ to the platforms’ interests. Instead, it is explicitly designed to assess the extent of the problem, to evaluate the role of platform affordances, policies, and actions in creating or mitigating it, and to develop technological, social, legislative, regulatory, or educational responses to it (e.g., Bounegru, Gray, Venturini, & Mauri, 2017; Wardle & Derakhshan, 2017). In other words, in sharp contrast to an earlier period when social media researchers contributed to the ‘debanalisation’ (Rogers, 2014) of social media platforms by documenting their increasingly important informational, social, or commercial roles, and thereby also facilitated these platforms’ gradual societal acceptance, the subject matter of much current research is a great deal darker: as they focus on the most prominent contemporary social media phenomena, scholars are now dealing with a great deal more dysfunction and deliberate disruption than was the case some five or ten years ago. Therefore, they may well be seen by platform providers as contributing to a growing chorus of public criticism.

Finally, the Social Science One call also provides some additional detail about the proposal review process. In addition to a peer review effort overseen by the Social Science Research Council, and an additional ethics and privacy review by a separate panel, in a final stage

the co-chairs at Social Science One, acting like editors at a scholarly journal, take input from both prior steps, along with their knowledge as a trusted third party following the structure of this initiative, and make final **substantive decisions** about which proposals to support. Examples of the private knowledge the co-chairs have include ongoing litigation that would subject researchers addressing certain topics to legal discovery; proprietary information that change[s] the likely importance of certain research topics; and complex privacy constraints that would be violated in certain types of data. (Social Science One, 2018b; emphasis in original)

Hidden within this language is the fact that this third step provides the Social Science One chairs with the exclusive power to veto proposals even where they have successfully passed the first two hurdles, in a way that seems entirely *unlike* the decisions commonly made by journal editors once peer review has recommended an article for publication. Further, as this power to make ‘substantive decisions’ at this final stage is largely based on proprietary ‘private knowledge’ stemming from their privileged relationship with *Facebook*, such decisions are inherently intransparent, and there appears to be no opportunity for researchers to appeal against them. Surely, a removal of this third, final step – leaving only peer review and ethics and privacy review as the two hurdles that proposals must pass – would ensure a much more accountable, transparent, and independent selection process.

Deflection and spin: generating positive PR, not critical research

To be very clear: this critical reading of the Social Science One model is not meant as an attack on the foundations that support it, nor on the scholars from around the world who have chosen to serve on its peer review and other committees; there is every indication that they are genuinely interested in exploring new models to provide access to *Facebook* data for research purposes. The same cannot be said so easily about *Facebook* itself, however: in addition to its efforts to control the flow of data to researchers more explicitly, the company has also engaged in some highly problematic attempts to spin the public debate in its favour.

As noted, *Facebook* seems to be making its API and Website changes at least in part to disable and exclude critical scholarly social media research, while using far more circumscribed and deeply flawed alternative data access schemes like Social Science One or the *Facebook* Ad Library for cover. These corporate ‘data philanthropy’ initiatives – and others before them, like *Twitter*’s ‘gift’ of its complete archive to the Library of Congress (Stone, 2010) or the *Twitter* Data Grants and Health Metrics initiatives – certainly also generate substantial positive publicity for the platforms and enable them to be seen to do something that demonstrates their corporate social responsibility. If, in the end, these initiatives come to nothing – if the Library of Congress fails to develop appropriate frameworks for providing access to the data (Alaimo, 2017), if the data grants support only a vanishingly small percentage of proposals, or if Social Science One excludes any non-orthogonal research projects – then the companies can still point to their initial support for these initiatives and say ‘well, we tried’.

