

Logics and orientations of digital activism. From use and appropriation to the development of autonomous tools

Lógicas y orientaciones del activismo digital. Del uso y la apropiación al desarrollo de herramientas autónomas

José Candón-Mena.

Universidad de Sevilla. Spain.

jcandon@us.es



David Montero-Sánchez.

Universidad de Sevilla. Spain.

davidmontero@us.es



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ABSTRACT

Introduction: The text departs from a theoretical review to distinguish two specific dynamics involving the use of commercial tools by activists on the one hand, and the development of autonomous technologies driven by social movements themselves on the other. **Objectives:** The objective of this article is to define various logics of digital activism by engaging critically with several scholarly contributions that, generally through a historical analysis, allow us to establish theoretical distinctions and recognize differentiated logics of action when it comes to determining how social movements actually use digital technology. In the paper, critical engagement with the literature is examined against our empirical findings to challenge pre-existing assumptions, as well as evolutionary approaches sometimes observed in some of these contributions. The text also makes a point of transcending closed historical stages. **Conclusions:** The article's conclusions point towards a multidimensionality of factors (pragmatic-utilitarian, strategic-tactical, and ideological/identity-related) regulating how social movements leverage technology.

Keywords: social movements; techno-politic; cyberactivism; technological sovereignty; informational capital.

RESUMEN

Introducción: A partir de la revisión teórica el presente artículo distingue dos lógicas diferenciadas que van desde el uso por parte de los activistas de herramientas comerciales al desarrollo de tecnologías autónomas impulsadas por los propios movimientos. **Objetivos:** El objetivo del texto es definir distintas orientaciones del activismo digital a partir de contribuciones que nos permiten reconocer lógicas de acción diferenciadas en torno a la relación entre movimientos sociales y tecnologías digitales. Se analiza críticamente dichas aportaciones y las contrastamos con la realidad empírica para cuestionar y complejizar las nociones de partida, señalando contradicciones o usos complementarios que trascienden etapas y cuestionan la lógica bipolar o evolucionista que a veces se perfila en otros enfoques. **Conclusiones:** Las conclusiones apuntan a una multidimensionalidad de factores que inciden en las formas en que los movimientos usan la tecnología: prácticos o utilitaristas, estratégicos y tácticos, e ideológicos o identitarios.

Palabras clave: movimientos sociales; tecnopolítica; ciberactivismo; soberanía tecnológica; capital informacional.

Translation by **Paula González** (Universidad Católica Andrés Bello, Venezuela)

1. INTRODUCTION

Since the so-called "computational turn" within social movements (Tufekci, 2014), much of the theoretical debate about the relationship between movements and digital technology has focused on the role played by technology in mobilizations or the meaning of their influence. Although the critique of technological determinism predominates, some authors privilege the role of technology as a driving force of mobilization (Benkler, 2006; Bennett and Segerberg, 2012; Shirky, 2009) while others maintain the focus on social actors and their capacity for agencies (Flesher, 2014; Mattoni, 2012 and 2017). Regarding the sense of influence, techno-optimist visions highlight the emancipatory potential of ICTs (Rheingold, 1993; Benkler, 2006; Shirky, 2009) while the more skeptical ones underline their risks and threats for critical movements (Dencik and Leistert, 2015; Morozov, 2012; Margolis and Resnick, 2000). The complex ways in which communicative action draws on and gives rise to social, economic, cultural, and political dynamics within the contextual coordinates of each movement, creating complex communicative ecosystems (Treré, 2019), have received much less attention.

This article focuses on the critical analysis of recent contributions that facilitate conceptual distinctions that allow us to recognize differentiated logics of action around the relationship between movements and ICTs. Although these are not contributions that evaluate the same phenomena or periods, we believe that it is possible to establish, from the critical comparison between them, a series of reference points from which to frame our own conceptualization of the use of ICTs for collective action and the factors that determine different logics of digital activism. Our proposal has a heuristic nature since the empirical reality is much more complex, full of contradictions and paradoxes that we will show with examples based on empirical research.

We point as a hypothesis to a multidimensionality of factors that affect how movements use technology, taking into account the influence of the state of technological development at each moment, of ideology or identity factors, of the type of collective action, or the aims pursued by the movement, etc. The incidence of this multiplicity of influences will result in different "logics of action" (Juris, 2012) or "technopolitical orientations" (Gerbaudo, 2017) that sometimes coexist in the same movement but also characterize sectors of activists or specific mobilizations, although questioning the stagnant and evolutionary image that is sometimes perceived in other proposals.

