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Scraping the demos. Digitalization, web scraping and the democratic project

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ABSTRACT

Scientific, political and bureaucratic elites use epistemic practices like “big data analysis” and “web scraping” to create representations of the citizenry and to legitimize policymaking. I develop the concept of “demos scraping” for these practices of gaining information about citizens (the “demos”) through automated analysis of digital trace data which are re-purposed for political means. This article critically engages with the discourse advocating demos scraping and provides a conceptual analysis of its democratic implications. It engages with the promise of demos scraping advocates to reduce the gap between political elites and citizens and highlights how demos scraping is presented as a superior form of accessing the “will of the people” and to increase democratic legitimacy. This leads me to critically discuss the implications of demos scraping for political representation and participation. In its current form, demos scraping is technocratic and de-politicizing; and the larger political and economic context in which it takes place makes it unlikely that it will reduce the gap between elites and citizens. From the analytic perspective of a post-democratic turn, demos scraping is an attempt of late modern and digitalized societies to address the democratic paradox of increasing citizen expectations coupled with a deep legitimation crisis.

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1. Introduction

The current debate about a crisis of modern representative democracy is in part due to the failures of democratic systems to connect citizens and political elites and to orient politics on the “will of the people”¹ which is admittedly elusive. In traditional interpretations of modern liberal democracies, responsiveness is regarded as a central parameter of democratic quality. According to Hanna Pitkin, it is one of the two elements that compose representation. The second is political leadership: to judge and act for the common good.² Democracies must find a good balance between responsiveness and political leadership,³ but fail in many ways: Due to the plurality of modern societies, representatives cannot fulfil the wishes of all citizens and social groups. With increasing political participation

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this can lead to what King termed “government overload”, the failure to process, let alone meet citizens’ demands.⁴ In addition, orienting policymaking too closely on public opinion makes it difficult to implement policies that are not popular, but that have desirable long-term effects or that temporarily settle social conflicts. However, political leadership without responsiveness leads to selfish and exploitative elite behaviour and citizen disillusionment. All of these flaws have been diagnosed in recent accounts of post-democracy⁵ and democratic disfigurements:⁶ Liberal representative democracies suffer from decreasing and unequally distributed political participation, cleavages between political elites and citizens,⁷ and ineffective policies. These diagnoses add up to a deep legitimation crisis of modern representative democracies and a multiplication of legitimation strategies.⁸ Several trends drive post-democratic developments, most importantly economic globalization and neoliberal hegemony that move distributional conflicts to ever more distant and abstract fields of action, where citizen engagement is extremely difficult.⁹ In the political realm, post-democratic tendencies are fuelled by elitist interpretations of democracy. Refusing to meet the demands of postwar societies,¹⁰ political and economic elites nurture a “hatred of democracy” and conflate the political with the domain of administration (see the contribution by Blühdorn to this Special Issue). Against the backdrop of these various malfunctions of representative democracies, it seems only natural that many hopes have been attached to the digitalization of societies to solve the “democratic paradox” which consists in the tension between increasing citizen expectations about political representation and participation and the legitimation crisis of democratic institutions (see introduction by Blühdorn and Butzlaff to this Special Issue). Digital tools have been developed to improve political participation by lowering entry barriers (such as geographic distance) and attracting new populations (for example via gamification). The digitally mediated opportunities for citizen participation range from feedback channels, online discussion forums,¹¹ and social media information¹² to online elections¹³ and legislative crowdsourcing.¹⁴

While several studies have explored the participatory effects of these online tools, academics have devoted little interest to the political epistemologies of digitalized societies and their implications for the democratic project. Political epistemologies are practices by which societies construct – and criteria by which they evaluate – politically relevant knowledge. Practices such as “big data analysis”, “web scraping”, “opinion mining”, “sentiment analysis”, “predictive analytics”, and “nowcasting”¹⁵ have successfully established themselves as an element of state regulation.¹⁶ Emerging research strands that use these tools such as “computational social sciences”, “social physics”, “policy analytics”, and “policy informatics”¹⁷ strive for better evidence, more transparency and responsiveness in policymaking; and governments such as in the UK, or, as in Australia, have set up strategies of “open policymaking”, “agile policymaking”¹⁸ and “public service big data”.¹⁹ Despite their diverse terminology, I argue that these practices have common elements that call for an overarching concept that also serves as a starting point for a critical analysis of these practices. I therefore propose the concept of “demos scraping”²⁰ – combining the term “web scraping” with the Greek word for citizenry: “demos”. Demos scraping encompasses the practices of gaining information about citizens through automated analysis of digital trace data which are re-purposed for political means. The concept of trace data implies that the data creation is the surplus of another activity. The notion of “scraping” in addition evokes the idea of repurposing: data are used to generate value in an unexpected way – it also implies a critical stance, implying that these epistemic practices scrape the *surface* instead of getting a *deep*

understanding of their object which is in line with accounts of the “messiness” of web scraping.²¹ The concept of demos scraping however does not contain in itself an assessment of democratic quality. It is the aim of this article to provide such an assessment.