This openly cynical reading of these initiatives might be dismissed as mere conspiracy theory, were it not for the fact that companies like *Facebook* have undeniable form in acting in such duplicitous ways. In late 2018, a major *New York Times* investigation revealed that rather than, or at the very least in addition to, addressing its extensive problem with Russian interference campaigns during and after the 2016 US presidential election, *Facebook* embarked on

an aggressive lobbying campaign to combat Facebook’s critics, shift public anger toward rival companies and ward off damaging regulation. Facebook employed a Republican opposition-research firm to discredit activist protesters, in part by linking them to the liberal financier George Soros. (Frenkel, Confessore, Kang, Rosenberg, & Nicas, 2018)

As journalists covering the story were quick to point out, the attempt to embroil Soros in this debate demonstrates particularly bad faith, given the persistent attacks on Soros by elements of the domestic and international far right, neo-fascists, anti-Semites, and Russian-controlled disinformation operatives:

no company in the world is in a better position than Facebook to know what a toxic dog-whistle this is: Soros has been the bogeyman of far-right and nationalist movements across the world, and has become a transparent means for people trying to keep a veneer of respectability to spread anti-Semitism. (Ball, 2018)

In response to the *New York Times* report, *Facebook* acknowledged that it had been working with Definers Public Affairs, a lobbying firm that is itself associated at least indirectly with far-right influence campaigns in the United States, but played down its efforts to control and reshape the narrative (Facebook Newsroom, 2018). Such feeble efforts to justify

the company's actions were met with widespread derision and dismay. For instance, Kate Starbird, a leading scholar of social media disinformation campaigns at the University of Washington, tweeted:

This is turning my stomach. Around the same time I was invited to Facebook to give a presentation on online disinformation, FB's leadership was hiring an influence firm to use disinfo to attack its critics (invoking one of the same tropes that we'd seen Russia use for years). (2018a)

I know a lot of amazing people who work for Facebook and I know there are people who care working hard to improve how the platform deals with mis/disinformation. But I'm having a hard time reconciling that with this most recent revelation about their own information operations. (2018b)

Facebook's emphasis on the role of Aleksandr Kogan as the purported source of Cambridge Analytica's data should be read in this context, too. It is notable that the King-Persily paper also follows *Facebook's* line of argument, repeating this accusation as a justification for its very hands-on *Facebook* partnership model:

after all, the notorious recent 'Cambridge Analytica' scandal began with a breach by an academic (acting as a developer) of a developer's agreement with Facebook, which barred his sale of the data to a for-profit company. That scandal is an academic scandal as well. (King & Persily, 2018, p. 13)

However, if Kogan was indeed 'acting as a developer' rather than academic, then most likely he did not breach *Facebook's* developer agreement, as even *Facebook's* own statements have acknowledged (Grewal, 2018). Again, the point of the present article is not to pass judgment on Kogan's culpability as an actor in Cambridge Analytica – but to paint Cambridge Analytica as an 'academic scandal' in any significant way seems to deflect from the fact that the fundamental corporate responsibility must surely rest with *Facebook* and Cambridge Analytica as corporate actors, rather than with individual employees.

Attempts by major corporations to smear rather than engage perceived enemies are far from new, of course. They resemble the efforts of the tobacco, pharma, or fossil fuel industries to discredit their critics (e.g., for the tobacco industry: Yach & Bialous, 2001; for fossil fuels: Nasiritousi, 2017) – attempts that have often been successful in delaying meaningful societal debate and action by decades (e.g., Chapman & Carter, 2003). Scholars with longer memories may also recall the concerted efforts by Microsoft and other stakeholders in the commercial software industry in the mid-1990s to ward off the perceived threat from open-source development projects by orchestrating a publicity campaign that highlighted the supposed unreliability and insecurity of collaboratively and communally developed open-source operating systems and other critical software, in comparison to their proprietary, closed-source solutions. Such calculated smear campaigns became so persistent during this time that they even acquired their own acronym: FUD, for the 'fear, uncertainty, and doubt' that open-source advocates suspected them of trying to spread (Pfaffenberger, 2000; Raymond, 2001).

