

Rethinking the Digital Democratic Affordance and Its Impact on Political Representation: Toward a New Framework

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Abstract:

This article advances a new theory of the digital democratic affordance, a concept first introduced by Lincoln Dahlberg to devise a taxonomy of the democratic capacities of digital media applications. Whereas Dahlberg classifies digital media affordances on the basis of preexisting democratic positions, the article argues that the primary affordance of digital media is to abate the costs of political participation. This cost-reducing logic of digital media has diverging effects on political participation. On an institutional level, digital democracy applications allow elected representatives to monitor and consult their constituents, closing some gaps in the circuits of representation. On a societal level, digital media allow constituents to organize and represent their own interests directly. In the former case, digital affordances work instrumentally in the service of representative democracy; in the latter, digital democratic affordances provide a mobilized public with emerging tools that put pressure on the autonomy of representatives.

Keywords: digital democracy; affordance theory; instrumental affordance; emerging affordance; democratic theory

Over the past decade, a new generation of online decision-making software such as Liquidfeedback, Loomio, Pol.is, DemocracyOS, CitizenOS, Adhocracy, Consul, Decidim, CitizenLab, and Rousseau—among others—have been released with the ostensible goal of letting ordinary citizens contribute program and policy proposals to political parties and administrations, take part in urban planning and participatory budgeting projects, vote in local and national referendums, and select party candidates via online primaries (for an overview see Simon et al. 2017). As compared to early e-democracy experiments based on mass e-mail campaigns and online forums (Shulman, 2006; Vedel, 2006; Chadwick, 2009), this “second wave of digital democracy” (Gerbaudo, 2019: 106) presents three distinctive features. First, the software tends to incorporate *decision-making functionalities* that were virtually absent from previous software. Second, the new digital democracy initiatives (DDIs) are frequently binding, which means that they have a higher political weight than the consultative processes of previous decades. Third, the DDIs of the 2010s have been attracting and enabling *mass participation*, reaching peaks of tens of thousands and even hundreds of thousands of participants per initiative. This means that citizens are increasingly put in the condition to express their own will directly rather than entrusting elected representatives with the task of representing them *in toto*.

For all these innovations, the digital democracy literature has made limited theoretical advances in recent times. After oscillating between “revolutionary” and “normalizing” hypotheses on the democratic potential of online deliberation for nearly two decades (Chadwick, 2009; Wright, 2012), digital democracy scholars have taken a more

pragmatic, case study-based approach. If the focus on case studies has the advantage of accounting for precious contextual factors, the field as a whole seems to have missed the opportunity to grasp clearly related phenomena at a higher level of abstraction. In particular, digital democracy scholars rarely ask whether the multiplication of DDIs on a transnational level has a democratizing capacity, or whether participation via digital media does not fundamentally alter the balance of power within political systems and organizations.

This lack of theoretical ambition can be partly explained with the dominance of the deliberative strand of democratic theory in the analysis of online discourse. By deploying normative criteria and a methodological apparatus for assessing the quality of online discourse this approach allows for an efficient operationalization of DDIs (see, for example, Kies 2010). However, because the deliberative approach ends up placing “very demanding” requirements on e-democracy (Vedel, 2006: 232), very few DDIs live up to the expectations (Chadwick, 2009). In this respect, digital democracy scholars might need “to abandon some of the more demanding normative requirements associated with democratic deliberation” (Coleman, 2017: 99-100) and evaluate the quality of deliberation as a web of formal and informal processes of opinion-formation and decision making within a given political system (Parkinson and Mansbridge, 2012).

To complicate things further, there exist competing conceptions of participatory democracy. For example, three alternative theories of “radical democracy”—deliberative, agonistic, and autonomist—have been used to map a variety of Internet-based practices (Dahlberg and Siaper, 2007). Thus, before asking whether a DDI democratizes a political system, it is necessary to analyze the particular conception of democracy the initiative tends to advance. This is far from granted as technological designs that appear as neutral often conceal a political preference (Winner, 1993; Feenberg, 2017). For this reason, this article begins with a discussion of the digital democratic affordance, a concept introduced by Lincoln Dahlberg (2011) to advance a systematic categorization of the relationship between digital networks and democratic participation. Building on Dahlberg, the article will advance a new framework for assessing whether the affordances of digital democracy can increase participation, contributing to democratize a political system, or whether they renew and reinforce the logic of institutional representation.

Lincoln Dahlberg’s Digital Democratic Affordances

Although Dahlberg does not offer a single definition of the digital democratic affordance, he suggests that digital networks embed affordances that can support different democratic “positions,” understood as discursive articulations of democratic theories and practices. He goes on to categorize these positions as “liberal-individualist,” “deliberative,” “counter-publics,” and “Autonomous Marxist,” mapping different digital affordances onto each position. First, by enabling voter choice and preference aggregation, e-petition websites and e-voting affordances engender for Dahlberg a liberal-individualist conception of democracy. Second, email lists, online forums, and social networking sites support a deliberative conception of democracy. Third, alternative media networks and actions of electronic civil disobedience epitomize the emergence of online counter-publics. Finally, open source software and peer-to-peer networks enable the creation of digital commons, which embody an Autonomous-Marxist conception of democracy (Dahlberg, 2011)..

Although Dahlberg's taxonomy is inspirational some of the democratic affordances seem to support multiple positions. For example, the alternative digital networks that were associated with the Global Justice Movement counter-public (2011: 862) often embedded email lists and were developed as open source software. In Dahlberg's taxonomy, however, email lists and open source software are not associated to the counter-publics position but to the deliberative position and the Autonomous-Marxist position, respectively. Similarly, although Dahlberg associates social networking sites to the deliberative position, they have also been used for the organization of counter-publics. To be sure, Dahlberg never claims that the four positions are mutually exclusive. However, for a taxonomy to be cogent there has to be a univocal correspondence between a digital affordance and the type of democratic position it is meant to enable.