As this text is a theoretical essay based on a documentary review (Randolph, 2009; Callejo, 2009), empirically our research is secondarily supported by previous fieldwork conducted in recent years and consisting of carrying out more than 50 "active interviews" (Holstein and Gubrium, 2016) and 5 focus groups (Barbour, 2013) with activists from different social movements, especially 15M or the feminist movement in Spain and #YoSoy132 in Mexico. We also start from the information collected in different participant observation processes (Shah, 2017) of initiatives such as Indymedia Estrecho, the origins of the platform Democracia Real Ya, of the self-managed social network Lorea N-1, or different Hackmeeting gatherings (Malaga 2008; Madrid 2009; Vallbona 2012; Marinaleda 2014), among others. This empirical work complements the present theoretical approach and has allowed us to contrast the starting conceptualizations drawn from the literature review with the complex empirical reality. At certain points in the text, this empirical knowledge will be used to contrast it with the theoretical framework and illustrate the theoretical proposal that guides the content of this article.

2. OBJECTIVES

The objective of the text is to define different orientations of digital activism based on contributions that allow us to recognize differentiated logics of action around the relationship between social movements and digital technologies. In recent years, a series of theoretical contributions have the merit of complicating a debate that has sometimes been characterized by reductionist views of technological determinism or approaches that evaluate the use of digital technologies in terms of affordances and constraints (Cammaerts, 2015). The concept of affordances poses a game between strategies of regulation, adjustment, and reconstitution, between power and resistance inherent to "technological dramas" (Pfaffenberger, 1992). The new coordinates of the discussion seek mainly to enrich the study of the relationship between movements and ICTs by including aspects such as collective identity, values, culture, and imaginaries about digital technologies and the incidence of the political and socio-economic context in which collective action arises.

Gerbaudo (2017) distinguishes between the "cyber-autonomism" approach, typical of the type of digital activism of the anti-globalization movement and which links with the tradition of alternative media and DIY (Do it yourself) culture characteristic of the early Internet (Padilla, 2012), and an approach to "cyber-populism", representative of what he calls "movements of the squares", among which he includes phenomena such as 15M, #YoSoy132, Occupy, or the Arab Springs and which he relates to the emergence of Web 2.0 (O'Reilly, 2006) and the emergence of commercial social networks such as Facebook, Twitter, or YouTube. The author, while attending to the technological development and evolution from the first internet to the emergence of Web 2.0, links these two phases of digital activism with the concept of ideology, understood as "a worldview and a value system" that affects the form of digitally mediated collective action (Gerbaudo, 2017, p. 11). He thus attends to the "complex imbrication of politics, culture, and technology" that influences the forms of collective action (Gerbaudo, 2017, p. 17) to distinguish between "cyber-autonomism" and "cyber-populism" as the two technopolitical orientations associated with different states of technological development but also with cultural and political transformation from the global movement to the most recent social movements.

For her part, but similarly to Gerbaudo, Guiomar Rovira (2017) distinguishes between "activist networks", which likewise refer to the use of digital technology in the alter-globalization movement, and "connected crowds", characteristic of the movements that will emerge in the last years of the first decade of the 21st century. In the "activist networks", logics of action aimed at escaping the control of the corporate media through the creation of radical media (Downing, 2001) on the Internet prevailed, highlighting, as well as Gerbaudo, autonomy as a central principle of these actions, and contextualizing them, in Rovira's case, around broader cultural and political references such as punk, the *okupa*

movement, the hacker and free software movement, alternative information, or the DIY spirit.

As opposed to the protagonism of activists, counter-informers, computer programmers, etc., in the connected crowds the activities of "anyone" prevails (Moreno Caballud and Grabner, 2015). Therefore, there is a shift towards the appropriation of tools and networks of wide penetration to mobilize by appealing to broad majorities (Toret, 2013, p. 45), the identity links more typical of the autonomous movements of the 60s and 70s and also of the global cycle losing importance.

This same idea overflies the reflection of W. Lance Bennett and Alexandra Segerberg (2012) in which they distinguish between the traditional "collective action" with a strong protagonism of formal organizations and a solid and differentiated collective identity, and the new "connective action", in which mobilization arises from the articulation from the use of communication technologies that call and spread -sometimes anonymously- the protest, replacing the call from formal organizations through the act of sharing a highly personalized content. Temporally, Bennett and Segerberg also point to the so-called Battle of Seattle in 1999 as the moment of the emergence of connective action (Bennett and Segerberg, 2012, p. 749). For the authors, alter-globalization social movements represent a kind of transitional phase in which it is the formal organizations themselves that promote the emergence of inclusive networks, while more recent social movements are characterized by a logic of self-organized action arising from and managed by forms of "mass self-communication" (Castells, 2009) in social networks.

