Think globally, act locally: mapping the free-culture movement in a hybrid media system

Piensa globalmente, actúa localmente: mapeo de la cultura libre en un sistema mediático híbrido

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Abstract

From the nineties, the Internet has been providing new political hybrid action forms. At the same time, some communities make a disruptive use of technologies aiming to subvert network power relationships at the current capitalized and centralized cyberspace. Addressing a collaborative mapping, we identified 290 free culture communities in Spain. Their characteristics suggest the relevance of offline spaces and local areas to deliberate, propose and perform political participation towards a neutral, centralised and free Internet.

Resumen

Desde los años noventa, el ciberespacio ha propuesto formas acción política híbrida. Asimismo, algunos colectivos realizan un uso disruptivo de las tecnologías para subvertir las relaciones de poder en la Red. Mediante un mapeo colaborativo, identificamos 290 grupos relacionados con la cultura libre en España. Sus características sugieren la relevancia de los espacios offline y de los territorios locales para deliberar y activarse políticamente a favor de un Internet libre.

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Palabras clave

Cultura libre, sistema mediático, ciberespacio, colectivos sociales.

Keywords

Free culture, media system, ciberspace, grassroots movements.

Summary

Sumario

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1. Introduction

Since the nineties, the Internet has been providing new opportunities for contemporary social movements, which have diversified their political action repertoires. Activism currently unfolds in a hybrid ecosystem where increasingly sophisticated technologies serve political action in various forms (Chadwick, 2007, 2013; Treré, 2019). The Spanish 15M movement, but also Occupy Wall Street, the Egyptian Revolution, and the Arab Spring have mobilized citizens in the streets and squares of several cities while spreading their message and coordinating the protest through electronic platforms (Castells, 2012; Chadwick, 2012; Gerbaudo, 2012; Juris, 2012a).

Online platforms and electronic devices have thus reconceptualized participation and the contemporary public sphere (Carty, 2013). From this awareness of technology as an intrinsically social element comes the emergence of the interest of social science research in technopolitics, focused on understanding the relationships of the new modes of production, distribution, and consumption with political, social and civil organization within the broader context of global capitalism in the Information Age (Sádaba & Gordo, 2011; Sierra, 2013; Toret et al., 2013).

In this sense, free software, peer-to-peer networks, mesh networks, encryption software or Creative Commons content offer alternative positions from which to foster freedom and autonomy on the Internet and therefore to change the power imbalances caused by business monopolies in cyberspace (Carr, 2008; Lyon, 2015). Among these forms of political participation, some of the most frequently mentioned examples are the Free Software Foundation, Pretty Good Privacy, the Mozilla Foundation or Wikimedia (Benkler, 2006; Kelty, 2008; Leistert, 2012; Stallman, 2004).

In Spain, previously free culture organizations such as the Free Culture and Digital Commons Movement, Nolesvotes, and Anonymous infiuenced the 15M (Fuster Morell, 2012). In their article on technopolitics and a North-South dialog, Treré & Barranquero (2018) highlight the 15M as one of the social phenomena that has generated major significance in the connection between politics and technology, subsequently crystallized into political formations such as Podemos or the X Party.

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Against this background, we reflect here on the relevance of online and physical spaces in the free culture movement in Spain in order to provide an empiric contribution of Spanish technopolitical communities years after the 15M mobilizations. Given global scope of the hybrid media system, we approach the possibilities of citizens to become involved, from local territories, in political protests directly connected with the power imbalance in cyberspace (Castells, 2008).

To reach this goal, we provide a map of the Spanish groups related to peer production and common goods on the Internet, then we discuss with these communities the relevance of offline spaces and their use of virtual platforms to communicate and coordinate their actions. The connection between the traditional spaces of activism and the new virtual spheres places this research within the context of the hybrid media system, where the use of technologies to build a repertoire of collective action is complex and ambivalent (Chadwick, 2013; Treré, 2019).

Technologies not only facilitate offline mobilization, they also generate more powerful and sophisticated combinations within the sphere of activism (Treré & Barranquero, 2018). Digital Resistances cartography aims to be useful for extracting data for academic purposes and fostering new ways of collaboration among citizens and mapped organizations, which are an explicit manifestation of the interrelationship between information and communication technologies, and contemporary society.

1.1 The political significance of the free culture movement

The emergence of the Internet and subsequently of the social media has attracted intense interest in the implications of new technologies for politics. Since the nineties, a number of scholars and activists have been considering that cyberspace can potentially transform the civic engagement and the relation between institutional politics and citizenship (Dahlberg & Siapera, 2007). More specifically, given that decentralization and open development have characterized the electronic space, it is seen as promoting freedom and autonomy for Internet users (Kelty, 2008; Lessig, 2004).