That said, as Starbird's tweets indicate, it should be acknowledged here that the platform providers and their workforces themselves are likely to be genuinely conflicted about how to deal with new scholarly and especially methodological advances: to the

extent that new methods enable them to more effectively combat the spam, abuse, and dis-information that drive users away from engaging in social media, for example, relevant teams within these corporations have a vested interest in employing these methods themselves, *internally*, in order to improve user experience and retention; at the same time, however, the use of these methods by independent researchers, *externally*, could also result in the generation of public outcomes that would alert policymakers, regulators, law enforcement, and ordinary users to the true extent of these and other problems, and at least at the corporate leadership level platform providers have an equally strong interest in preventing such embarrassment. This is not simply an abstract conflict, but one that may be fought quite literally between a platform's tech and PR departments – it is important not to envisage transnational social media corporations as monolithic entities without their own internal politics.

Investigative reports are increasingly, if often without direct attribution, referring to internal conflicts within social media companies about their appropriate corporate stance towards such issues, and some former staff have also provided insights into the complex political battles being fought between them. Most prominently, in an internal memo to staff published by *BuzzFeed*, *Facebook's* departing Chief Security Officer Alex Stamos outlined a number of corporate policies and processes requiring 'a bottom-up change in culture' (qtd. in Mac & Warzel, 2018: n.p.); in his open letter in the *New York Times*, *Facebook* co-founder Chris Hughes expressed his concerns that all-powerful CEO Mark Zuckerberg 'has surrounded himself with a team that reinforces his beliefs instead of challenging them' (2019: n.p.), and calls for the company to be broken up.

Again, such intra-organisational conflicts are also known from the tobacco, pharma, and fossil fuel industries. If the *Times'* allegation that *Facebook* engaged in a deliberate, multi-year effort to attack and undermine the company's critics is correct, it might thus be appropriate to speak of 'Big Social' – in addition to other unscrupulous transnational industries misusing their corporate power to evade parliamentary, regulatory, journalistic, and societal scrutiny. It also becomes a great deal easier to believe that *Facebook* would be prepared to avert further critical investigation of its platform by other means – for instance by locking out independent, scholarly, public-interest researchers and partnering instead with select partners to set up Social Science One as an incentive for scholars to redirect their efforts to more 'orthogonal' matters instead.

The path ahead: four options for scholarly researchers in a hostile environment

As social media platforms are crippling the functionality of their public APIs to the point that they no longer enable anything but the most basic forms of investigation; as they single out scholarly researchers as convenient scapegoats in order to demonstrate action against data abuse, and conduct cynical fear, uncertainty, and doubt campaigns against them; and as they largely continue business as usual in building their emerging data analytics industries, in spite of occasional action against commercial operators that are implicated in the inappropriate use of such data: what opportunities remain for critical, independent, public-interest scholarly research? Four major pathways are becoming increasingly clear.

Walk away

First, researchers frustrated with the diminishing functionality of platform APIs, the disingenuous attacks on their work, and the ill-constructed alternative data lotteries orchestrated by the platforms and affiliated entities may be tempted simply to walk away. Such frustration is evident in Starbird's statement that *Facebook's* FUD campaign 'is turning my stomach' (2018a); it has already led to *Texifter's* discontinuation of its scholarly *Twitter* data access service. Similarly, *Netvizz* developer and Digital Methods Initiative scholar Bernhard Rieder stated in a post about the future of his crucial *Facebook* data gathering tool that

I enjoy programming like few other things in life ... , but the increasing hostility toward independent research is creating demands that can only be tackled through more sustainable institutional forms.... At least in my immediate environment, I do not see such forms emerge. (Rieder, 2018)

Researchers acting on such frustration might leave the field altogether, or focus on digital platforms and user practices where data access remains considerably more straightforward; historically, such differences in data access have already facilitated the considerably more advanced development of scholarship on *Twitter* in comparison to *Facebook*. As *Twitter* data access is now similarly curtailed, scholars may move on to studying platforms like *Reddit* or *Wikipedia*, where full datasets of public user activity remain readily available. But while further research into those platforms is welcome, because of their widespread take-up *Twitter* and especially *Facebook* remain the most critical social media spaces at the present moments, and newer platforms such as *WhatsApp* are rapidly becoming more important – research that focusses only on the 'easy data' (Burgess & Bruns, 2015) of more obscure spaces while ignoring these mass platforms must be seen as insufficient. In the absence of other meaningful scrutiny of these spaces, to give up on *Facebook*, *Twitter*, and other platforms is to leave their users to fend for themselves; it also prevents scholars from providing policymakers and regulators with the independent advice that they need so urgently as they seek to address social media's dysfunctions. After all, it is unlikely that the perpetrators of abuse and hate speech, the trolls, the bots, and the domestic and foreign operators of influence campaigns are similarly going to walk away from these platforms.