A possible way to solve this problem is to classify digital media affordances on the basis of their *sociopolitical uses* rather than on the basis of their formal properties. This seems to be Dahlberg's own position as he admits that "the technological affordances associated with each of the positions clearly seem to be affected by pre-given understandings of democracy and democratic subjectivity" (2011: 866). However, because Dahlberg is aware that digital media can also modify preexisting democratic traditions, he recognizes that digital media have the potential of reshaping democratic theory and practice. Thus he asks a crucial question: "*To what extent do readings of technological affordances influence democratic understandings, and to what extent do the latter influence readings of democratic affordances?*" (866, emphasis mine).

This article will try to answer this question by introducing a new framework for grasping the relationship between technological innovation, political participation, and democratic representation. This framework will depart from Dahlberg's model **in two respects**. First, drawing from the academic debate on affordances, it will consider the digital democratic affordance (DDA) as a layered concept **encompassing three dimensions: software design; social and legal norms regulating software use; and actual uses of the software (scale and quality of participation)**. Second, it will assess the impact of the DDA on the institutions of representative democracy, that is to say, the capacity of a digital democracy initiative to renew or democratize political representation.

To introduce the second point, we will reflect upon a meta-affordance that is frequently overlooked in the digital democracy literature: the cost-reducing logic of digital media. As we will see, the capacity of digital media to reduce the costs of political participation allows institutions to be more responsive to citizens and, at the same time, citizens to represent their own interests directly. In the former case, we will be speaking of *instrumental affordances*, which modernize and work in the service of representative democracy. In the latter case, we will be speaking of *emerging affordances*, which **undermine and transform the logic of institutional representation**. Before deepening this distinction, we will review the scholarship on affordances. This will allow us to approach the relationship between digital media and political participation from two specular perspectives: a materialist perspective, which emphasizes the objective capacity of technology to enable and constrain certain political behaviors; and a subjectivist perspective, which argues that **the democratic capacity of a technological affordance is essentially determined by its use**.

Materialist and Subjectivist Readings of the Affordance

In the academic literature on digital media, the term affordance is often used interchangeably with two other terms, feature and functionality. This confusion is both terminological and semantic, with serious consequences for a proper understanding and cogent use of the concept (Evans et al. 2017). As is known, various types of digital media embed certain *features*, which allow us to distinguish them from other media. For example, a standard feature of social networking sites (SNSs) is the user profile, which typically includes a profile picture and some textual information. A user profile (or user account) embeds in turn several *functionalities*, which vary from SNS to SNS. These functionalities are not to be confused with the *affordances* of a user profile, which concern instead the kind of actions that the user profile enables within the social space of the SNS. These include the possibility for users to share information, interact, discuss, and cooperate with other users, and so on. Thus, digital affordances are essentially a sociotechnical concept, which means that not only do they concern the material properties of technology but also the relationship between such properties and their manifold social uses.

Indeed, since its invention, affordance has been conceived as a relational concept and a concept related to multiplicity. Perceptual psychologist James J. Gibson (2015), who coined the term to describe the actionable properties, or possibilities for action, embedded in any object or environment, specified that the same object may afford multiple actions depending on the living being interacting with it. Affordance subsequently migrated to the fields of human-computer interaction and interaction design, where it came to denote the *perceivable*, and thus more markedly subjective, properties of an object (Norman, 1988; Gaver, 1991). Thus while Gibson argued that an object has certain physical properties that afford different actions to different actors— independent of how the object is perceived— interaction designers insisted that different users may have different sensory and cognitive capacities, which ought to be considered at the design level (McGrenere and Ho, 2000; Hartson, 2003).

The debate on whether an affordance is to be understood as a physical-material relationship or whether subjective experience plays a crucial role in shaping such relationship continued as the term entered the fields of science and technology studies and media and communication research in the late 1990s. In these contexts, scholars were less interested in perception and good design goals than in the possibilities offered by digital and networked media for social interaction (Gaver, 1996). Thus new concepts such as *social affordance* (Wellman, 2001; Wellman et al. 2003) and *communicative affordance* (Hutchby, 2001; Hutchby and Barnett, 2005; Schrock, 2015) were introduced to account for the relational aspects of the affordance in online social spaces such as blogs (Graves 2007; Zheng and You, 2016) and social networking sites (boyd, 2011; Treem and Leonardi, 2012; Ellison and Vitak, 2015). Significantly, the materialist approach and the subjectivist approach resurface in these new discursive contexts. Thus, while scholars in the materialist camp emphasize the capacity of digital technologies to frame, enable, and constrain social behavior (Hutchby, 2001; Leonardi, 2011; Faraj and Azad, 2012) scholars working in the tradition of cultural studies of technology (see Slack and Wise, 2005) and social construction of technology (Pinch and Bijker, 1984; Woolgar, 1990) argue that the materiality of technology is itself culturally constructed (Rappert, 2003) and shaped by the imagination and expectations of its users (Nagy and Neff, 2015; Bucher and Helmond, 2018).

A New Framework for the Digital Democratic Affordance

The relationship between democracy and digital technology can also be fruitfully investigated against the backdrop of this debate. On the one hand, Dahlberg's position seems to fall in line with the subjectivist approach insofar as it is the type of "democratic subject" that ultimately determines the definition and function of an affordance (fig. 1).