Nonetheless, the possibility offered by the Internet for a radical democracy mediated by the digital sphere has been critically analysed,

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especially in the last decade. In general terms, exploiting information has become the main economic activity of several companies that extract personal data generated by the interactions of Internet users in the social media (Fuchs & Trottier, 2015). Technological corporations manage this data for commercial purposes, i.e., for the purposes of creating and publishing targeted advertising in their electronic spaces (Christl & Spiekermann, 2016; van Dijck, 2014). In this context of datafication and algorithm-based decision making, Internet users can only partially be aware of this scenario, since they do not usually know which data is gathered and how the algorithms that classified online behavior are designed (Fuchs, 2014; McChesney, 2015).

Several authors have underscored the significance of this online context, which is reproducing the power dynamics of the capitalist and neoliberal offline world (Mosco, 2014; Sassen, 2003). Cyberspace entails power imbalances in the relationship between Internet users and the owners of social media platforms. Citizens are subject to surveillance practices on the Internet. Furthermore, some private enterprises control online information flows, accumulate data sets in their servers, and design algorithms that will decide which content is relevant in their web pages (Castells, 2008; Pariser, 2011). This entire background illustrates the political and economic significance of information and communication technologies in the present times.

Most of the online platforms in which people participate belong to a few companies such as Google, Apple, Facebook, Amazon, and Microsoft. These corporations therefore not only hoard economic resources, but they also concentrate political power when their social media are used for civic action and debate, as well as when they maintain collaborative partnerships with governments, especially in the United States (Christl & Spiekermann, 2016; Mattelart and Vitalis, 2015). These companies are part of a group of "global giants" of the media industry that have expanded and consolidated over the past decades. Their power in economic, political, and symbolic terms makes them a vital object of study to understand how these corporations influence contemporary societies at a global, regional, and local level (Birkinbine, Gómez, & Wasko, 2016).

Nevertheless, according to authors like Castells (2008), civil society always can promote strategies and plans to resist unequal power relations. It

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is still possible to find tools to set up spaces of autonomy, initiatives to defend the principles of Internet freedom, and shared decision-making processes. Thus, free culture interweaves with technopolitics when it proposes to build social alternatives to the contemporary capitalist context:

> The movements in favor of free software or open source represent contemporary materializations of an extreme politicization of new technologies where the object of struggle and conflict is no longer a labor or trade-union issue, not even an aspect of ecological life or gender relations, but the very place of technology as the center of political coexistence (Sádaba & Gordo, 2011, p.5).

One of the most widespread examples of this technopolitical participation is free software movement. Some researchers have explored it as a new form of political action since it allows citizens to analyse, modify, and share the source code, and therefore to control the online sphere in which they are interacting (Benkler, 2003; Kelty, 2008; Stallman, 2004). Free culture struggles also include: participation in peer-to-peer networks and blockchain technologies to enhance the decentralization of the Internet (De Filippi & Hassan, 2016); collaboration in mesh networks to keep independence on commercial telecommunications companies (Antoniadis, 2016); the use of encryption software to protect the privacy of communications; (Leistert, 2012) and the creation of Creative Commons content to promote citizen's access to knowledge (Benkler, 2003).

In Spain, the 15M movement proposed a critical discussion on the political significance of the use of specific platforms for collective action, as explained by Castells (2012, p. 175): "However, in general, the movement depended mainly on existing commercial platforms. In this way, activists were vulnerable to legal requirements to obtain information about the tweets, which violated the privacy of users with potentially serious consequences." Furthermore, Fuster Morell (2012) stated that the Free Culture and Digital Commons Movement mobilized for 15M protests, and Anonymous and Nolesvotes, which were directly linked with free culture demands, organized the initial demonstration.

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Specifically, Nolesvotes was a boycott campaign against the parties that supported the Sinde Law. This rule proposed to regulate forms of online knowledge sharing with several measures, such as shutting down websites violating intellectual property rights (Moreno-Caballud, 2013). Anonymous, Hacktivistas, and Red Sostenible were some of the global-justice hacktivist groups that contributed to this political action against the Spanish legislation (Haro Barba & Sampedro Blanco, 2001). Autonomous organizations are thus largely organized through networks and generate media visibility on specific political issues (Sampedro Blanco, 2005).

These manifestations share the common values of interest in technology, subversion of mercantilist logic in their work, freedom of code, and collective creation (Himanen, 2002). Technopolitics in Spain has transferred hacker ethics to its ordinary activities to demonstrate the intrinsic relationship between online and offline spaces, as well as between society and the new information and communication technologies (Toret et al., 2015; Treré & Barranquero, 2018). Within contemporary capitalist development in the Information Age, the digital commons raise a subversive political positioning, in which new digital resources are produced in a collaborative and common manner (Ostrom, 1990; Benkler, 2006).

These examples of technopolitical participation are thus creating political spaces and designing tools to weigh on the power imbalances in the network sphere. Academia should examine them to identify how these alternative positions originating in civil society can challenge the business monopolies and forms information control established on the Internet, which has experienced a process of growing commodification and concentration in a neoliberal and capitalist context (Carr, 2008; Lyon, 2015).