Political elites use numerous epistemic practices to assess and construct societal demands on which they orient their actions. This includes social science research and various forms of political participation and representation. Political elites will attribute different value to what they conceive of as “the will of the people”,²² depending on whether representatives act as *delegates* who adhere closely to the mandates of those represented or whether they assume the role of *trustees* who act independently of their voters for the sake of the common good. But no matter how sophisticated the epistemic practice – the will of the people is highly political, always ambiguous, elusive and controversial.²³ The implications of demos scraping for political responsiveness have yet to be examined. It is therefore time to question the discourse and practice of political, economic and scientific elites who advocate digital technologies as better tools for learning about the citizenry and increasing political responsiveness.

The literature about the phenomena grouped under the concept of demos scraping in this article largely comprises uncritical studies using computational social sciences. Their aim is to gain insights into social dynamics such as public opinion, social inequality or markets by making use of digital trace data.²⁴ There are however a few studies that are critical towards demos scraping. Yet, they either treat practices related to digital data on a rather abstract level, without considering the specific political epistemologies,²⁵ or they scrutinize specific practices, but neglect their relationship with practices in other areas that have the same epistemology.²⁶ In addition, several scholars have dissected the epistemologies of big data,²⁷ yet they do not address their political dimension in detail. Most of these critical studies point out how data analysis in the digital age poses threats to specific freedoms and rights, such as privacy, accountability, transparency, and freedom from manipulation.²⁸ However, none of them provides an overall assessment of the implications of demos scraping for core democratic concepts. As a consequence, this article sets out to fill two gaps – firstly it assembles various related epistemic practices under the concept of demos scraping, choosing a middle ground between exceedingly general descriptions and overly specific case studies. The second contribution of this article is to reflect upon demos scraping with regard to the democratic concepts of responsiveness, representation and participation.

I start with the perspective of the advocates who propose demos scraping as a valuable epistemic practice for democratic policymaking, outlining the (stated) promises and limitations. In the following section I draw from democratic theory and highlight the implications of demos scraping, characterized by a tension between responsive and technocratic politics. This section sheds light on the relationship between demos scraping and political representation, between demos scraping and political participation, and reflects upon the wider social, economic and political context within which demos scraping takes place. The final section discusses how the findings can be interpreted from the perspective of a post-democratic turn.

2. The political epistemology of demos scraping: promises and limitations

As the literature about politically motivated computational social sciences shows, digital trace data are often claimed to provide valuable insights into the citizenry. Policy

analysis, policy consulting and data-driven businesses claim that demos scraping renders a complete and accurate representation of the social and therefore generates a superior form of evidence for political representation. They argue that, despite its multiple biases, it is a way of knowing the demos that surpasses the insights gained from traditional disciplinary data about citizens, such as administrative data and censuses.²⁹

Data available on the Internet and in social networks have been deployed in various areas in order to gain insights into populations. An especially abundant field is the prediction of election results on the basis of social media-based sentiment analysis³⁰ and micro-targeting in campaigning,³¹ a strategy to address voters and supporters using modern marketing tools including big data. The police use sentiment analysis to assess levels of aggression during demonstrations or reputational risk for the police.³² Data mining in the darknet has been used to unveil terrorist clusters.³³ Web scraping and search engine data are deployed to predict the spread of diseases,³⁴ map well-being,³⁵ map physical and mental health,³⁶ predict user behaviour, and forecast consumption.³⁷ Another aim is to gather information about populations that are difficult to monitor and about regions that are poorly reported,³⁸ for instance in developing countries or in cases of military conflict. This information is used for prioritizing and targeting development aid and other interventions.³⁹ For example, the “Syria Conflict Mapping Project” uses web scraping to create a continuous estimate of relations between conflicting groups, flows of people and weapons, which is made public and used for policymaking.⁴⁰

The main promise of demos scraping is that new data yield unprecedented insights into populations for policy makers; it enables “community assessment”,⁴¹ and taking the “pulse of the nation”.⁴² An OECD report states that “torrents of data streaming across public and private networks can improve the quality of statistics in an era of declining responses to national surveys, and can create close to real-time evidence for policymaking”.⁴³ In times of societal fragmentation and complexity, demos scraping is said to be scoring with precision, breadth and timeliness:

Data from increasingly popular online social media allow social scientists to study individual behavior in real-time in a way that is both *fine-grained and massively global in scale*, making it possible to obtain *precise real-time measurements* across large and diverse populations.⁴⁴ [italics added by the author]

Demos scraping is treated as a new form of “collective wisdom (...) to provide a more objective, unbiased and at times ‘more complete’ and professional information than any expert could ever do alone”.⁴⁵ In this vein, the American National Science Foundation has put forward a strategy to create “social observatories” to “provide a nearly *continuous snapshot* of the country, *rapidly* depicting how national policies affect local people and places”.⁴⁶ [italics added by the author].