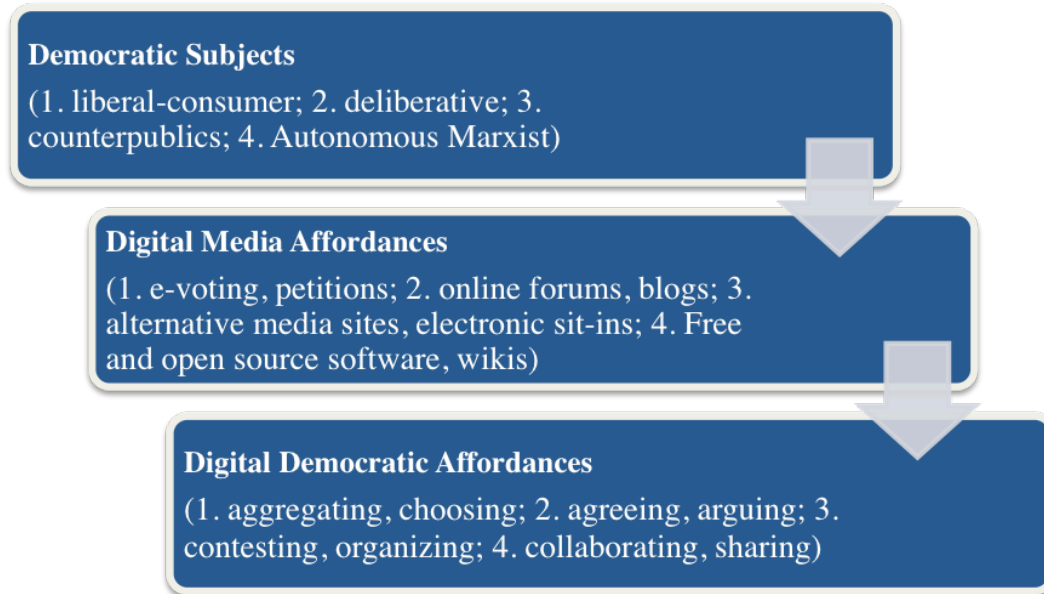


Figure 1. Lincoln Dahlberg's digital democratic affordances (my own representation).

On the other hand, Dahlberg's approach could be read as materialist insofar as digital media affordances seem to enable certain possibilities for action independent of the subject who uses them. Both approaches, however, present shortcomings. By arguing that the political function of technology is determined a posteriori by its use, the subjectivist approach reduces technology to a value-neutral means, overlooking the politics—that is, the set of power relations—that is embedded in technology at the level of design (Foucault, 1975; Winner, 1980; Feenberg, 2002). Conversely, by analyzing technology for its abstract procedural qualities—*e.g.*, online forums afford deliberation—the materialist angle overlooks the broader context within which digital media practices may or may not acquire a democratic function.

Treating the DDA as a sociotechnical concept entails instead an understanding of the complex set of relationships that different software features entertain with one another at the design level as well as with the normative frameworks that regulate and often precede software use, and with the actual uses of the software. Thus the DDA is a three-part concept, which incorporates technology, norms and use (fig. 2).

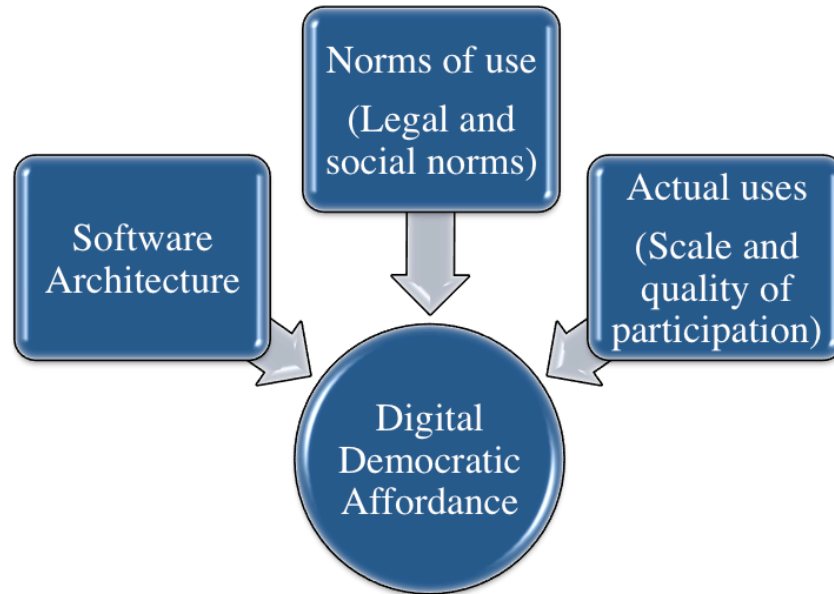


Figure 2. New framework for the digital democratic affordance.

As compared to Dahlberg’s model, which conflates features and affordances, considers each DDA in isolation, and analyzes each DDA as an effect of a software capability, the proposed model places software features, normative frameworks, and sociopolitical uses *within* the affordance. For example, as we will see in the section on Internet voting, the democratic function of voting applications changes depending on whether they are integrated within deliberative platforms or whether they are offered as stand-alone features. Additionally, the substantive impact of online voting depends on whether the initiative is binding or consultative. Finally, the actual scale and quality of participation are key in determining whether an affordance has a democratic capacity or not.

To be sure, at a first sight, the scale of participation might appear to be an effect of the affordance and not an internal component of it. However, for an affordance to be *democratic*, it cannot simply support the expression of special or particular interests. Rather, from the perspective of democratic theory, a DDA must support—at least in potentia—the search for the common good and thus express the general interest that is currently expressed by the institutions of representative democracy. From this angle, it is possible to assess whether a DDA simply maintains and renews existing relations of power between the representatives and the represented, or whether it harbors democratizing capacities, increasing political equality.

Modernization vs. Democratization: Instrumental and Emerging Affordances

Although the renewal and democratization of democracy may partly overlap, it is important to keep in mind that these two processes are driven by different logics. Whereas renewal implies a *modernization* of democracy as a set of governing procedures, democratization points to a *transformation* of the relations of power within and beyond existing democratic arrangements. Certainly digital democracy can enable both processes as modernization and democratization are not mutually exclusive. However, within a modernization framework, digital democracy is primarily employed for its *efficiency*, that

is, for its capacity to reduce the costs of governance and rationalize the public administration (De Blasio, 2014). Within a democratization framework, digital democracy is meant instead to fulfill a range of demands for the redistribution of resources, skills and powers from those who have them to those who ordinarily lack them (Della Porta, 2011). And yet, because they are also predicated on citizen participation, e-government and open government initiatives are often confounded with digital democracy, whose key condition is instead the autonomous and unconstrained participation of citizens (Sorice and De Blasio, 2019).