1.2 Hybrid repertoires of political action

In the last decades, contemporary social moments were characterized by organizations' use of digital media and a global-justice perspective in their demands (Juris, 2012a, 2012b). In the nineties, the Zapatista National Liberation Army (EZLN), mobilizations against The World Trade Organization (WTO) in Seattle, and the J18 anti-globalization protests used social media to spread their discourse, provide organizational information, and generate

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a coordinated network of supporters while activist occupied physical spaces as a part of their political-action repertoires (Chadwick, 2007; Jordan & Taylor, 2004). Later global-justice protests, such as Occupy Wall Street, the Egyptian Revolution, the Arab Spring, and 15M in Spain have inherited both a cross-cutting discourse and electronic strategies to coordinate their activities and convey their messages (Chadwick, 2012; McNutt, 2014; Mercea, 2013; Theocharis, Lowe, van Deth, & García-Albacete, 2014).

Similarly, the free culture movement has experimented political action repertoires in both online and offline spaces, a clear manifestation of the hybrid system in which they perform their repertories of collective action (Treré, 2019). Creative Commons projects, free software communities, and hacktivist groups organize multiple Internet users cooperating for single objectives, such as peer production of free knowledge, liberating the code, protecting privacy, or protests against technopolitical issues (Benkler, 2003; Coleman, 2015; Kelty, 2008). For instance, communities against the Spanish Sinde Law concentrated their political activity on cyberspace (Haro Barba & Sampedro Blanco, 2001).

The production of common goods is not only the commitment of hackerspaces, makerspaces, fab labs, citizen labs, media labs, and co-working places, but also of specific events such as hackathons, workshops, and meetups. These projects are settled in local physical spaces where their participants experiment with free technologies, work with software, and manufacture physical hardware (Maxigas, 2012; Slatter & Howard, 2013). Guifi.net is a wireless telecommunications community network born in Catalonia. The community manages the infrastructure through the installation of nodes connected to an open network (Antoniadis, 2016; Giovanella, 2016; Padilla, 2012).

New relations between the online and the offline spheres have raised academic interest around the possibilities of engagement in both spaces, the characteristics of each typology of political action, and the influence of traditional forms of political protest on new expressions of participation on the Internet (Gibson & Cantijoch, 2013). Technologies generate spaces for sharing knowledge, meeting online, managing offline activities, and coordinating large-scale action networks with less economic efforts and time-consuming processes (Bennett & Segerberg, 2012; Ellison, Steinfield, & Lampe, 2010; Stoecker, 2002). Juris (2012a) describes this logic of networking as geared toward decentralized communication, horizontal connections among multiple communities, and the open circulation of knowledge and information.

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Linked with physical spaces, the logic of aggregation offers more visible forms of protest and facilitates the articulation of a homogeneous set of demands, visions, and goals (Juris, 2012a). Physical mobilization strengthens ties among activists and consequently fosters the political engagement of members of offline protests. In other words, although social-media platforms provide multiple communication opportunities, online participation does not always have a effect on political activities outside the Internet (Gibson & McAllister, 2013; Stoecker, 2002; Vissers & Stolle, 2014). In general terms, the personal connections among participants contribute to mobilizing around political action (Bourdieu, 1997; Putnam, 2003).

Contemporary activism thus develops in a hybrid media system, where there is a continuous interaction between old and new political logics and where power becomes more fragmented, ambivalent, dispersed, and plural. The diversity of the subjects generates a complex and cross-cutting repertoire of action attempting to affect both the virtual and the physical spheres. In this scenario, activists use, appropriate, or abandon social networking sites in order to adapt technologies to their specific objectives (Chadwick, 2013; Treré, 2019).

2. Methodology

This research aims to contribute to the debate on online and offline participation in the free culture movement in Spain. Additionally, we propose to address the following research questions: a) What are the Spanish local initiatives related to free culture movement? b) What is the relationship between online and offline spaces in their political activity? c) What is the significance of the local arena for these communities focused on digital activities? For these overarching objectives and questions, we designed a method in two parallel steps: a) a collaborative cartography of 290 free culture organizations, and b) participatory interviews with 38 of the previously mapped communities.

First, we designed an online map entitled Digital Resistances (*Resistencias digitales)* with Ushahidi, a free software tool designed for collaborative mapping[1]. We generated a graphic representation, which

1 The license (GNU Lesser General Public License) can be viewed at Github, https://github.com/ushahidi, accessed April 8, 2019.

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locates specific information in a delimited area (Duxbury, 2015; Freitas, 2015; Martínez Illa and Mendoza Hernández, 2011). In the social sciences, mapping is "a process of collecting, recording, analyzing, and synthesizing information to describe the cultural resources, networks, links, and patterns of usage of a given community or group." (Stewart, 2010, p. 8).