The vision of demos scraping proponents is that this improved knowledge of the demos will be beneficial for regulation. It can be used to identify effective strategies of behaviour modification, for example increase support for policies or for political parties. It can also serve as the basis of political programmes that claim to “hear more voices”,⁴⁷ to better serve the population by constantly evaluating and adapting regulatory instruments:⁴⁸ “Sentiment-based artefacts using publicly available data promise *unprecedented* access to the expectation of issues arising *ex-ante*, and the *totality* of effect of incidents *ex-post*, therefore, enabling researchers and decision makers to analyse, develop, implement and tune policies”.⁴⁹ [italics added by the author]. “Early

warning systems”, “real-time feedback”, and “adaptive policymaking” are the pillars of government that pursues a “model of service delivery where choices (...) are underpinned by data intelligence on users and their (current and future) needs”.⁵⁰

In line with the ideal of effective policies is the idea that demos scraping will render policymaking more responsive. As the Center for Policy Informatics at Arizona State University puts it:

In an information-intensive governance environment, advancements in information, computation, and communication technology afford us the possibility to *better tackle* complex public issues in new and innovative ways that tap into and *reflect the reality of this world*. In particular, this involves (...) *engaging, educating, and empowering* public officials, future researchers, and the *public-at-large*.⁵¹ [italics added by the author]

Many texts claim the superiority of demos scraping over the traditional methodologies hitherto applied: Demos scraping is depicted as more precise because it comprises more detail (more “data points”) on individuals; it is seen as more complete because it encompasses more individuals, covers all aspects of life and can be executed at frequent intervals (“real-time analysis”).⁵² As the authors of a health study argue,

[t]raditional approaches for collecting psychosocial data from large representative samples (...) tend to be *expensive*, are based on *only* thousands of people, and are often *limited* to a minimal, predefined list of psychological constructs. A Twitter-based system to track psychosocial variables is relatively *inexpensive* and can potentially generate estimates based on *10s of millions of people* with *much higher resolution* in time and space.⁵³ [italics added by the author]

In addition, demos scraping is said to be more valid as it observes *behaviour* instead of relying on *verbal expressions* and because online expressions are not biased by a survey situation.⁵⁴

traditional surveys pose solicited questions, and it is well known that this approach might inflate the share of strategic answers (...). Conversely, SA [sentiment analysis] does not utilize questionnaires and focuses only on listening to the stream of unsolicited opinions freely expressed on the Internet.⁵⁵

Finally, demos scraping is portrayed as cheaper and less intrusive than surveys.⁵⁶ In sum, the promise of demos scraping is to find a solution for the hitherto unsurmountable challenge of effectively representing a plural society.⁵⁷

Despite the proclaimed superiority of demos scraping, scholars in critical data studies have pointed out that big data analysis is prone to create biases.⁵⁸ A central problem is the “digital divide”, meaning that unequal access to information technologies and unequal use habits lead to biased data samples where certain populations are over-represented and others are digitally invisible.⁵⁹ For example, scholars studying risks for atherosclerotic heart disease (AHD) on the basis of twitter data concede: “Given that the typical Twitter user is younger (...) than the typical person at risk for AHD, it is not obvious why Twitter language should track heart-disease mortality. The people tweeting are not the people dying”.⁶⁰ Another limitation is that many tools relying on natural language processing are designed for English language and therefore lead to biased results in global comparisons and to culturally disembedded interpretations. What is more, these tools frequently reduce observations to overly simplistic categories (positive and negative). Another challenge is to detect irony, sarcasm, and internet bots. A general problem of demos scraping is the lack of knowledge about the context in which the data was produced – one of the major differences between

demos scraping and traditional social science data and methods. For instance, expressions in social networks might not be a mere reflection of an emotional status or (political) preference, but be of a more strategic nature with the intention of attracting a maximum of reactions.⁶¹ In sum, sentiment analysis for public policy often relies on some kind of repurposing of behavioural data that were not produced in a political context which limits its validity and legitimacy. Despite these shortcomings, many authors applying demos scraping are confident about the superiority of their methodology over others. The first reason is that the sheer amount of data and the resulting significance of coefficients lead authors to discard doubts about the validity of their results,⁶² especially compared to other methodologies that are perceived as even less accurate. A second reason to discard worries about possible bias is happy optimism that social media use will increase with time and automatically diminish possible bias.⁶³ Having presented the potential and limitations of demos scraping, I now turn in more detail to its democratic implications.