Thus, on the one hand, the unfortunate overlap between e-government and e-democracy can be attributed to the semantic ambiguity of the term participation, which spans “minimalist” conceptions of political participation (such as voting) and “maximalist” conceptions such as strong and deliberative models of democracy (Carpentier 2011). On the other hand, such confusion can be attributed to the cost-reducing logic of digital media, which increase the efficiency of public management and, *at the same time*, the capacity of citizens to represent and organize themselves (Benkler, 2007; Shirky, 2008; Earl and Kimport, 2011; Bennett and Segerberg, 2013). This means that a generic or unqualified notion of participation is not sufficient in itself to denote a process of democratization. Similarly, the cost-reducing logic of digital media is a *meta-affordance*, which enables in turn different types of affordances—some of which reinforce the institutions of representative democracy and some of which put them, implicitly or explicitly, in question.

The distinction between digital democracy as enabler of modernization and digital democracy as enabler of democratization allows us in turn to distinguish between two types of democratic affordances: affordances that modernize and *work in the service* of representative democracy, which we shall call instrumental; and affordances that democratize and *put pressure* on representative democracy, which we shall call emerging (fig 3).

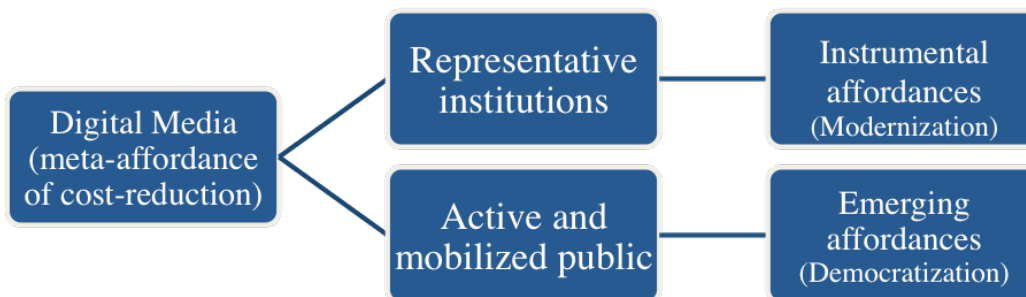


Figure 3. Instrumental and Emerging Democratic Affordances

The Case of I-voting Applications

By way of example, let us briefly consider the case of Internet voting (or i-voting). Although as a technology i-voting is far from having reached closure, it is now a standard feature of digital democracy, e-government, and civic technology applications. If one categorizes—as Dahlberg does—voting as an expression of a liberal conception of democracy, i-voting should simply extend liberal democracy online. This may be true in the context of official consultations such as those held in Estonia, for example, where i-voting provides an additional channel, besides the traditional ballot box, for the exercise of political rights. However, in the context of intra-party consultations such as those held by the Italian Five Star Movement and the Spanish Podemos on their respective websites, online voting is employed to hold intra-party binding referendums, which are a typical *direct democracy* instrument. Further, in liquid democracy applications such as LiquidFeedback, a decision-making software first adopted by the Pirate Party of Germany, voting is employed both as an agenda-setting tool and at the very end of a complex deliberative process for the approval of competing resolutions (Behrens et al. 2014). This means that while i-voting is a relatively stable and nearly universal *functionality* of digital democracy applications, it *affords* a variety of preference aggregation models—including liberal, direct, and “liquid” ones. This is because a variety of factors such as the relationship between different software functionalities within the broader software architecture of a participation platform, the legal and normative frameworks that regulate software use, and the scale and quality of participation, play a critical role in shaping the affordance. It follows that while associating i-voting to liberal democracy may not be formally wrong, such association does not yield any substantive knowledge about the actual democratic capacity of this digital affordance.

In order to construct an analytical framework that may grasp the democratic capacity of a DDA, we propose to consider whether the affordance reproduces and sustains existing institutional arrangements or harbors the potential of subverting them.¹ Thus, when i-voting is employed in the context of official elections it may not necessarily democratize a political system, especially if there is no demonstrable impact on voter turnout. By contrast, when i-voting is embedded within applications whose design and use implies and possibly meets a demand for expanded citizen participation, it harbors the potential of democratizing political representation. As noted, not only is this demand confined to use but is embedded in the very design and architecture of the affordance. In the case of Estonian elections, the software architecture includes an authenticating infrastructure, which allows Estonian citizens (and only Estonian citizens) to vote via a state-issued electronic ID card. By contrast, a party such as Podemos allows Spanish and non-Spanish citizens to become party members and vote via the participation platform, thereby granting political rights to an expansive notion of party membership. This shows how different normative frameworks afford different democratic practices and are therefore integral to the affordance. At the same time, it has been shown that while parties such as Podemos and Five Star Movement frequently consult their base via referendums, voter turnout is

¹ Two possible alternative qualifiers for instrumental DDAs and emerging DDAs could be sustaining DDAs and disruptive DDAs, respectively. However because sustaining innovations and disruptive innovations are rooted in the business and management scholarship (see Bower and Christensen 1995), we have decided to introduce two alternative terms so as to underscore the difference between the impact of digital media on political participation and political systems and the impact of digital technologies on business models.

inversely proportional to the frequency of consultations and tends to decline over time (Author and co-author 2019). This means that the meta-affordance of cost reduction produces contradictory effects as members who are burdened with too many decisions selectively engage only in the consultations they deem important.