Collaborative mapping also proposes the participation of the community, which generally belongs to a different context from the academic and corporate institutions. Cooperation allows mapped groups to take control of the research method and to define themselves (Duxbury, 2015; Freitas, 2015; Sletto, Bryan, Torrado, Hale, and Barry, 2013; Stewart, 2010). In connection with this concept, we launched a public map with a survey including different questions about identification data, essential characteristics, strategies, and tools.

This research method has been used in a variety of investigations to describe social relations and interactions (Bingham-Hall & Law, 2015), to delve into specific communities and population sectors (Arcila Garrido & López Sánchez, 2011), to identify cultural projects (Martínez Illa & Mendoza Hernández, 2011), to develop concrete citizen projects (Carrasco-Arroyo, 2013), etc. In Spain, Barranquero & Montero (2015) use Ushahidi to map the third sector of communication in the country.

Through a snowball technique, we identified 290 free culture communities that expressed support to values such as peer production of cultural content, free hardware manufacturing, and free software coding. We selected a broad sample that included different types of free culture projects. We asked groups to complete the questionnaire and share the map. As territory is an essential condition to place information on a map, we only selected groups partially subsidized by the Spanish state and/or in which the latter is a stakeholder.

Once the communities completed the survey, the map placed them on the main page. The form provided four questions related to territorial limits and the scope of the groups:

1. "Does the organization have a physical space in the Spanish state?" This open question asked the community to add their head office or their usual meeting place if they had one.

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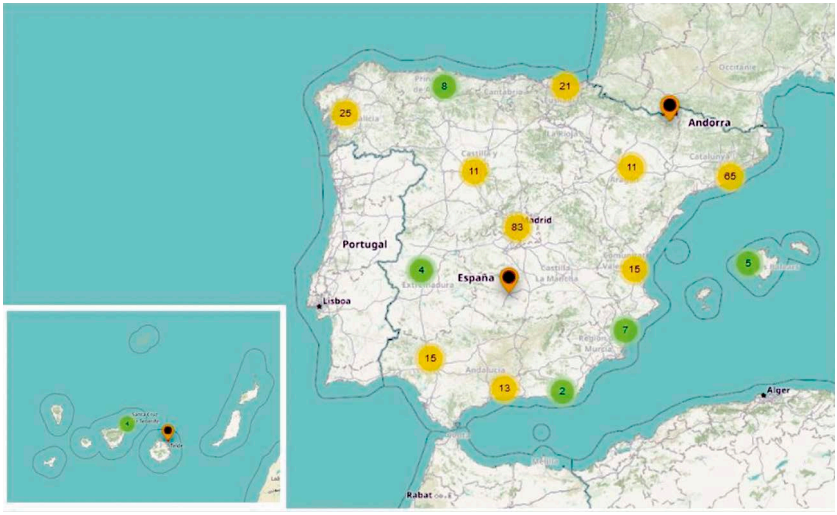
2. "If possible, find and point to the location of the organization on the map," which included a search engine for the specific area on OpenStreetMap.

3. "In which area are the activities of the organization usually carried out?" This closed-ended single-answer question had seven possible choices: a) Municipal, b) Provincial, c) Regional, d) State, e) European, f) International, and d) Not Answered.

4. "How does the organization carry out its activities?" This closed question presented four options: a) Only online, b) Both online and offline, c) Only offline, and d) Not Answered.

FIGURE 1. Free culture communities in Spain



Source: Screenshot extracted from resistenciasdigitales.ushahidi.io.

The second step of this methodological design consisted in interviewing communities placed on the map to discuss the quantitative data extracted from the survey questions. This technique was closer to

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participatory-action research as interviewees of the study were informers as well as auditors of the previous results. In this article we thus address an interpretation of numerical data through the logic of the mapped communities themselves in order to avoid the hierarchy between researchers and objects of study (Ander Egg, 2003; Contreras, 2002; Lima Santos, 1983; Ortí Mata & Díaz Velázquez, 2012).

We selected 38 communities from Madrid, Catalonia, Valencia, Castile and León, and Castilla La Mancha through an intentional sampling method. This type of non-probability procedure allowed us to select a diverse sample in terms of the variables proposed in the questionnaire. We analyzed groups located in smaller and larger towns (e.g., Cuenta and Madrid). We selected communities that worked only online, both online and offline, and only offline (e.g., Aeropython, Akelarre cyberfeminista, and Made Makerspace Barcelona). Finally, we also considered communities that had a local, regional, national, and/or international scope (e.g., FabLab Valencia, Drupalcal, Wikimedia España, and CIVICS). The specific groups are shown in Table 1. In the results section, we replaced the names of the communities with a random number to protect the privacy of the organizations.