3. Demos scraping as a democratic practice: responsive or technocratic?

In search of the democratic implications of demos scraping, I first discuss the relationship between demos scraping and political representation before taking a closer look at demos scraping and political participation.

Demos scraping becomes a democratic practice where it claims to generate superior truth and to be of use in policymaking. The examples of demos scraping cited in this article make it clear that scientific, economic, political and bureaucratic elites make representative claims⁶⁴ about populations on the basis of these practices. Demos scraping promises to increase the input-legitimacy of politics by “hearing more voices” and the output-legitimacy by yielding “better policies”. But representation through demos scraping is problematic because the picture it conveys is flawed in many ways. In addition to social bias, the focus on digital trace data leads to a construction of citizens as consumers and with a passive role (see also the contribution by Maxton-Lee in this Special Issue).

These observations stand in contrast to the responsiveness narrative, which states that, theoretically, data mining provides societies with an instrument that strengthens the role of representatives as delegates. But looking at the current practices of demos scraping cited above, it is fair to say that it is a one-sided adaptation of political elites to the population. Demos scraping turns out to be a practice deeply rooted in a technocratic interpretation of democracy that relies on two assumptions: first, that citizens have exogenous interests and preferences that can be measured through digital trace data; and second, that public policy consists in serving these interests and preferences. But to fulfil every wish of citizens deprives them of opportunities to act as citizens and develop wishes in the first place. What a technocratic interpretation of democracy also overlooks is that politics is not only the act of choosing an economic, sustainable or popular solution to a solvable problem. Politics also consists in constant practices of conflict, negotiation, and re-interpretation. One of the core elements of democracy is to make political disputes visible; another is its nature as an unfinished project.⁶⁵ Demos scraping in its present form is in line with what Urbinati calls “unpolitical democracy” and that relies on two trends: to extend the domains in which nonpartisan decisions are made and to legitimize “democratic authority by the quality of its outcomes”.⁶⁶ Scholars who study the specificities of technology-driven behavioural steering

have pointed out that to rely upon data analysis often means to replace other forms of regulation or governance that are more open to participation and deliberation.⁶⁷ Concretely,

legitimacy concerns in the data mining context seem (...) to revolve mostly around the validity and scalability of results (...). There seems no comparable imperative in data mining governance to ask the sorts of early stage 'who' or 'in whose interest' questions that are routinely asked in conventional governance practice, at least in democratic settings.⁶⁸

Demos scraping is not only in the process of establishing itself as a “tool of government”⁶⁹ and as a representation technology; it equally has implications for political participation – by altering the ecosystem in which participation takes place. This change is rather subtle than radical: As of now, demos scraping is still one among many tools that governments (and companies) use to “know” populations and their constituency. Scholars have been conducting censuses, surveys, focus groups, interviews, and on-site observations for centuries; citizens and organizations engage in political participation, bureaucrats and politicians experience citizen opinion in direct and indirect communication.⁷⁰ All these scientific, lay and professional methods of knowing the demos – not only demos scraping – are prone to interpretation and ambiguous results. But, as we have seen, many of the proponents of demos scraping stress their methodology’s superiority with a determination that expresses an intention to make it the primary evidence base for policymaking. Other forms of social science and political participation become irrelevant in such a perspective, as law professor Richard T. Ford ironically suggests:

In fact, why not dispense with cumbersome voting altogether? A computer simulation of the preferences of all citizens could compile the Pareto Superior outcome for any given collective decision – we would be virtually represented (...). Think of the benefits – no money in politics problems, no deceptive ads, no graft and corruption. Best of all, no time wasted studying the issues, and yet we still get better substantive representation than any possible system of actual representation.⁷¹

This scenario is exaggerated, but if proponents of data mining see online behaviour as an expression of political preferences and intentions, they radically re-interpret political participation. They lose sight of the fact that, in many cases, the observed behaviour was not intended to be decidedly political. In fact, intentionality is a component of traditional definitions of political participation – defined in a broad sense as “all amateurish, *voluntary* activities located in the sphere of politics”⁷² [italics added by the author]. As demos scraping does not rely upon data that was given with explicit consent for a political purpose, it is by definition not a form of political participation. Participation is not just a channel that passes information from citizens to political elites. The process of participation is performative, it creates roles, identities, knowledge, interests, and needs.⁷³ Different practices of participation entail differing conceptions of citizenship: ⁷⁴ “some may construct people as protesters, whereas other practices may create collaborators”.⁷⁵ Demos scraping constructs passive citizens who are unconscious of their role.