Thus while the software architecture and the normative frameworks that regulate the use of i-voting determine the type of democratic affordance (liberal, deliberative, direct or liquid) the scale and quality of participation reveal whether the affordance has the actual capacity to democratize a political system or not.

Instrumental Affordances: Responsiveness, Accountability, Collaboration

As noted, because digital media reduce the costs of political participation, they increase both the capacity of parties and politicians to represent themselves before the public and the capacity of citizens to represent themselves before party leaders and elected officials. While this convergence creates in theory an opportunity for making political representation more responsive to the citizens' needs, modern democratic constitutions typically protect the autonomy of elected representatives via the institution of a free parliamentary mandate. This means that political representation in modern democracies follows the model of trusteeship, which grants representatives discretion to exercise their own judgment while acting in the interests of their beneficiaries (Vieira and Runciman, 2008: 74-75). At the same time, the electoral cycle tempers this autonomy insofar as representatives periodically subject themselves to their constituents' judgment (Urbinati, 2006). This also means that political parties and politicians must try and anticipate the orientation of the electorate (Mansbridge, 2003).

From this perspective, digital democracy applications are instrumental to modernize representative democracy when they introduce new opportunities for elected representatives, government officials, and party leaders to monitor and consult their constituents (Kreiss, 2016; Karpf, 2018). In lowering the costs of political participation, digital media increase in fact the quantity and (potentially) the quality of citizen input, allowing elected officials to extend their responsiveness beyond the electoral moment. Conversely, the digitalization of the public administration reduces the cost of citizen access to government documents and acts, setting the condition for an effective implementation of the democratic principle of government transparency and the "vertical accountability" of government officials to citizens (Diamond and Morlino, 2005). Third, going beyond mutual monitoring, digital media lower the costs for representatives to positively engage the public and cooperate with constituents in policy design through various forms of crowdsourced policy-making (Aitamurto, 2012).

In short, in lowering the costs of political participation and cooperation, instrumental affordances modernize representation along three dimensions:

- 1) They increase the capacity of representatives to monitor the opinion and will of their constituents (responsiveness dimension);
- 2) They increase the transparency of government bodies and the vertical accountability of elected representatives (accountability dimension);
- 3) They foster cooperation between the representatives and the represented on proposed legislation and other political initiatives (collaboration dimension).²

² The three dimensions present overlaps with the three models of e-government known as the managerial, the consultative, and the participatory (Chadwick and May 2003; Reddick 2011) and with various models of

On the first level, elected representatives and political parties can now monitor and listen to constituents, members, and citizens at large through a wide range of communication channels. These channels can be divided in two subgroups: institutional channels and non-institutional channels. The former are e-government and open government applications that range from standard features of parliament websites such as “contact your representative” web forms to institutionalized e-petition websites. These include, for example, petition.parliament.uk, a website for addressing petitions to the British House of Commons and the UK Government; rahvaalgatus.ee, a website based on the participation platforms CitizenOS, which allows Estonian citizens to submit policy proposals directly to the Estonian Parliament; and edemocracia.leg.br, an initiative of the Brazilian House of Representatives allowing Brazilian citizens to submit questions to parliamentary committees and intervene remotely in parliamentary debates. Non-institutional channels include comments and responses posted on the social media accounts of politicians; independent e-petition websites such as Change.org and Aavaz.org; and a myriad civic technology applications that multiply and organize the input of ordinary citizens into local and national policy-making initiatives. Further, political parties and political action groups can rely on their own databases and digital infrastructure for listening to their members and base political messaging on data-driven results (Karpf, 2016).

On a second level, the digitalization of the public administration allows citizens to access government acts more efficiently and hold government officials accountable. Thus, independent monitory websites such as Govtrack.us, TheyWorkForYou and OpenPolis allow American, British, and Italian citizens, respectively, to keep track of congressional and parliamentary voting records. Further in countries that rely on expansive freedom of information laws within an open government and open data framework citizens can submit requests for government acts and records directly online. A freedom of information software such as Alevateli exploits such legislation to allow citizens from over twenty jurisdictions around the world submit FOI requests online. Further, standard social media features—such as the public display of the average response time on government Facebook pages—increase the public pressure on state officials to be responsive to citizen queries and demands. In some cases, as in the case of the Indian anti-corruption website [I Paid a Bribe](http://IPaidABribe), such public pressure is produced by collecting citizen reports of bribing incidents and sharing them with top-level government officials and the media. Similarly, the election-monitoring platform Ushaidi allows local observers to submit real-time reports about voting while producing a geospatial visualization of reported incidents. (As we will see in the next section, the DDAs that support demands for transparency and individual accountability are not to be confused with DDAs that facilitate data leaks by anonymous whistleblowers).

open government, government 2.0, and “government as a platform,” which all emphasize the participatory nature of digital governance in the age of social media (Reddick and Aikins 2012; O’Reilly 2010). As noted, this convergence between digital democracy and open government applications is to a certain extent unavoidable insofar as they both reduce the costs of citizen participation. This is why the notion of digital democratic affordance may be insufficient in itself to capture participation processes that have the potential of democratizing political systems but that cannot be easily integrated within existing governing procedures without transforming them. To account for this transformative dimension of the democratic affordance in the section we turn to the notion of the emerging affordance.

Third, parliamentary websites such as the aforementioned *rahvaalgatus.ee* (Estonia) and *eDemocracia* (Brazil) as well as the French *Parlement et Citoyens*, the Finnish Open Ministry and the Taiwanese *vTaiwan* allow citizens to submit ideas for bills of law and to participate in the lawmaking process. In the case of Estonia, Brazil, and Finland it is the citizen themselves who can submit proposals for a bill of law or a citizen initiative. In the case of *Parlement et Citoyens* and *vTaiwan*, French MPs and the Taiwanese government have been consulting French and Taiwanese citizens on legislative initiatives of their own. But regardless of whether ordinary citizens are granted limited agenda-setting power or are consulted within a crowdsourced lawmaking process, the main function of these participation platforms is to increase the quantity and quality of citizen input into policymaking. To be sure, a constitutional reform such as the Finnish Citizens' Initiative Act of 2012 mandates the Finnish Parliament to discuss all citizen initiatives that have reached 50,000 signatures, allowing citizens to represent themselves. Similarly, the Estonian Parliament must process all citizen proposals that have gathered at least one thousand certified digital signatures in support. But even in those cases, parliament retains the ultimate right to approve, reject or amend any citizen initiative. In this respect, while digital platforms introduce new opportunities for self-representation, these instruments do not really compromise the autonomy of elected representatives and the trustee model of representation.