The durations of the interviews fluctuated between 18 and 161 minutes, and the number of participants per community ranged from 1 to 8. All the research actions were conducted in offline spaces and were similarly structured. We first presented the research and negotiated with them the conditions of the study, e.g., the anonymity of their responses. We then introduced a document with the quantitative data of the previous questions. Finally, we asked them to interpret the given document to evaluate the data and explain it.

We collected cartographic data from February 2018 to July 2018 and conducted the interviews from September 2018 to December 2018. These two methods provided quantitative and qualitative empirical data of the same object of study and facilitated complementary evidence to answer the research questions and to reach the objective of this investigation (Flick, 2014; Charmaz, 2006; Mendizábal, 2006; Ruiz Olabuénaga, 2012). In the next section, we present the results we collected through the methods above.

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TABLE 1. Intentional sample of resistance communities

COMMUNITY	LOCATION	DATA	DURATION
Aeropython	Barcelona (Catalonia)	November 2018	86
Akelarre Ciberfeminista	Valladolid (Castile and León)	September 2018	159
Asociación Blockchain Catalunya	Barcelona (Catalonia)	November 2018	87
Asociación gvSIG	Valencia (Valencia)	November 2018	60
Asociación Hackerspace Valencia	Valencia (Valencia)	November 2018	86
Autofabricantes	Barcelona (Catalonia)	November 2018	70
Avfloss	Madrid (Madrid)	October 2018	133
Barcelona Bitcoin Community	Barcelona (Catalonia)	November 2018	87
Barcelona Free Software	Barcelona (Catalonia)	December 2018	61
Bit:LAV	Valladolid (Castile and León)	September 2018	159
Caliu	Barcelona (Catalonia)	December 2018	61
CCCBLab	Barcelona (Catalonia)	December 2018	122
Colectic SCCL	Barcelona (Catalonia)	December 2018	62
Cuarto Propio en Wikipedia	Madrid (Madrid)	October 2018	115
Drupalcat	Barcelona (Catalonia)	December 2018	56
Educaires	Barcelona (Catalonia)	December 2018	60
Eticas Foundation	Barcelona (Catalonia)	November 2018	61
Expansió de la Xarxa Oberta (eXO)	Barcelona (Catalonia)	December 2018	163
FabLab Cuenca	Cuenca (Castilla La mancha)	November 2018	92
FabLab Valencia	Alboraya (Valencia)	November 2018	54
Hackers at UPC	Barcelona (Catalonia)	November 2018	63
i-LabSo SCCL	Barcelona (Catalonia)	November 2018	56
la_bekka	Madrid (Madrid)	October 2018	127
Llefi@Net	Badalona (Catalonia)	November 2018	120
Made Makerspace Barcelona	Barcelona (Catalonia)	November 2018	61
Makers UPV	Valencia (Valencia)	November 2018	113
Ondula	Madrid (Madrid)	October 2018	66
Panorama 180	Barcelona (Catalonia)	November 2018	88
pyBCN	Barcelona (Catalonia)	November 2018	78
Pybonacci	Barcelona (Catalonia)	November 2018	86
pyladiesBCN	Barcelona (Catalonia)	November 2018	78
Python España	Barcelona (Catalonia)	November 2018	86
Som Connexió	El Prat de Llobregat (Catalonia)	December 2018	71
Valencia TechHub	Valencia (Valencia)	November 2018	86
ValenciaJS	Valencia (Valencia)	November 2018	54
Vivero de iniciativas ciudadanas (CIVICS)	Madrid (Madrid)	October 2018	18
Wikimedia España	Valladolid (Castile and León)	September 2018	159

3. Results and findings

3.1 Location of the communities

Of the mapped communities, 92% attended offline spaces (Table 2). Places with the most active free culture movement were cities with more

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than 50,000 inhabitants. Madrid and Barcelona have 62 and 49 initiatives, respectively, followed by Valencia (12), Seville (10), Valladolid (10), Donostia (9) and Zaragoza (8). All were part of the 15 municipalities with the largest population in Spain, although minor population towns and villages placed free culture projects too. With less than 50,000 inhabitants, Valls (Catalonia), Nigrán (Galicia), and San Pedro del Pinatar (Murcia) spotted spaces devoted to spreading and supporting free culture, free software, and privacy protection, namely, Hacklabvalls, A Casa Colorida, and Laboratorio de Artesanía Digital.

We also identified some initiatives developed in rural areas with less than 5,000 residents. Agrolab was situated in Perales de Tajuña and focused on the construction of free-hardware meteorological stations for cooperative gardens in the suburbs of Madrid. Likewise, the headquarters of Fundació Guifi.net was in the Catalan municipality of Gurb. This mesh-network project aimed to give Internet access to rural areas that have been overlooked by telecommunications companies as they are not profitable for commercial purposes. Asociación Ribaguifi - Eresué 2.0 was also a wireless community working for the development of an open, free, and neutral network in small towns in the Aragonese rural region. The collective was born in a village of 45 inhabitants (Eresué). Therefore, despite the tendency to concentrate these initiatives in cities with larger populations, there are free culture groups in a few smaller localities.