As a consequence, data mining has provoked a struggle about what behaviour can be regarded as politically intended and how acceptable it is to evaluate it for political purposes.⁷⁶ Some cases seem easy to label: to like a musician on Facebook is in most cases not a political statement; to like a political party most likely is. But can this “like” be interpreted as an intended public statement? Is it more similar to shouting a slogan at a street protest or does it resemble the more private political discussion at a birthday

party? The answer to this question depends on how we qualify social media and platforms: as public, as private, or as semi-public spaces.⁷⁷ In addition, the line between politically intended and politically unintended behaviour is difficult to draw, for example when it comes to consumption or cultural preferences: It is unclear whether there is political intention in purchasing fair trade products (see the contribution by Maxton-Lee in this Special Issue) or in recommending a book of an author with strong political views.

Whether demos scraping practices rightly claim to observe *political* behaviour or not, Richard T. Ford's dystopic vision is not entirely unrealistic. In its current technocratic version, demos scraping can devalue settings in which citizens have an opportunity to participate actively and knowingly in politics. Traditionally, contracts between citizens and elected officials have been made every 4–6 years, in the form of elections or referenda, and representatives have been (partly) bound by party manifestos and election promises. Demos scraping might in turn lead to hyper-reactive policymaking, where sentiment change leads to frequent policy shifts without a change of the electoral mandate. Even if with Urbinati, we see representation not as a single act of nomination, but as a constant communicative relationship between representatives and represented (“representation as *durée*”),⁷⁸ hyper-responsiveness is an unsettling prospect in times of eroding political ideologies and decreasing party affiliation among voters. It might be a danger to political trust, stable politics, and sustainable policies.

When placing it in a wider context of technological and democratic trends, it seems unlikely that demos scraping will soon become more reflexive, increase political responsiveness or even foster political participation. Several factors reinforce the current tendency towards a technocratic interpretation of technological innovation.

One is that in modern representative democracies, citizens are increasingly addressed as consumers.⁷⁹ The fact that most of the data used in demos scraping stems from consumers and not from consciously acting citizens means that there is little hope that the data might indicate an increasing desire for political influence, which in theory could prompt political elites to open additional venues for political participation. This trend goes hand in hand with the rise of “surveillance capitalism”,⁸⁰ an economic system that relies on the datafication of societies. Surveillance capitalism decouples large technology companies from social responsibility and leaves consumers and citizens at the mercy of the companies that thrive on their data and nudge them into consumerism with increasingly sophisticated instruments informed by behavioural research. From an ideological perspective, this reduction of citizens to consumers is underpinned by the discourse about user convenience, the “user experience”. Consumers are declared to be suffering from a “privacy paradox” because they express concern about privacy, but consent to any kind of data collection for the sake of digitally created convenience. To proclaim the post-privacy society, however, neglects the unequal power relations between consumers and companies and the dominance of hegemonic platforms such as Facebook, Amazon, and Google. The monopolistic structures of technology markets weaken individual rights and national regulation, and to broaden digital access only stabilizes this hegemony. It also means to channel communication into private platforms, to standardize it, and to neglect cultural, social and political differences.

An additional contextual factor that dampens hopes to do demos scraping in a more empowering way is the limited success of initiatives to integrate citizens into “civic tech”

projects. While civic tech projects are fuelled by the hope that citizens will scrutinize and improve data and algorithms once they can access them,⁸¹ the intended citizen participation is often very limited: the projects focus on citizens endowed with advanced technological skills, inclination and time. Some projects also include “ordinary” citizens, but their role is mainly confined to pointing out policy problems or to providing data. The other elements of civic tech projects remain in the hands of experts: data modelling, data analysis, interpretation of results, policy choice and policy design. In addition, the “newly empowered citizen data scientists”⁸² are mostly overburdened with the task of controlling and improving public policy. They lack time, technical skills, information access, power, and other resources to hold governments and large technology companies accountable. Therefore, civic tech initiatives are sometimes, but not always, more a matter of activation than empowerment (see also the introduction to this Special Issue by Blühdorn and Butzlaff). To simply open up demos scraping to citizen scrutiny is therefore not a solution, as detached forms of participation that construct citizens as “independent viewers or evaluators” of formal democratic institutions and procedures, lead to democratic “apathy”, which is the “drying up of passionate involvement”, as Urbinati criticizes.⁸³

Another important trend that underpins the technocratic interpretation of demos scraping is the individualization of risks and responsibilities that comes with the neo-liberal transformation of welfare states and the externalization of the costs caused by big corporations. Digital technologies enable the surveillance, scoring and stratification of populations down to the individual. Companies and governments assign scores to citizens and base regulation on these scores, morally legitimizing these strategies.⁸⁴ “Individualized”, “tailored”, “targeted”, “granular” policies threaten individual autonomy and the equal treatment of citizens in a way that in its scope is new to modern societies.