For their part, the reflections on digital activism by Robles and Ganuza (2011) differentiate between what they call "politics on the Internet" and "politics with the Internet" (Robles and Ganuza, 2011, pp. 248-249). For these authors, "politics with the Internet" points mainly to the use of the Internet as a dynamizing element of democratic structures (Hauge and Loader, 1999) while "politics on the Internet" address digital technology as a space for political struggle "for control over the production and distribution of knowledge and political information, as well as for the appropriation of digital tools" (Robles and Ganuza, 2011, p. 249).

Finally, Athina Karatzogianni (2015) constructs a more detailed categorization in which she identifies four distinct phases: origins of digital activism (1994-2001); the emergence of the phenomenon (2001-2007); diffusion (2007-2010), and, lastly, the arrival of digital activism in mainstream politics (2010-2014). Karatzogianni's contribution should be placed in the field of media studies, as her interest is mainly focused on digital activism as a communication phenomenon. Aspects such as the relationship between digital activism and the actors who employ such forms of action or the objectives they pursue appear somewhat more blurred on this occasion. In fact, the main thesis of Karatzogianni's work points to the normalization of digital activism in the current communication and political landscape, co-opted by governments and institutional political actors: the transition from cyberactivism to techno-politics in our terminology.

What emerges from these reflections on digital activism, from autonomist logics of action towards populist or citizen-based dynamics, is nothing more than a general trend in the culture, identity, and strategies of social movements that has been widely discussed in the literature on collective action. In this sense, various authors point, for example, to a "self-limiting radicalism" (Cohen and Arato, 1992) in the movements of the 1960s and 1970s, with the aspiration to totally transform society through micro-struggles in everyday life, renouncing formal politics and the seizure of institutional power and betting instead on the creation of "critical communities" (Rochon, 1998) dedicated to countercultural revolution (Romanos, 2018), promoting the construction of alternatives from below through an accumulation of micro-revolutions and the opening of "temporarily autonomous zones" (Bey, 1991)

or alternative communities outside the control of the state and the market.

Subsequently, a new organizational culture would emerge from the alterglobalization movement, which Della Porta and Mosca (2007) call "contamination in action", emphasizing the value of diversity over homogeneity, personal subjectivity over organizational discipline, transparency or the search for consensus over effective decision-making or "ideological contamination" over dogmatism (Della Porta, 2005, p. 73). What Angel Calle (2013, pp. 67-101) defines as the passage from the "culture of the or" (closed, disjunctive) to the "culture of the and" (open, aggregative) within mobilized groups.

In recent times, the orientation of collective action inaugurated by the alterglobalization movement would be accentuated by reinforcement or broadening of inclusivity, even beyond the organized groups - more or less informal - of the alterglobalization movement, to appeal to broad social majorities through an increasingly inclusive and open identity. For example, in the 15M movement there was a strategic turn (Flesher, 2015, p. 154) in which the outraged strive to overcome classical identities, flee dogmatism and ideological ghettos, and build a plural subject identified with the "ordinary citizen" (Flesher, 2015, p. 150) without completely renouncing the construction of autonomous tools (Micó and Casero-Ripollés, 2014).

Although in the global movement there is a process of aggregation in which diverse movements collaborate, through the iconic union of "turtles and truckers" (Wainwright, 2007), there is no phenomenon of generation of a new identity different from that of the classical left, but rather a strong militant identity remains in force, although less sectarian, as well as the desire to build "another alternative world". In contrast, movements such as 15M question the militant identities and attitudes of traditional left or autonomous activism and, as Perugorria and Tejerina (2018) state, "have striven to build an 'anyone' movement based on a awfully inclusive 'we' that seeks to overcome old ideological or partisan affiliations and the self-referential dynamics, organizational forms, discourses, and identities of traditional social movements" (Romanos, 2018, p. 5). Political discourse and action are conveyed through a sense of inclusivity oriented to the 99% of the population, as pointed out by the Occupy movement (Fuchs, 2014). An identity based on empathy and much more open and transversal, more citizen-based than leftist, trying to avoid self-referential logics and appealing to the vast majority of society, without worrying so much about ideological purity or coherence between means and ends characteristic of the performative strategy. A more pragmatic approach that also influences communicative strategies and the very use of digital technologies, since utility and practicality are more highly valued, for example by making use, albeit critical and subversive, of commercial social networks and worrying less about guaranteeing technological independence through the creation and use of their own networks or media under the control of activists, such as the Indymedia network, the use of self-managed servers, or free software. This is an orientation that is reproduced in more recent social movements such as Black Lives Matters (Tillery, 2019) or the #MeToo movement that evolve from patterns of action based on the disruptive use of commercial social networks.