When we classified the communities around their home region, territories with the higher number of initiatives were ranked as follows: Madrid, Catalonia, Andalusia, Galicia, Basque Country, and Castile and León (Table 2). As we expected, places with a larger population have a more significant number of communities. It is also worth noting, however, the frequency of use of the Internet by the inhabitants of an Autonomous Community was not related to the number of initiatives created and managed by that population[2]. There was one particularly significant case: Galicia was one of the places with the most projects, despite its also presenting a higher digital divide in

2 The Spearman correlation test determined that there is no significant correlation between the frequent use of the Internet by an Autonomous Community and the number of initiatives in it. However, the Spearman test presented a practical significance regarding the association between the number of groups and the population of the region with a correlation level of 0.897 ($p < 0.01$).

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the Spanish state (Table 2). Castile and León featured a similar situation since the region placed 14 initiatives although use of the Internet was less frequent than the Spanish average[3].

TABLE 2. Autonomous Community, initiatives, demographics, and Internet connection data

REGION	COLLECTIVES	POPULATION	USE OF THE INTERNET (%)
Andalusia	28	8379820	78.2
Aragon	10	1308750	82.4
Asturias	5	1034960	77
Balearics Islands	5	1115999	85.7
Basque Country	18	2194158	81.8
Canary Islands	4	2108121	80.3
Cantabria	2	580295	77.3
Castilla - La Mancha	4	2031479	73.3
Castile and Léon	14	2425801	76.9
Catalonia	65	7555830	81.8
Extremadura	5	1079920	76
Galicia	22	2708339	72.1
La Rioja	1	315381	75.8
Madrid	66	6507184	85.5
Murcia	3	1470273	81.1
Navarra	0	643234	82.1
Valencia	16	4941509	80.4
Ceuta	0	84959	81.4
Melilla	0	86120	82.5
TOTAL	**268**	**46572132**	**80**

Source: Data extracted from National Institute of Statistics, Spain[4]

3 The National Institute of Statistics describes frequent use of the Internet with the following statement: "People who have used the Internet at least once a week in the last three months"

4 See "Official population of Spanish municipalities data: Municipal Register" by National Institute of Statistics, at http://www.ine.es/dyngs/INEbase/es/operacion.htm?c=Estadistica_C&cid=1254736177011&menu=resultados&secc=1254736195458&idp=1254734710990 accessed April 5, 2019; and "Survey on equipment and use of information and communication technologies in homes" by National Institute of Statistics, at http://www.ine.es/dyngs/INEbase/es/operacion.htm?c=Estadistica_C&cid=1254736176741&menu=resultados&idp=1254735976608, accessed April 5, 2019.

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Along with the groups that designated a reference location, some groups stated that they did not have a specific place in the territory. For instance, Zoohaus was an organization dedicated to the study of collective intelligence, citizen participation, and the urban reactivation of the public space. It claimed to have been born in Madrid and to distribute its activity in Bilbao, Berlin, Mexico City, and A Corunna. Similarly, CivicWise, focused on civic empowerment and participatory urbanism, changed its location depending on the stage of the project.

Other international initiatives had participation from Spain without a reference location in the country. Mozilla and P2P foundations illustrated this example with both indicating that they had headquarters outside the Spanish borders, in Amsterdam and Mountain View, respectively. We interpreted this circumstance as a manifestation of the distributed nature of the cyberspace, which facilitates the coordination and development of projects without spatial limits.

A more significant share of the initiatives worked in a delimited space. To a large extent, territorial limitation coincided with the municipalities where the initiatives were located (Figure 2). More than one-third of the groups showed an exclusively local interest or focused their action on a city and their peripheral localities. Llefi@Net, with the motto "Fem barri, fem xarxa!" ("We build the neighborhood; we build the network!"), fostered the development of socio-technological communication spaces in the district of Badalona (Catalonia). Likewise, Desdelamina was a citizen network that addressed online and offline activities for the La Mina neighborhood (in Sant Adrià de Besòs, Catalonia).

Cultural centers, makerspaces, and citizen labs attracted local or provincial members for deploying their activities in a particular physical location. La Remolacha HakLab (Zaragoza), Asociación Hackerspace (Valencia), Makespace (Madrid), Factoría Cívica (Santa Cruz de Tenerife), and Fablab Salamanca (Salamanca) were part of this classification. Some specific cities also had copyleft film festivals, such as Valladolid Cine Creative Commons or Cine CC Donostia.

Finally, some initiatives organized meetings for inhabitants with common interests, such as cryptography, open-source programming languages, free and open-source content management systems, free

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software environment for statistical computing, etc. We identified Sevilla R, Valladolid Blockchain, PHP Cáceres, PyLadies Madrid, Joomla! Tenerife, Canary Python (La Laguna), among others.