Similar strategies are especially unsettling when deployed by political parties: the diffusion of micro-targeting, sentiment analysis and, behaviourally informed interventions indicate a shift in perspective (see the contribution by Strassheim in this Special Issue).⁸⁵ Instead of drawing their social relevance and power from ideologically anchored thematic orientations and their internal democratic structures, parties increasingly adopt their communication and strategy to digitally measured preferences of the individual, which seem to be constantly changing. Hyper-reactivity has spread from online sales to political parties and thrives against the backdrop of declining political ideologies.⁸⁶ Borrowing from the “spell of quantification”⁸⁷ and its aura of objectivity and unambiguity, demos scraping introduces market values, which often stand against the interests of the governed, into the realm of the political.

4. Conclusion

This contribution develops the concept of demos scraping and provides an assessment of its democratic implications. By providing a new interpretation of the debate about the promises and limitations of digital technologies for democratic concepts such as representation and participation, it also adds to the research about the re-interpretations of democratic institutions in late modern, digitalized, fragmented, and polarized societies.⁸⁸ Demos scraping is meanwhile both a practice and a motivated discourse entertained by researchers, policy consultants, bureaucrats, politicians, technology companies and data-driven businesses.

The analysis has yielded three main observations. First, that demos scraping is promoted by its proponents as a new and better tool for knowing the citizenry, to meet citizens' expectations and to provide political legitimacy – despite many shortcomings. Second, due to its claim to provide a privileged access to “the will of the people” and to its current technocratic interpretation, demos scraping has far-reaching implications for political representation and participation: it strengthens the role of representatives as trustees and is a danger to many forms of political participation. Furthermore and as a result to many biases, it cannot contribute to the legitimation of democratic practices; neither with regard to input, as it fails to “hear more voices”, nor with regard to output legitimacy, as it does not yield “better policies”. Third, the larger political, economic and social context in which demos scraping takes place makes it unlikely that it will reduce the post-democratic gap between elites and citizens in the future, quite to the contrary. The contemporary model of “monitory democracy”⁸⁹ heavily depends upon external control and oversight of government – but as of now, digital data do not (yet) help to hold governments accountable and there is furthermore little to no control of large technology companies, creating vast possibilities for the abuse of citizen data by companies and governments.

Quite to the contrary, in the guise of digitally enhanced democratization, a turn towards technocratic take-over and depoliticization is happening. Demos scraping, in its present form, is a Trojan horse for technocratic surveillance capitalism and an aesthetically pleasing materialization of simulative democracy:⁹⁰ coloured maps, good predictors, highly significant correlations, worldwide coverage and real-time streams please the eye of proponents of evidence-based, seemingly responsive policymaking. Demos scraping does therefore not save political representation and participation; it produces their objectivation in times of digitally guaranteed user convenience and privacy paradoxes. From the perspective of a post-democratic turn, demos scraping is among the practices that remould democratic institutions in order to reflect a modernisation-induced value- and culture shift (see Introduction by Blühdorn to this Special Issue). Demos scraping re-defines representation and participation by challenging the concepts of the autonomous subject and the mature citizen and by replacing citizens with consumers and individuals with “data doubles”. Demos scraping is a way of late modern societies to embrace their complexity, dynamism and atomization and bake them into democratic institutions: they hope to solve the problem of representing plural and fragmented societies with the help of sophisticated computer analytics and powerful machines. However, trying to solve the democratic paradox by providing both, policy-legitimation and satisfaction to citizens' increasing expectations about representation and participation, is a dangerous endeavour: To endlessly increase the “data points” by which citizens are represented and to conceive of individuals as “choosing subjects”⁹¹ strengthens the centrifugal forces that threaten modern representative democracies by overly individualizing and differentiating them.⁹² In the act of proclaiming demos scraping as a central element for responsive politics, political, bureaucratic and scientific elites raise expectations about participation and empowerment that are already unrealizable. Political parties cannot react to citizen sentiment on a real-time basis, nor is hyper-reactive policymaking democratic progress. Demos scraping therefore inevitably fails to meet its aims, instead producing the contrary: citizen activation, technocratic politics and government overload.⁹³ However, a limitation of the paper is that it mainly focuses on discourse and not on practice. Decision makers might take the statements of those who promote demos scraping with a grain of

salt. Only few might confuse online and offline behaviour. But a discourse that makes illegitimate claims about the representativeness and participatory potential of demos scraping is in itself dangerous. In addition to the often criticized primacy of the economic over the political,⁹⁴ demos scraping is an example of how the (social) sciences, in the attempt to stay relevant, often uncritically adopt epistemic practices and norms from the private sector.