In this sense, Postill (2016) defines activists as "pragmatic visionaries" who combine a firm belief in the political power of digital technologies with a pragmatic attitude that allows them to assess their true potential. At least the "digital vanguards" (Gerbaudo, 2016) of movements such as 15M, share the myth of the "digital sublime" (Mosco, 2011) and consider the Internet and ideals such as freedom or democracy to be closely intertwined, but far from being techno-utopian dreamers, "they have a very practical view of the limits and possibilities of new technologies for political change" (Postill, 2016, p. 149).

These general dynamics regarding the forms of collective action translate, concerning the use of digital

technologies, into two trends that we have already mentioned and which we will explore in more detail below: the use of commercial or corporate networks and the commitment to autonomous tools developed by the movements themselves. To address this issue, it is important to first define some useful concepts such as "technological sovereignty" (Haché, 2014), which underscores the desire for independence through the use of proprietary tools under the control of the movements. The concept is related to that of food sovereignty and, like the latter, promotes the social management of digital resources for local development, autonomy, and solidarity, promoting technologies "developed from and for civil society" and adhering to "imperatives of social responsibility, transparency, and interactivity" (Haché, 2014, p. 17). Data privacy, abusive terms of use, the possibility of censorship, control, or surveillance to which users of commercial tools are subjected, as well as the accumulation of power in a few hands that comes with the control of such an amount of information, pose a serious risk to privacy, freedom, and democracy pointed out from the Political Economy of Communication (Mattelart and Vitalis, 2015; McChesney, 2012). This especially affects social movements under pressure from governments and economic powers on which they focus their criticism. Technological sovereignty thus becomes a fundamental concept to try to avoid such threats and underscores the need for greater control by society over technological tools, as well as the need to include digital rights in the movements' claims, especially when the political implications of technologies that, due to their communicative nature, directly affect social and political processes become evident (Castells, 2001). The concept of sovereignty in the technological sphere is thus related to the general aspiration for autonomy characteristic of the social movements of the sixties and seventies and also present in later periods. It represents, in the digital environment, that yearning for independence that can be glimpsed in the "cyber-autonomist" orientation described by Gerbaudo.

While full technological sovereignty can be characterized as an ideal, the concept of "informational capital" helps us to detect different degrees of control of ICTs by social movements and users in general. The idea of "informational capital" was developed by Hamelink (2000) from Pierre Bourdieu's idea of cultural capital and symbolic capital (Bourdieu and Passeron, 1977) as a response to the new realities following the incorporation of ICTs. Sierra Caballero (2008) distinguishes three levels of informational capital: the availability of equipment and infrastructure (access), the technical ability to manage these infrastructures (digital literacy), and the ability to evaluate information and apply it to real situations (collective construction of knowledge and networks). These levels are identified by Surman and Reilly (2005) as successive stages of a path from access to adoption and from adoption to the appropriation of ICTs. León et al. (2001) describe these same three levels, defining access as the availability of the necessary equipment and connection to electronic networks (available hardware and software, Internet connectivity, etc.), use or adoption as the capacity to use the available technology, and technological and informational appropriation as the organizational disposition to integrate resources and uses, to process information and use it in concrete situations. Appropriation thus involves an approach to technological tools that goes beyond their passive use, including unintended disruptive uses to adapt them to the users' own needs and purposes, what Galis and Naumayer (2016) call "detour" practices of cyber material.

Beyond appropriation, which involves altering the intended uses but without modifying the tools themselves, we choose to add a higher level of "development" that comes to describe those cases in which movements or activists not only appropriate the tools available for their own purposes but also create and design new digital tools of their own or modify existing ones (Candón-Mena and Calvo, 2021, pp. 137-139). These developments would therefore be a higher degree of informational capital that is related to the aforementioned technological sovereignty, aspiring to the above-mentioned creation of tools developed by and for civil society, although it would also include the modification or hacking of pre-existing tools to make minor adaptations.