The region was the sectional area of activity of almost 20% of the mapped initiatives, including free culture projects for the promotion and visibility of minority languages in Spain. In these cases, language was of priority relevance, so communities did not limit their activity to a strict administrative territory. For instance, Proxecto Trasno translated free software to Galician and its main area of action was linked to this Autonomous Community. However, there were other spaces outside these regional borders where the language was also a factor, such as towns and villages bordering on other regions (e.g., Castile and León) or the Latin American districts where Galician people had historically migrated.

In the interviews, communities connected the location results with the previous data, which described the relevance of common physical spaces for group activity. The tendency was to meet in the offline sphere, but the organization had to limit its scope of action to places that where there were no difficulties in the mobility of those who belonged to them. Logically, communities gathered around specific interests preferred closer locations. For instance, there was a single KDE Spain (KDE is an international free software community), but it was subdivided into KDE Seville, KDE Valencia, and others.

The groups also expressed their goal to implement social-transformation practices in their closest social environment, such as the municipality or the neighborhood. Although communities declared that the Internet remained a sphere for connecting with similar projects and finding multiple resources, their participation was concentrated in the closest environment so they could interact with it and weigh directly on it at the technopolitical level. Their commitment to improve the local context was tied in with a more general technopolitical position:

> Anyone who has tried to change the world has been ultimately punched in the face. The lesson is, 'Think globally, act locally.' You can't act globally, because you are stopped by the powers that be. At the end of the day, you participate

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> where you can have a minimum of impact, which is usually in local places. (Interview 16).

At the national level, we mainly found nonprofit entities, cooperatives, and music bands. Quepo and Montera34 were cooperatives that based their economy on the production of Creative Commons content and free software projects across the territory. The Spanish Association of Drupal and Python Spain were also included among initiatives of national scope, dedicated to promoting the Drupal content-management system and to free programming language, respectively. Finally, the Insolenzia and Crudo rock bands published their music under "copyleft" rights for free download on their respective websites.[5]

European initiatives represented the lowest percentage of the actions that had been mapped (Figure 2). OpenExpo Europe was a professional congress on the topic of open-source and free software held in Gijón in 2018. International communities represented 21.4% of the sample, so the transcontinental scope was the second most frequent action area after the municipal one. This category included Spanish online media covering privacy protection, development of free software and hardware, and blockchain applications (e.g., JuegosRobotica, Libre FM, Bitácora de Ciberseguridad, or Compilando Podcast).

Communities linked the expansion of their influence ratio with the use of electronic tools that could connect all their members under identical conditions. Nonetheless, several interviewees described examples of unsuccessful hybrid organizational structures where communities prioritized offline meetings over online platforms because the former placed those who could only connect online at a disadvantage. The rationale for this was that "[t]he energy of the event and of seeing each other [was] so strong" (Interview 4). In one of the interviews, the dichotomy was expressed as follows:

> A few years ago there was a group called HTMLSpain. As its name indicates, it is geared more toward a statewide

5 See: http://www.somoscrudo.com/discografia/ and http://www.insolenzia.es/descargas, accessed April 10, 2019.

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> scope and toward online sessions, especially with YouTube live streaming. There were people from all cities. But a new organizer replaced the previous one, and he began to propose local events. The organization then lost its essential meaning because other similar organizations cover local issues. If it had a national scope, there was not much sense in offline meetings (Interview 13).

Generally speaking, a geographic scope is related to economic and human resources. A greater share of participation also entailed more extensive coordination efforts and a more significant financial investment because a national, European, or international territory meant more complex organizational structures and forms of coordination. Some of the mapped communities received funding from international institutions to carry out cooperation projects in other continents, (America or Africa, for instance). Some groups had the economic resources to finance their participants' trips to specific events or meetings in foreign countries or other Spanish cities.

Additionally, we should remember that Spanish is positioned as the third most spoken language on the Internet (after English and Chinese) with more than 500 million Spanish-speaking Internet users[6]. The popularity of the language facilitated the emergence of international projects formed in Spanish-speaking countries or regions, such as Mozilla Hispano, the Latin American CivicWise Network, or Cuarto Propio en Wikipedia. This latter collective aims to close the gender gap in Wikipedia producing content in Spanish. As indicated by one of the interviewees to express the connection between state groups and similar Latin American communities located in Mexico, Argentina, Uruguay, or Colombia, for instance, "Home is where the language is" (Interview 4).