A ban of demos scraping is not necessary, but it should be handled with care. A recurrent claim in the debate about algorithms is to increase transparency. It is indeed important to disclose to consumers that their online data might be used for political purposes. While citizen-consumers may be overburdened with the task to criticize demos scraping, there are examples where statistical categories have been at the centre of democratic conflict and there have been attempts to criticize the epistemic practices underlying the “scoring society”.⁹⁵ Only if attempts to politicize demos scraping are successful, will we know whether citizens indeed appreciate or dispute having political parties and governments anticipate their every wish and legitimize political decisions based on their “data doubles”. Only then will we know whether demos scraping belongs to the consensual practices of the post-democratic turn.

We should, however beware of technological quick fixes to long-standing democratic deficits and democratic fatigue. Even though digital technologies facilitate political engagement at the transnational level,⁹⁶ they cannot save democracy. In a scenario where the whole population seems to be accessible via web scraping, unequal political participation and power relations should not be addressed merely on a methodological level. There is clearly no reason to assume that digital tools will solve any of the problems related to insufficient political participation, biased representation and imperfect responsiveness.

Notes

1. Pitkin, *The Concept of Representation*, 83.
2. *Ibid.*, 169, 193.
3. Sabl, “The Two Cultures of Democratic Theory”.
4. King, “Overload: Problems of Governing”.
5. Crouch, *Post-democracy*; Blühdorn and Butzlaff, “Rethinking Populism”.
6. Urbinati, *Democracy Disfigured*.
7. Crouch, *Post-democracy*.
8. Blühdorn, “The Legitimation Crisis of Democracy”.
9. As in transnational financial markets. Streeck, *Buying Time*.
10. *Ibid.*
11. Boulianne, “Social Media Use and Participation”; Jensen, “Political Participation Online”.
12. Placek, “#Democracy: Social Media Use”.
13. Cheeseman, Lynch, and Willis, “Digital Dilemmas”.
14. Brabham, *Crowdsourcing in the Public Sector*.
15. These terms have been defined in many different ways. They overlap; they can be combined and are sometimes used as synonyms. Although a discussion of each term would exceed the limitations of this article, it is important to note that each concept accentuates a different aspect of automated computer analysis for knowledge production: Big data have an emphasis on the variety and amount of data – for example where sensor data from smartphones and data from public transport agencies are combined to monitor citizen traffic. Web scraping has a focus on the extraction of unstructured web data for unforeseen purposes, as in cases where Facebook communication is analysed in order to unveil criminal networks. Sentiment analysis has a focus on the inference of user judgement or preference derived from online behaviour, for example when tweets are analysed to infer public opinion on public policy issues; opinion

- mining is used as a synonym for sentiment analysis, used mainly in marketing contexts. Predictive analytics places a focus on extrapolations and inferences to describe future developments, for example to predict crime hotspots. Nowcasting finally implies a reduction of time-lag in monitoring, enabling (near) real-time observations, for example of price indices.
16. Kitchin, *The Data Revolution*.
 17. To characterize each of them is beyond the scope of this article, as they overlap. What they share is the use of digital trace data for the analyses of social structures and processes.
 18. Government Digital Service, "Open Policy Making Toolkit".
 19. Australian Government, "Australian Public Service Big Data Strategy".
 20. This concept was first coined at an international conference "Scraping the demos. Political epistemologies of big data" organized by the Weizenbaum Institute for the Networked Society and the WZB Berlin Social Science Center in July 2019.
 21. Bonde Thylstrup, Flyverbom, and Helles, "Datafied Knowledge Production".
 22. Sabl, "The Two Cultures of Democratic Theory".
 23. Ibid.
 24. McKelvey and Piebiak, "Porting the Political Campaign"; Eichstaedt et al., "Psychological Language on Twitter"; Yazdani and Manovich, "Predicting Social Trends"; Chen, *Dark Web*; Ceron et al., "Every Tweet Counts?"; Frank et al., "Happiness and the Patterns of Life"; Schmidt, "Trending Now: Using Social Media"; Carrière-Swallow and Labbé, "Nowcasting with Google Trends".
 25. Taylor and Schroeder, "Is Bigger Better?"; Yeung, "Algorithmic Regulation"; Zuboff, *The Age of Surveillance Capitalism*.
 26. Dencik, Hintz, and Carey, "Prediction, Pre-emption and Limits", 7; Johns, "Data Mining as Global Governance", 13, 31; Christin, "Algorithms in Practice".
 27. Beer, *The Data Gaze*; Kitchin, "Big Data, New Epistemologies"; Rieder and Simon, "Datatrust".
 28. Dencik, Hintz, and Carey, "Prediction, Pre-emption and Limits", 7; Johns, "Data Mining as Global Governance", 13, 31; Christin, "Algorithms in Practice".
 29. Rose, "Governing by Numbers"; Hacking, "How Should We Do The History".
 30. Ceron et al., "Every Tweet Counts?"
 31. McKelvey and Piebiak, "Porting the Political Campaign"; Karpf, *Analytic Activism*; Tactical Tech, "Personal Data".
 32. Dencik, Hintz, and Carey, "Prediction, Pre-emption and Limits", 7.
 33. Chen, *Dark Web*.
 34. Schmidt, "Trending Now: Using Social Media".
 35. Yazdani and Manovich, "Predicting Social Trends".
 36. Eichstaedt et al., "Psychological Language on Twitter"; Frank et al., "Happiness and the Patterns of Life", 8.
 37. Carrière-Swallow and Labbé, "Nowcasting with Google Trends".
 38. Taylor and Schroeder, "Is Bigger Better?"
 39. Johns, "Data Mining as Global Governance", 13, 31.
 40. The Carter Center, "Syria Conflict Resolution".
 41. Caton, Hall, and Weinhardt, "How Do Politicians Use Facebook?" 1.
 42. Mislove et al., "Pulse of the Nation".
 43. OECD, *Data-Driven Innovation*, 410.
 44. Golder and Macy, "Diurnal and Seasonal Mood Vary", 1879.
 45. Pečarič, "Can a Group of People".
 46. American National Science Foundation, "Vision Statement for a National Network of Social Observatories".
 47. LeFebvre, "Leveraging the Voices of Social Media", 232.
 48. Ceron et al., "Every Tweet Counts?" 344.
 49. Caton, Hall, and Weinhardt, "How Do Politicians Use Facebook?" 1.
 50. Malomo and Sena, "Data Intelligence for Local Government?" 8.
 51. Arizona State University, "Center for Policy Informatics".
 52. Golder and Macy, "Diurnal and Seasonal Mood Vary", 1879; Ceron et al., "Every Tweet Counts?" 344.
 53. Eichstaedt et al., "Psychological Language on Twitter", 166.
 54. Caton, Hall, and Weinhardt, "How Do Politicians Use Facebook?" 1.