All in all, it is important to keep in mind that while instrumental affordances are designed to expand the pool of ideas, increase the responsiveness of elected officials and rebuild institutional trust, they do so *witin the institutional framework of representative democracy*. This means that state officials invite citizens to participate as individuals rather than as members of collectives or of associations of citizens, retaining for themselves the right to select the best ideas and mediate between different opinions and proposals. In this respect, these DDIs implement a particular conception of the public as an *atomized mass of individuals*, who entertain an ostensibly direct relationship with their representatives but not with other members of the public (Author, 2017). This is particularly evident in “digital parties” such as the Five Star Movement, Podemos and the France Insoumise, where the strategic separation of deliberation and agenda-setting, both of which remain firmly in the hands of party elites, from voting, which is handed over to members, produces what has been described “as ‘plebiscitarianism 2.0,’ a top-down form of ‘reactive democracy’, styled after social media ‘reactions’ connected metrics” (Gerbaudo, 2019: 127).

Certainly, the deliberative dimension is more present in local consultations such as participatory budgeting projects and citizen initiatives. But the fact remains that with few exceptions the DDIs of the past decade have been unable to scale both deliberation and decision-making from the local to the national level. This is not accidental as allowing ordinary citizens to take over a central function of government such as the capacity to mediate between different interests would greatly diminish the role and power of representative institutions. At the same time, the resilience of representative systems of governance should not obscure the fact that the 2010s have been an extraordinary decade for the experimentation of emerging models of digital participation. Not only have these experiments modernized democratic governance, they have also expressed a “participation surplus” that the institutions of representative democracy seem incapable of absorbing

without undergoing a radical transformation. To account for this disruptive type of participation, we will now turn to the notion of the emerging affordance.

Emerging Affordances, from Refusal to Invention

Whereas instrumental affordances modernize the trustee model of representation, emerging affordances disrupt the institutional logic of representation, revealing a potential for democratization. Such potentiality emerges when social movements or large movements of public opinion leverage the affordances of digital technology to refuse and reinvent political representation. The notions of refusal and reinvention are drawn from Antonio Negri's reading (1999) of constituent power, a concept first introduced by Emmanuel-Joseph Sieyès (1789) to postulate the primacy of revolutionary power and popular will over the constituted power of the Estates General at the time of the French Revolution. In justifying the Revolution's need of breaking with the past, Sieyès famously argued that constituent power cannot be submitted in advance to any given constitution and is therefore "free of all constraints and all forms except those which it adopts at its own pleasure" (Sieyès translated in Minkinen 2009: 79). Building on Sieyès's theorization of constituent power as power without form, Negri reads constituent power both as a negative force (a "force that bursts apart, breaks, interrupts, unhinges, any preexisting equilibrium") and a positive force that "stands as a revolutionary extension of the human capacity to construct history, as a fundamental act of innovation, and therefore as absolute procedure" (1999: 23).

From this angle, constituent power shares something with the pressure that technological innovation puts or can put on governing procedures. Indeed, as we noted, whereas from a modernization perspective digital innovation affords the rational management of an augmented but atomized citizen participation, from a democratization perspective digital innovation can disrupt the subsumption of political participation under the logic of electoral representation. Thus, as a sociotechnical articulation of constituent power, emerging democratic affordances embody both the citizen *refusal* of constituted power—that is, of established governing procedures—and the *invention* of new forms of political organization, which stand as a positive alternative to electoral representation.

One of the most striking examples of the sociotechnical refusal of constituted power is the exponential growth of data leaks and data hacks, which have been compromising the authority and power of governments around the world. The multiplication of data leaks can be attributed to the general availability and reproducibility of digital data, which lowers the cost of copying and distributing information (Author 2017). This has allowed organized groups such as Wikileaks and X-Net to set up encrypted and anonymous drop boxes for the collection of confidential and classified information from whistleblowers (Greenberg, 2012; Postill, 2018). Further, anonymizing software such as Virtual Private Networks and Tor browsers, anonymous web forums, and Internet Relay Chat networks have supported the emergence of hacktivist groups such as Anonymous, whose ethos and modus operandi openly defies the politics of representation (Coleman, 2014; Author 2015). Beyond local differences, these groups share an ideological commitment to leverage the affordances of computer networks to expose the corrupt nature of state power independent of its representatives. In this respect, the organized politics of leaks and data dumps is not strictly aimed at holding individual state official accountable—as is the case with instrumental affordances—but is driven by an implicit

hostility to institutional representation as such, and thus linked to “the radical project of a self-instituting society” (Rosanvallon, 2011: 124).

Further, online anonymity is not the only type of anti-representational affordance. Over the past decade, social networking sites such as Facebook and Twitter have afforded the emergence of mass mobilizations against autocracy and austerity measures such as the Arab Spring, the *indignados*, Occupy, Gezi Park, the Sunflower Movement, Yellow Vests and the Hong Kong pro-democracy movement. It has been noted that in all these movements the refusal of political representation is connected to the emergence of decentralized, “leaderless” and “horizontalist” modes of organization (Gerbaudo, 2012, Castells, 2012; Graeber, 2013; Sitrin and Azzellini, 2014). This leads to a paradox whereby both anonymous software features and social media platforms, which track and surveil user behavior, have supported the emergence of anti-representational movements. Once again, this paradox can be explained by distinguishing between the materiality of software features and the sociotechnical nature of software affordances. In the case of anonymizing software features, the software itself is designed to afford a set of non-representational practices. In the case of social media platforms, it is the mass use of this type of software that allows for “mass self-communication” (Castells, 2009, 2012) and the proliferation of self-representation in the media sphere.