3. ANALYSIS AND RESULTS

As we have pointed out, the periodization and conceptual proposals discussed have heuristic purposes and must be confronted with the empirical reality to show the existing complexity, which questions and qualifies both the watertight periodizations and the pure and antagonistic concepts, outlined in dualistic or bipolar terms. For reasons of space, we will limit ourselves to a few examples that serve to illustrate the coexistence of different logics and uses that transcend the stages, complement each other, and sail against the tide regarding the evolutionist image.

To underline this complexity in practice, we will use some examples of the 15M movement which, as we saw in the theoretical framework, authors such as Gerbaudo place in the wake of the "cyber-populist" movements, while Rovira similarly defines it as "connected crowds", as opposed to preceding movements such as alter-globalization, which they define respectively as "cyber-autonomist" or "activist networks", and other authors have presented it as a paradigmatic movement of the logics of connective and self-organized action (Anduiza, et al., 2014). Framing 15M in this way makes perfect sense given, on the one hand, the predominant use it made of commercial networks such as Facebook (and also Tuenti), Twitter, or YouTube (Casero-Ripollés, 2015), and on the other, the clear transversality and inclusiveness of the movement, with an open and citizen-based identity very different from the militant attitude that still survived in the global movement, as well as its strategy very focused on influencing public opinion and gaining its approval rather than creating dissident and to some extent self-referential alternative spaces.

In this context, it is well known that the call for the first demonstration that gave rise to 15M was conceived and disseminated mainly through Facebook. It arose from a group in the social network called "Plataforma de coordinación de grupos pro-movilización ciudadana" (Coordination platform of pro-citizen mobilization groups), which later became Democracia Real Ya (DRY). Both for the discourse of the call ("We are neither left-wing nor right-wing [...] some of us consider ourselves more progressive, others more conservative...") and for the tools used, the "cyber-populist" orientation is evident.

What is less well known is the fundamental role played from the beginning by people with a background and identity that are nevertheless prototypical of the "cyber-autonomist" orientation, which shows that even in this case both strategies coexist and complement each other. We can take the concrete example of the hacktivist nicknamed Manje¹. His trajectory is directly related to the previous alterglobalization cycle, to the point of being one of the essential protagonists in the creation of one of the nodes of the Indymedia network (Indymedia Estrecho) (Teruel and Cabello, 2006), pointed out as a prototype of the "techno-autonomist" orientation of the global movement. At the dawn of 15M, however, besides creating the DRY website, Manje is at the central core of the organization and the call for protest on Facebook, using a commercial network far removed from the hacktivist ideal. But even there, the use he makes of it is so disruptive that it provokes the closure by Facebook of the events created to call for the May 15 demonstration, due to the use of a script that allowed inviting all friends to the protest event, without the need to select them one by one. The use of this script, recommended

1 The data presented here are extracted from participant observation. Specifically through personal contact with Manje (<http://www.manje.net/>) for years and collaboration in various mobilizations. For example, the joint participation of the main author of the text and Manje in the collective of the Indymedia Estrecho node, the participation, at the invitation of Manje, in the Facebook group "Plataforma de coordinación de grupos pro-movilización ciudadana" weeks before the 15M demonstration -which gave rise to unpublished data of the diffusion before the May 15 demonstration published in Candón-Mena (2013)-, or the participation in the Lorea/N-1 network also initiated by Manje, being the author of this text its 4th inhabitant (user).

in the event description itself, turned out to contravene Facebook's terms of use by facilitating the dissemination of spam, which motivated its temporary closure –which ultimately benefited the dissemination of the protest by generating the well-known "Streisand effect" (Ortega-Barba, 2018)–. Activists like Manje do not, therefore, make passive use of commercial networks, they force the platform itself according to their interests, overflowing, therefore, in terms of informational capital, the level of use and appropriation of the tool to include that of development (at least with a slight modification of its operation).

If we can already see the fundamental role of hacktivists at the dawn of the first demonstration, this will increase in the second phase of the movement, when the camps begin. A large part of traditional activism then joined 15M, including hacktivist groups such as the Hacklab of the Patio Maravillas occupied social center, which promoted Hacksol, the hacker laboratory created in the camp in Madrid's Plaza del Sol. These groups will create a whole technological infrastructure at the service of the movement, such as the network of web pages of each camp tomalaplaza.net or takethesquare.net, focused on its international diffusion.