55. Ceron et al., “Every Tweet Counts?” 344.
56. Caton, Hall, and Weinhardt, “How Do Politicians Use Facebook?” 1; Ceron et al., “Every Tweet Counts?” 344.
57. Kennedy, “Knowledge and the Political”.
58. Salganik, *Bit by Bit*; Kitchin, “Big Data and Human Geography”; boyd and Crawford, “Critical Questions for Big Data”.
59. Longo et al., “Technology Use, Exposure”.
60. Eichstaedt et al., “Psychological Language on Twitter”, 166.
61. Bucher, “Want to Be on the Top?”
62. Golder and Macy, “Diurnal and Seasonal Mood Vary”, 1881.
63. Ceron et al., “Every Tweet Counts?” 354.
64. Saward, “The Representative Claim”.
65. Dahl, *Polyarchy*.
66. Urbinati, *Democracy Disfigured*, 81.
67. Yeung, “Algorithmic Regulation”; Johns, “Data Mining as Global Governance”; Dahlgren, “Social Media and Counter-Democracy”.
68. Johns, “Data Mining as Global Governance”, 26.
69. Hood and Margetts, *The Tools of Government in the Digital Age*.
70. Cornwall, *The Participation Reader*.
71. Ford, “Save the Robots”, 1579.
72. van Deth, “A Conceptual Map of Political Participation”, 356.
73. Turnhout, van Bommel, and Aarts, “How Participation Creates Citizens”.
74. Brabham and Guth, “The Deliberative Politics”, 465; Leach and Scoones, “Science and Citizenship in a Global Context”.
75. Hajer, “Setting the Stage”, 626.
76. It is an empirical question of whether and to what extent online behaviour corresponds to political engagement, online and offline. Östman, “Information, Expression, Participation”.
77. Klinger and Svensson, “The Emergence of Network Media”.
78. Urbinati, *Representative Democracy*.
79. Krästev, *After Europe*, 35.
80. Zuboff, *The Age of Surveillance Capitalism*.
81. Kely, “Too Much Democracy in All the Wrong Places”, 79.
82. *Ibid.*, 80.
83. Urbinati, *Democracy Disfigured*, 108–9.
84. Fourcade and Healy, “Categories All the Way Down”.
85. Kreiss, *Prototype Politics*.
86. Fukuyama, *The End of History and the Last Man*.
87. Streeck, *Buying Time*.
88. Hofmann, “Mediated Democracy”.
89. Keane, *The Life and Death of Democracy*.
90. Blühdorn, *Simulative Demokratie*.
91. Reckwitz, “Medientransformation und Subjekttransformation”, 173.
92. Blühdorn and Butzlaff, “Rethinking Populism”, 5.
93. *Ibid.*, 11.
94. Mouffe, *The Democratic Paradox*.
95. Bivens, “The Gender Binary”; Ruppert, “Seeing Population”.
96. Siapera, “Reclaiming Citizenship in the Post-democratic Condition”.

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