In this way, *the social and communicative density of social media platforms becomes an affordance in its own right*. Indeed, as Gibson notes, “the richest and most elaborate affordances of the environment are provided by . . . other people” (Gibson, 2015: 126). This is a crucial point because it suggests that under certain sociopolitical conditions the refusal of representation can spread by contagion via media platforms whose large user base produces network effects (Katz and Shapiro, 1994), allowing for an exponential increase in the capacity of users to imitate and spread the actions of other users. Thus connective social media features such as hashtags, shares, embeds, and comments enable large numbers of individuals to undertake collective action with no need of knowing each other, no need to be co-present in the same physical location, and no need to be directed from a center (Shirky, 2011; Earl and Kimport, 2011; Bennett and Segerberg, 2013). In this respect, as a sociotechnical process, the emerging DDA lies at the intersection of the rich communicative affordances embedded in social movement practices—such as assemblies, demonstrations, strikes, and sit-ins—and the softwarization and platformization of such affordances.

Here the terms softwarization and platformization are used to underscore the fundamental ambivalence of digital media affordances. Whereas softwarization emphasizes the discontinuity of digital media from prior media forms (Manovich, 2013), and thus their capacity to afford new possibilities for action, platformization considers how the digital affordances of social media platforms work in the service of commodification (Van Dijck et al. 2018; Nieborg and Poell, 2018). These commodification mechanisms can have significant downsides for social movements (Treré, 2018), including the over-representation of spectacular, decontextualized, and ironic images (Poell and Van Dijck, 2015; Neumayer and Struthers, 2019); the “de-synchronization” between the slow temporality of grassroots organizing and the accelerated tempo of social media (Kaun, 2016); and the difficulty of holding democratic discussions about the movement aims on social media pages hierarchically managed by unaccountable administrators (Hands, 2011; Coretti and Pica, 2019). At the same time, these material constraints should not

overshadow the capacity of social media platforms to multiply ordinary citizens' claims for self-presentation. Indeed by offering a platform to a plurality of "self-appointed representatives" (Knops and Severs, 2019) social media multiply "the expressions of social sovereignty," reconstituting the "social generality" that is currently symbolized by the institutions of representative democracy (Rosanvallon, 2011: 6).

For this potential to be actualized, however, social movements must channel participation within decision-making procedures which can scale beyond the sociopolitical context and set of practices from which they originated. As noted, the legitimacy of any democratic procedure is tied to its capacity to express the general interest against particular, private or special interests. For example, the decision-making software Loomio reproduces the consensus-oriented decision making of the Occupy movement, allowing *any* group to deliberate and search for consensus, regardless of its political positions or geographical location. Although Loomio has not been designed to scale deliberation beyond few dozen participants per group, other types of software such as LiquidFeedback, Reddit, and Pol.is embed DDAs that support mass deliberation. Although these deliberative platforms have been employed with a certain degree of success by the Pirate Party in Germany, Podemos in Spain, and the Taiwanese government, respectively, party elites and government officials have sought to limit their political impact (Author 2019; Author and Co-Author, 2019).

Nevertheless, political resistance to these emerging decision-making protocols should not overshadow the fact that large numbers of Internet users are now capable of undertaking complex political tasks and co-author legislation outside of parliaments. Such tasks include dividing political work and allocating responsibilities to fiduciaries via a sophisticated system of reversible delegations (LiquidFeedback); determining agenda priorities via distributed mechanisms for the production of relevance (Plaza Podemos); and breaking political deadlock through artificial intelligence mapping of converging opinions around controversial issues (Pol.is/vTaiwan). On the other hand, it is undeniable that while emerging DDAs may have a democratizing potential, they do not always have democratizing *effects*. This is due to a variety of contextual factors, including bureaucratic and political resistance among civil servants and politicians; procedural barriers that make it difficult to translate citizen input into policy outcomes; and uneven participation among different demographic groups in online initiatives (for an overview see Simon et al. 2017). Certainly such barriers can also have a negative impact on open government initiatives and instrumental DDAs. But political resistance is likely to have a higher impact on emerging affordances because of their capacity to endow ordinary citizens with certain powers—such as the power to set the political agenda and mediate between different interests and positions—that have been historically a prerogative of elected officials and party elites.

Conclusion: The Four Dimensions of the Digital Democratic Affordance

Indeed, herein lies the main difference between instrumental DDAs and emerging DDAs. *Whereas the former are integrated within existing systems of government, the latter reveal precisely what cannot be integrated in governing procedures without causing tension between constituent and constituted powers.* Given that software features can be easily transferred from one context to another but yield widely different outcomes—as demonstrated via the case of i-voting applications—we argued that the concept of the

digital democratic affordance must incorporate normative and socio-political conditions that affect the democratizing capacity, or lack thereof, of any participation software.

Conversely the risk of adopting a subjectivist approach—that is, a theoretical perspective that sees technology as a value-neutral instrument whose politics is exclusively determined by the democratic subject positions who make use of it—can be avoided by defining the digital democratic affordance as a layered concept encompassing four sociotechnical dimensions: 1) software design; 2) norms of use; 3) scale of participation; and 4) quality of participation. Depending on their internal configuration and mutual interaction, these dimensions determine whether digital media are employed instrumentally to modernize institutional representation or creatively to democratize representative institutions.