Lobby for change

If giving up is not an option, then, a second approach is to keep pushing for different and better data access frameworks for scholarly research. The open letters to *Facebook* and other platform providers by the Internet research community and affiliated research, journalistic, and technology foundations (Bruns, 2018; Knight First Amendment Institute, 2018; Mozilla, 2019a, 2019b), and the media coverage they have generated, are one step in this. Such calls are naturally aligned with the emerging field of critical digital studies, which investigates centrally the political economy of these platforms (Poletti & Gray, 2019). More recently, additional calls for intervention have also been made from outside of the scholarly community: as noted, in an op-ed in the *New York Times*, *Facebook* co-founder Chris Hughes has called for the break-up of the corporation (Hughes, 2019). But such calls also demonstrate the limitations of public advocacy: *Facebook* has the

corporate resources and political power to fight such unwanted interference, and its employment of Definers, as a public relations company linked with alt-right disinformation campaigns, provides a troubling indication of how it intends to respond to calls to exercise corporate social responsibility.

Importantly, the platforms' creation of alternative data access frameworks, from the intransparent and unaccountable paradigm of Social Science One to the data lottery of the *Twitter* Health Metrics, cannot be regarded as sufficiently addressing calls for better scholarly data access: on current evidence, they are constructed primarily to generate positive publicity for the companies, and – if they do so at all – provide access to data only for a vanishingly small minority of research projects that are carefully and explicitly selected to be 'orthogonal' to the platform's corporate interests. As one open letter from the scholarly community has argued, genuinely meaningful data access for scholarly research would be best provided through a separate research API that is transparently accessible to all scholars at tertiary institutions whose work has received appropriate ethics clearance (Bruns, 2018), *without* further powers of veto for the platform providers themselves, or for their partners in initiatives such as Social Science One.

It seems evident from their track record to date that the major platforms are unlikely to offer such research-specific API access on their own initiative; scholarly lobbying efforts on this matter must therefore be redirected from the platforms themselves to the policymakers and regulators that could force the platforms' hands. Sadly, however, the political will to compel the platforms to enable better independent scrutiny by scholarly researchers acting in the public interest is poorly developed to date: in spite of genuine, bipartisan frustration with the platforms' response to revelations about the role of nefarious influence operations in affecting the outcomes of the Brexit referendum, the 2016 US presidential elections, and other political processes, various calculations about how action against the platforms might affect the next elections have quickly kicked in and prevented effective regulation.

Further, the sheer commercial and thus political power of the platforms as multi-billion-dollar transnational industry leaders has meant that most national parliaments and governments can only exercise distinctly limited leverage over them. Congress might be best able to introduce effective regulation, given the key companies' US heritage, but the terminal dysfunction of the American political system makes this exceptionally unlikely for the foreseeable future; the EU Parliament might have the greatest domain knowledge and political will to act, yet has little actual leverage over the platforms. A concerted effort between both may have the best chance of generating real change, but is unlikely as the current US administration continues to undermine the country's status as a trustworthy partner. Recent national and transnational regulatory initiatives, including the European Union's General Data Protection Regulation (GDPR) or the US\$5 billion fine expected to be imposed on *Facebook* by the US Federal Trade Commission (FTC) for the platform's handling of user data (Overly & Scola, 2019), do indicate a growing preparedness by regulators to take on the social media platforms – but as yet these have not substantively addressed the need to support critical, independent, public-interest scholarly inquiry.