The movement is growing and, beyond the initial call through Facebook and the dissemination tasks, it begins to require tools for the organization and sustained coordination of a group that is multiplying. By inertia, the general and local groups created on Facebook are used for this purpose, which is chaotic, as the social network proves to be totally inadequate for long-term organization and debate (Candón-Mena, 2013, pp.145-153). Faced with this situation, at a certain point it was decided to use the N-1 network, promoted by Manje from the Lorea social network seedbed. There was a massive migration from Facebook -which would continue to be used for dissemination tasks- to N-1, which in a month and a half would grow from 3,000 to 30,000 users ("inhabitants" in the terminology of the network) and from 370 to 2,100 groups. The autonomous nature of the new network is clearly reflected in one of its slogans: "the master's tools will never dismantle the master's house". As summarized by Spideralex, an activist of Lorea/N-1, "within Facebook the logic is individualistic, the exchanges and tools are centered on the individual", in N-1 on the other hand "it also starts from individual subjectivity, but this is as important as the groups are" (Grasso, 2011). Lorea explicitly defines itself as a project of "free, safe, federated, and self-managed" social networks. The "techno-autonomist" orientation is thus evident. N-1 is a network developed by activists (maximum level of informational capital) to achieve technological sovereignty of the tools used by the movement (Casas et al., 2011).

But what we want to point out with these examples is the combination, in practice, of "cyber-autonomist" and "cyber-populist" strategies, the hybridization between autonomous spaces and commercial tools, or the adaptation in each case according to the needs of the movement. Technopolitical activists navigate in a sea of contradictions between autonomous and pragmatic uses of technological tools, aware that "you have to contradict yourself with your head", as the veteran activist and head of networks in the Sol camp Marta Franco affirms (interview, June 2012).

Thus, the same person who creates an autonomous project such as Indymedia in the alterglobalization cycle may turn to the use, albeit disruptive, of Facebook at the beginning of 15M, to later promote migration to the alternative network N-1. The movement in general will make continuous use of Facebook, Twitter, Tuenti, or YouTube but also hacktivist groups such as HackSol will be created and autonomous projects such as Propongo, bookcamping, 15M.cc, SolTV, Ágora Sol radio, Oiga.me, etc. will be promoted.

These empirical examples allow us to qualify and question the proposed periodizations, which do not detract from their usefulness in detecting trends and logics of technopolitical action that may be

characteristic of a particular movement or a sector of it. But, above all, confronting theoretical concepts with empirical reality is useful to outline the different logics of action and try to detect the factors that in each case influence the choice of one orientation or another.

4. CONCLUSIONS

Theoretical reflection and the contrast of concepts with empirical reality help us to detect a series of complementary factors that influence the orientation regarding the use of ICTs for collective action in each specific case (Candón-Mena and Montero-Sánchez, 2021). We highlight three types of factors that seem relevant to us: utilitarian; strategic, or tactical; and ideological or identity-based.

Proposals such as Gerbaudo's have the merit of emphasizing ideological or identity-based motives and questioning technological determinism. According to Lévy, "technology conditions but does not determine", that is, it is not determinant as a monocausal factor, but it does have its influence since it "conditions or constraints, opens and closes the range of possibilities" (Lévy, 2007, p. 11). We, therefore, point out how the practical utility of the tools available at a given time also has a relevant role to play. These practical and utilitarian factors should be understood in both a positive and negative sense. In a positive sense, the wide diffusion of commercial tools such as Facebook and its ability to reach a mass audience would be an important reason for activists to use a tool that, deep down, they may not like. The argument, in this case, would not be qualitative, but rather quantitative, activists choose to use Facebook not because they find it a good tool for digital activism, but because everyone else uses it. In a negative sense, the perception of the risks of censorship, control, or repression that are increasingly present both in the activist environment and in society, in general, will also play a role. Of course, these utilitarian factors will also influence the use of autonomous tools. The availability of alternatives that, besides being more coherent with the ideas or principles of activists, are really practical, usable, and stable, is fundamental for their adoption.

In the case of Spain, we have experienced self-organized mobilizations through SMS messages (13M) (Sampedro, 2005), e-mail (Movimiento por la Vivienda) (Haro and Sampedro, 2011), or Facebook and other social networks (15M) (Candón-Mena, 2013). The simplest explanation for the use of the different channels -with different degrees of autonomy or commercialization- is simply the availability and popularity of each of these media at the moment when the mobilization arises. It would be absurd to call for a protest today through paid SMS messages when free instant messaging tools such as WhatsApp or Telegram are available. Nor would it be strange that, in the event of a new self-organized mobilization, other tools would be chosen, such as instant messaging or emerging social networks like Instagram or TikTok, which have been replacing the popularity of Facebook, especially among young people.