Software Design. The analysis of software functionalities can reveal a great deal about the particular conception of democracy embedded into the architecture of decision-making software and participation platforms. Our argument has been that *it is not sufficient to isolate and link specific functionalities to specific democratic positions—it is also necessary to understand how software functionalities relate to each other.* For example, the democratic function of i-voting changes depending on whether this feature is integrated within decision-making software that supports deliberation or whether it is offered as a stand-alone feature. Similarly, because access to online voting requires an authentication procedure, such procedure can be designed to be more or less inclusive, which entails in turn different conceptions of the demos. From an emerging perspective, connective features of social media platforms such as hashtags and shares can quickly scale protest events and mobilizations allowing citizens to represent their own interests directly. However, lowering costs of self-representation do not translate automatically into distributed bottom-up decision making. For this reason, the analysis of emerging software features cannot be decoupled from the analysis of customary norms of use and of actual software usage.

Norms of use. The normative frameworks that regulate the use of software tools affect a DDA's perceived efficacy and thus its political impact. For example, research shows that use of LiquidFeedback (LQFB) declined soon after the German Pirate Party failed to make statutory changes that would have made the resolutions approved through a LQFB-powered platform binding (Jabbusch 2011). Similarly, members of Podemos stopped using the deliberative platform Plaza Podemos as soon as the party introduced an unreachable quorum for member-sponsored initiatives (Author and co-author, 2019). Thus, *because procedural norms affect a DDI's substantive impact, they are integral to the digital democratic affordance and not extrinsic to it.* From an emerging perspective, research on hacktivist groups such as Anonymous and X-Net shows that both the refusal of representation and the prefigurative politics based on self-representation are grounded in strong ethical norms. However, social movements have been reluctant or unable to leverage the affordances of media platforms beyond the local level to deliberate and make decisions on shared action programs at a national or supra-national level. This is partly due to the fact that whereas consensus-oriented decision making can be achieved within relatively small affinity groups, it is much harder to build trust and reach consensus within large groups. From an instrumentalist perspective this is not an issue as representative institutions derive their legitimacy and largely base their decision making on majority rule. From an emerging perspective, however, majority rule is inadequate to capture the

complexity of decision-making processes that involve and affect many actors, especially those belonging in minority groups.

Scale of participation. A DDA cannot be said to be democratic without affording large-scale participation. This is because large-scale DDIs have a capacity to express the general interest that small-scale initiatives do not express. In this respect, *large-scale participation is not merely an effect of the DDA, but also a condition of it.* In the case of instrumental DDAs, institutions need large-scale participation in order to justify and renew their representative claim (Saward, 2010). As we have seen, digital media platforms allow institutions and political organizations to scale preference aggregation at a much lower cost than ballot box and postal consultations. This has allowed representatives to increase the quantity and frequency of citizen input, closing some gaps in the circuit of representation. However, the plebiscitarian character of large-scale consultations has also raised concerns over their actual democratic quality. By contrast, in the case of emerging DDAs, large-scale participation is meant to put pressure on the legitimacy of representative institutions. Indeed, connective features of social media platforms have rapidly scaled protest events and mobilizations, deepening the crisis of electoral representation. At the same time, these mobilizations have set the conditions for the emergence of large-scale experiments in participatory democracy that could not be envisioned without the support of digital media. Whereas some of these experiments have been partly institutionalized in the form of digital plebiscitarianism, some others have continued to put pressure on the logic of representation by showing precisely what institutions cannot subsume without undergoing a radical transformation.

Quality of participation. The above reflections on the limits of digital plebiscitarianism on the one hand, and the difficulty for social movements to scale bottom up decision-making processes on the other hand, suggest that the meta-affordance of cost reduction does not lead in itself to an improvement in the quality of democracy. Thus representative institutions that are willing to increase government transparency and citizen input into policymaking must allocate resources to ensure that online participation has a substantive impact. These may include, for example, paid staffers who can respond to citizens' queries and forum moderators who can encourage a diversity of viewpoints in online deliberative forums (Borge-Bravo et al 2019). Because DDIs that do not support inclusion and diversity lend themselves to criticism for empowering those who are already better educated and of higher income than the average population (see Spada et al. 2016; Cordeiro 2018), *the quality of participation is also an internal component of the digital democratic affordance and not only an effect of it.* Simply put, a digital democracy initiative is not very democratic if it amplifies existing inequalities. From the perspective of constituent power, the quality of participation emerges through the invention of new forms of political organization and representation. Indeed, transitive delegation systems such as LiquidFeedback and scalable tools for mass deliberation such as Pol.is and Reddit display emergent properties that blur the boundaries between represented and representatives, allowing ordinary citizens to assume many functions of representative power such as the capacity to deliberate and decide on issues of common concern. Whereas these systems are no more inclusive than their institutional counterparts, their low level of institutionalization makes them valuable as sites of experimentation for emerging decision-making protocols.

In sum, in this article we have argued that the DDA is a layered concept which cannot be reduced to the features of a software. Rather than proposing a classification of affordances based on what a software can or cannot afford, we have proposed to consider the DDA as a discursive articulation of three components: technology, norms, and use. Incorporating norms and use *within* the technological affordance fulfills a double function. On the one hand, it allows us to go beyond Dahlberg's taxonomy, which cannot explain why the same software functionality can afford in fact different democratic positions. On the other hand, it grasps the affordance for its capacity to modernize or democratize (democratic) political systems. In the case of modernization, the cost-reducing logic of digital media is put in the service of institutional governance, improving the circuit of electoral representation. In the case of democratization, the meta-affordance of cost reduction is grafted onto the social affordances of mass participation allowing for the emergence of democratic practices, which challenge the capacity of professional politicians to hold the monopoly of representation (Bourdieu, 1991). Certainly, instrumental DDAs and emerging DDAs are not always mutually exclusive. In fact, in some cases, digital democratic affordances may combine instrumental and emerging properties to both renew and democratize political representation. But as an expression of constituent power, emerging affordances are always more likely to meet political resistance for their capacity to transfer resources, skills and powers from those who have them to those who lack them.

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