Accommodate and acquiesce

In the absence of, and with no hope for, meaningful changes to data access regimes any time soon, then, a third option for researchers is to take a pragmatic approach and find

ways to work within the *Realpolitik* of social media data access in the post-Cambridge Analytica era. This means maximising what data can still be gathered through the increasingly crippled public APIs offered by the platforms, applying for elevated access through Social Science One and/or the platforms' various data lotteries, and even – where sufficient funding is available – buying additional data from commercial data services, and thus finding ways of still doing meaningful scholarly work by drawing on a combination of these disparate, incomplete, imperfect datasets.

However, this approach is likely to be frustrated on the one hand by that very disparity: public APIs are increasingly limited in what they provide; new data access frameworks offered by the platforms and their partners are often centred on very specific, tightly circumscribed research topics; and commercial data services tend to focus only on comparatively simplistic market research questions. As we have seen, some of the commercial data services are also themselves negatively affected by the new data access regimes: like *Texifter* or *Crimson Hexagon*, they have themselves seen their data streams permanently or at least temporarily suspended.

The increased cost and complexity of working with such disparate sources, especially as compared to previous widely used open-source tools like *TCAT* or *Netvizz*, is also likely to require researchers to work more often in large-scale consortia that are able to share the financial and operational load of data acquisition, processing, and analysis. In addition to overall organisational challenges, this also places them in uncertain territory with respect to the platforms' terms of service, which frequently include prohibitions against data sharing (Weller & Kinder-Kurlanda, 2015). While platforms have generally refrained from prosecuting data sharing *within* institutional research teams, it has yet to be tested whether they would condone data on-sharing *across* a multi-institutional consortium of researchers.

Indeed, a further step beyond the formation of such consortia would be the establishment of formal data repositories, mirroring similar efforts that have proven critical to major fields of research such as genomics or climate science (Weller & Kinder-Kurlanda, 2016). There as well as here, such repositories are especially critical to longitudinal and comparative research efforts and also enable the more rigorous replication and verification of research results; in other fields of science, they are operated by trusted, independent institutions and are governed by strict access rules that protect the privacy and integrity of the data while facilitating further research. In the field of social media, however, they are likely to be in explicit violation of platform rules; *Twitter's* forced closure of *Twapper-Keeper.com*, the only major attempt to build a public repository for *Twitter* archives in a standardised format, as early as 2011 (O'Brien, 2011) created a chilling effect that has discouraged follow-up attempts to this day.

Break the rules

Finally, however, the very immutability of the platforms' terms of service, combined with the mounting evidence of their failure to act in good faith not only in their dealings with scholars, but indeed also with their overall userbase as such, is now also emboldening a growing chorus of voices in the scholarly community and beyond that are placing public over platform interest and are advocating the deliberate breach of platform rules (cf. Freelon, 2018; Rogers, 2018; Venturini & Rogers, 2019). On the one hand, a purely legal

argument may be mounted that in some circumstances the benefits to society from breaching the terms of service outweigh the detriments to the platform itself, or to specific users; a case currently before US courts tests this in a very specific context (Sandvig, 2017). On the other hand, this is also the legal expression of a much broader moral argument that points to the need for independent, critical, public-interest scrutiny of social media spaces that are now critical to public communication across many societies. The latter argument even points to the freedom of research as a recognised human right (United Nations, 1976) that supersedes the commercial interests of the platform providers.

In the absence of better API access, researchers pursuing this argument therefore also argue for data acquisition from the platforms through explicitly unsanctioned means. The leader of the University of Amsterdam's Digital Methods Initiative, Richard Rogers, has hinted at the need for a return to Web scraping, for example (Rogers, 2018), and a growing number of practical tools for scraping data from *Facebook*, *Twitter*, and other platforms are now becoming available. As many of its proponents readily admit, this approach is inherently problematic (see e.g., van Schie, Westra, & Schäfer, 2017): in addition to its dubious legal status, it is ethically questionable as – for a platform like *Facebook* – it would require researchers to create a 'fake' account and simulate that account's login to and browsing of the platform in order to scrape the content it encounters; this might thus also include simulated interactions with, and therefore the explicit deception of, genuine users. From a practical perspective, too, scraping poses challenges: since platforms like *Facebook* shape the content seen by users based on what their algorithms appear to know about the users' interests, the content scraped from the platform will be affected by how it understands the 'fake' user created by the researchers, rather than the perhaps more neutral content selection provided by an API.