The Indymedia network itself, a media icon of the global movement, was overtaken by "a political socialization of technology in the hands of anyone", while "the political use of technological tools, at the dawn of the anti-globalization movement, was in the hands of a kind of media-activist caste" (Fernandez-Savater, 2009). As the author and Indymedia activist acknowledges, the rise of blogs and other social networks that allow self-publishing socialized the availability of useful tools for activism as alternatives to the autonomous network created by the global movement. Apart from identity or ideological factors, which also influence the distinctive forms of activism between the alterglobalization movement and new movements such as 15M or 132, the simple availability of commercial or autonomous tools that are practical for the needs of activism influence the choice of one or other technologies. In this case, the popularization of blogs or commercial social networks, as well as the difficulty of maintaining in the long term the servers of proprietary tools such as Indymedia,

affect the structure of costs and benefits, or what Cammaerts defines as "media opportunities" (2012) linking the concept of the structure of political opportunities to the communicative context.

The movement's own strategy and concrete tactics also influence its technopolitical orientations. The distinctions between logics of action analyzed here, as we have said, the cost of reducing and simplifying the complex reality. They often approach the use of new technologies in a general way, without breaking down the different possible uses for the different tasks carried out by social movements, or the ends they pursue. At the strategic level, the first question to be asked is what the different movements intend to use the technological tools for. Thus, it is coherent that in autonomous movements that were committed to the aforementioned "self-limited radicality" and focused on the creation of alternative communities, a "techno-autonomist" orientation prevailed, given the importance of the performative strategy or their more self-referential orientation. However, more inclusive movements such as 15M, #Metoo, or 132, etc., oriented towards influencing general public opinion to achieve short and medium-term successes in institutional policy, would therefore be more pragmatic, without questioning so seriously the coherence between means and ends of the performative strategy, betting on tools of wide dissemination that allow them to reach the broad social layers to which they appeal, such as the most popular commercial social networks.

The incidence of strategic factors is clearly perceived, for example, in the Mexican context, as a result of the intense debate on the EZLN's attitude towards institutional politics and, specifically, its rejection of the candidate López Obrador, seen, however, as a hope by the majority of activists of the 132 movement. As one of the activists interviewed stated, "I agree with the proposal and the construction of alternative [of the EZLN] but I do not agree with their political strategy because leaving the notion of the State is not entering the debate" (Focus group in Mexico City, 2013). This could partly explain the contrast between the "cyber-autonomist" character of neo-Zapatismo and the clearly "cyber-populist" orientation of the 132 movement concerning new technologies.

Secondly, at the tactical level, the movements use the new technologies for very specific uses. In fact, activists do not value equally the relevance of each of these tasks, giving, for example, greater value to the internal work of debate, organization, and coordination than to the tasks of dissemination or the call for action, which also influences the importance given to the choice of autonomous tools, for the former, or commercial, for the latter. Thus, even collectives directly involved in the development of autonomous technologies in search of full technological sovereignty, such as those that meet at hackmeeting gatherings, can tolerate the use of commercial tools such as Twitter to disseminate their encounters, although only on a personal basis and not from an official hackmeeting account on this social network.

A final example is the Tsunami Democràtic application created by the Catalan independence movement to coordinate protests against the conviction of the leaders of the *procés* (Bielsa, 2021). Evidently, the chosen tactic of civil disobedience imposes the need for the use of an autonomous application that guarantees the privacy and confidentiality of both the information and the identity of activists who opt for methods of civil disobedience outside the law. The disobedient tactic thus entails the use of autonomous tools that seek to evade government control.

Lastly, as highlighted by authors such as Gerbaudo, ideological or identity factors have a profound impact on the logics of action of social movements. The use of technologies is not only instrumental and, especially in communicative technologies such as the Internet, the tool itself symbolizes cultural values in such a way that activists identify with the medium (Lievrouw, 2011). Using a free operating system such as GNU/Linux is not only a matter of utility but also becomes a sign of counter-cultural

distinction (Candón-Mena, 2019). When there is a strong identification with the tools, these identity values determine the commitment to autonomous tools. When this identification is laxer, what is important is the end and activists do not identify with certain tools, they simply use them following criteria of opportunity and utility. It should be noted again that this cultural identification is not bipolar, with a clear distinction between autonomous and commercial media. In general, activists identify with network principles that are consistent with the values of the new movements. In terms of specific tools, commercial networks such as Twitter can be rated more positively than Facebook, or Telegram better than Whatsapp, despite all of them being commercial projects. Fieldwork and interviews with activists of the Mexican #Yosoy132 movement also reflect the incidence of these cultural, ideological, and identity factors. As Mexico is a pioneer in digital activism starting with the "communicational guerrilla" of neo-Zapatismo (Leetoy et al., 2004), it is surprising in 132 the scarce concern for the use of commercial networks, for example, in comparison with 15M. While, despite emerging in commercial networks such as Facebook, the 15M camps connected the movement with traditional activism or social centers such as Patio Maravillas and hacktivist groups such as HackLab, in the case of the 132 movement, which emerged in universities, failed to connect to the same extent with local activism and Mexican hacktivist groups, such as Rancho Electrónico in Mexico City. This disconnection meant that, unlike 15M, on the one hand, there was no work to raise awareness among the bulk of activists about the use of autonomous tools by the hacktivist groups most aware of the issue, i.e. a work of cultural and ideological diffusion that could have an impact on the forms of technological appropriation. On the other hand, however, there was also no collaboration in making useful autonomous tools available to the movement as an alternative to commercial networks (a task that was paradoxically partly taken on by the Spanish 15M movement), which also influences the incidence of utilitarian factors.

Taking these factors into consideration ultimately draws a ground in which the relationship between the temporal periodizations and the theoretical concepts we have evaluated become more complex, responding to multicausal influences and problematizing any evolutionary sense. Instead, we rather glimpse a tension for hegemony between the different technopolitical orientations that are part of the digital action repertoire of social movements. Thus, rather than an endpoint, these periodizations should be conceived as a starting point that invites reflection on the complex web of dynamics that determine the communicative modes of action of movements in a digital environment and a changing political context.

Indeed, the intensive use of digital networks currently starring many far-right movements invites us to reflect on the complex dynamics of digital activism (Schradié, 2019). In this context, we can see how the emancipatory myths and cyber-libertarian rhetorics (Dahlberg, 2010) that characterized technoutopian imaginaries in the early days of digital activism, when progressive social movements pioneered the political use of ICTs, can be reformulated and equally serve movements far removed from democratic values (Candón-Mena and Treré, 2022). The conjunction of ideological and cultural factors, of different strategies and tactics focused on achieving different ends or of the state of technological development and the availability of useful tools for different purposes can therefore give rise to different logics of use and appropriation of digital technologies by different actors. Analyzing the complex interrelation of variables that define the different technopolitical orientations in each case is a pending challenge for future research.

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AUTHOR/S:

José Candón-Mena

Universidad de Sevilla

Professor at the Department of Audiovisual Communication and Advertising of the Universidad de Sevilla. Main Researcher of the R&D Project "Sustainability of the Third Communication Sector. Design and application of indicators" (SOScom) [PID2020-113011RB-I00] funded by the State Program for R+D+i Oriented to the Challenges of Society 2020 of the Ministry of Science and Innovation. Researcher of the Interdisciplinary Group for Studies in Communication, Politics, and Social Change (COMPOLÍTICAS). Founding member of the Research Network on Community, Alternative, and Participatory Communication (RICCAP). Here searches communication, journalism, community media, social advertising, NGOs, social movements, techno-politics, digital democracy, and deliberative democracy.

jcandon@us.es

Índice H: 17

Orcid ID: <http://orcid.org/0000-0003-1070-4987>

Scopus ID: <http://www.scopus.com/authid/detail.url?authorId=55579684800>

Google Scholar: <https://scholar.google.es/citations?user=AnhdNt0AAAAJ&hl=es&oi=ao>

ResearchGate: <https://www.researchgate.net/profile/Jose-Candon-Mena>

Academia.edu: <https://us.academia.edu/JoseCandonMena>

David Montero-Sánchez

Universidad de Sevilla

David Montero Sánchez holds a Ph.D. from the University of Bath (UK) and is a lecturer and researcher in the Department of Journalism I at the Universidad de Sevilla. He is a member of the Interdisciplinary Group for Studies in Communication, Politics, and Social Change (COMPOLITICAS, <https://compoliticass.org/>), where he coordinates the research line in Visual Studies and Image Criticism. He has published the monograph *Thinking Images. The Essay Film as a Dialogic Form in European Cinema* (Peter Lang, 2012), and is the author of several articles on visual culture, film essays, political film, and participatory cinema in international publications including *Media, Culture and Society* (Sage), *Studies in French Cinema* (Intellect), and *Global Media and Communication* (Sage), among others.

davidmontero@us.es

Índice H: 8

Orcid ID: <https://orcid.org/0000-0003-2937-0438>

Google Scholar: <https://scholar.google.es/citations?user=1G-cld0AAAAJ&hl=es>

ResearchGate: <https://www.researchgate.net/profile/David-Sanchez-55>