Further, increased attempts by scholars to scrape data from social media platforms, if detected by the platforms, are also likely to kickstart an unsustainable arms race of scraping tools and countermeasures between researchers and platform providers, as *Facebook*'s efforts to frustrate *ProPublica*'s ad scraper plugin have already shown (Merrill & Tobin, 2019). Platforms might develop better means of detecting and banning 'fake' accounts, or of obfuscating the HTML structure of their pages, requiring researchers to constantly adjust their scraping strategies – this makes scraping-based approaches precarious and unreliable especially for larger-scale and longer-term projects. Scraping is also useful mainly for platforms that are accessed through Web-based interfaces – it would be considerably more difficult to scrape the content encountered within proprietary apps on mobile devices. Given the considerably asymmetrical distribution of resources and control over platform affordances between providers and scholars, it is therefore difficult to see this as a race that can possibly be won by researchers, even if the legal, moral, and ethical justifications for entering into it can be found.

Conclusion: *ceterum censeo*

In the immediate future, it is likely that we will continue to see researchers proceeding down all four of these possible paths, often at the same time. Already, key scholars and scholarly support services have withdrawn from the field, as we have seen; at the same time, other researchers have also engaged in increased public advocacy, with little measurable success to date; they have explored available commercial data access services and

alternative data grants; and they have stepped up their efforts to develop the next generation of data scraping tools. Such exploration and experimentation in response to the ‘APIcalypse’ is welcome in principle and demonstrates the overall resilience of the field of social media research, but these immediate tactical responses to the disruption wrought by the Cambridge Analytica scandal and the platforms’ instrumentalisation of it have yet to translate into a sustainable longer-term strategy for the field.

As noted throughout this article, it is unlikely that social media scholars alone are able to facilitate the circumstances under which such a strategy can emerge; this effort must also involve other key stakeholders including research institutions, policymakers, and the platform providers themselves. Critically, as Rieder (2018: n.p.) has noted, ‘if any successful resistance to these developments can be mobilized, it will require substantial support from organizations capable of investing resources that may not lead to immediate deliverables or quantifiable publications’ – this includes universities themselves, national research councils, and charitable foundations providing research funding.

It is crucial in this context to keep up the pressure on policymakers and platform providers, too. As scholars, we must highlight the deleterious consequences of current API access regimes for independent, critical, public-interest research at any opportunity, in order to maintain and increase public awareness of how poorly the platforms have responded to challenges ranging from abuse and hate speech to the deliberate dissemination of disinformation so far, and in order to forcefully counteract their FUD campaigns. Indeed, we might do well to learn from a classical example here: in his relentless campaign to commence a Third Punic War between Rome and Carthage, Roman Senator Cato the Elder concluded all of his speeches, independent of their substantive topic, with the phrase ‘*ceterum censeo Carthaginem esse delendam*’: ‘furthermore, I propose that Carthage is to be destroyed’. Today, social media researchers might similarly need to take to concluding their articles, papers, and presentations with a consistent call to action, such as the following:

Furthermore, we demand that social media platforms provide transparent data access to critical, independent, public-interest research.

It is important to emphasise, however, that we do so not simply because we have become dependent on ‘big social data’ for our research, or out of self-interest in furthering our own careers. Rather, it is now obvious that social media have become critical to many of the most pressing challenges for societies around the world: they are implicated, for example, in the disruption of democratic processes by deliberate disinformation campaigns; in the growing polarisation of public debate; and in the re-emergence of naked fascism even within the most powerful democratic nation in the world. Therefore, Bernhard Rieder is typically understated when he points out that ‘the idea that independent research of a 2+ billion user platform just got a lot harder should make us at least a little uneasy’ (2018: n.p.) – in reality, we should be profoundly concerned about being locked out of studying in detail what happens on social media platforms at this critical point in world history, and we must hold to account those who have locked us out, and expose their reasons for doing so.

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