Transnational projects amounted to one-fourth of the total. A smaller area of infiuence thus conveys higher statistical support. Several groups declared, however, that they had more than a single scope of action, but that it fiuctuated depending on specific circumstances, such as financial support:

6 See https://www.internetworldstats.com/, accessed April 10, 2019.

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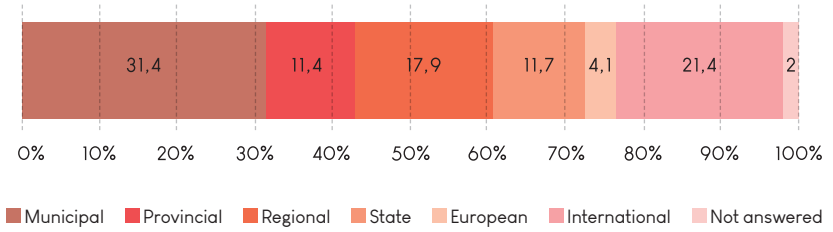
> Thanks to globalization there are many common problems, but there are also many local problems. So I think it makes a lot of sense that the most common choice in the survey is municipal and the second one is international . . . In our case, that's the way it is. It seems that digital platforms facilitate that (Interview 29).

FIGURE 2. Types of area in which organization activities are usually carried out (%)



3.2 Online and offline activity spaces

Less than 10% of the mapped groups managed their participation exclusively in cyberspace. This category included: online media providing information on free software and hardware, etc. (e.g., Linuxadictos and Robots para niños); radios producing content under a Creative Commons license (e.g., Free FM, CCRadio.es, and La Noche del Hombre Lobo); websites publishing free download material (e.g., RebeldeMule); and online forums on specific technopolitical interests (e.g., SpainLabs and Somos Binarios).

During the interviews, the communities considered the Internet as the ideal scenario to maintain contact with other related groups and participants, especially when people could only be part of the group remotely. "It is complicated to coincide in offline spaces. Synchronizing is very difficult. We are currently avoiding offline presence. Our focus is on online chats because it's easier to meet" (Interview 3). For this reason, the interviewed groups understood that the largest communities (i.e., international or national) would be more likely to adopt online dynamics.

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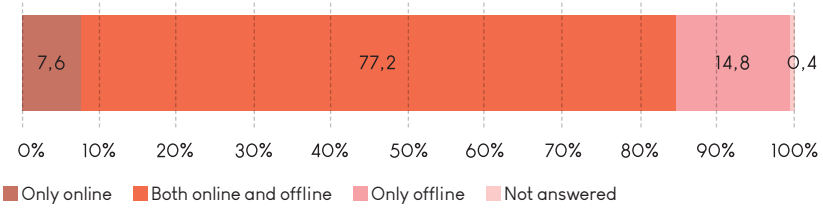
In contrast, 14.7% of the communities developed their activities only in physical spaces (Figure 3). These face-to-face projects were mostly makerspaces and hacklabs devoted to promoting technological events such as Ateneu Candela and Hirikilabs. The communities working on social transformation at the municipal level understood the need to generate an impact in their geographical reference areas through offline meetings. Additionally, the groups that reported participating only in physical spaces admitted their difficulty of working online due to lack of human resources:

> Many people have asked us why we don't offer online classes. That would be cool, but we are giving the best of ourselves, and we still can't launch a platform and manage its activity. People contact us on Facebook, on Instagram, on the website, and by email. I am freaking out just thinking about it. (Interview 25)

To deploy their activities, 77.2% of the initiatives preferred using hybrid forms. For example, The Open Bacteria Project was made up of biology, mathematics and computer students who attended meetings to set up an open repository about bacteria colonies. Mapeado Colaborativo developed OpenStreetMap projects by visiting Zaragoza, where its participants lived, that is, a map that identifies disability barriers in the city. Likewise, Libertar.io offered courses in both offline and online versions (Figure 3).

FIGURE 3. How the organization carries out its activities (%)



The groups definitely admitted preferring hybrid models of action, where online platforms complemented the spaces of personal exchange, not

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only because sometimes the initiatives needed concrete means to develop their projects (for instance, when they involved digital manufacturing), but because working and communication dynamics in these places were qualitatively different from online spaces. In some cases, they considered physical presence as a sign of group activity. "When we are not very active, we are chatting, and we remain online. However, people consider that the community is active when there are meetups and we meet face-to-face although we organize the meetings online." (Interview 1)

Even with a wide range of new electronic tools, offline meetings facilitated other forms of communication and knowledge sharing:

> At the end of the day, exclusively digital presence is not worth it. You have to see each other, you have to meet, you have to occupy spaces. 'Occupy' in the sense of inhabiting common spaces where we can see each other, where we can collaborate. Because the digital sphere allows fast connections and synergies, but there comes a time when it is exhausted. People have to meet. (Interview 7)

Cyber-connected and physical spaces were increasingly interrelated, and both environments were indispensable for some communities:

> I also have to say that the divide between digital and face-to-face meetings is something that bothers us a lot. We told you, we don't understand that they can be separated, because if the online digital networks are not based on a real network, at least potentially, they don't work. Artificial networks don't work; you have to find the previous connection in the real world, that's the one where you touch people." (Interview 28)

Offline space generated, strengthened, and expanded the community. The groups described the symbolic value of offline meeting, presence, and connection. As they stated, physical spaces facilitated sharing knowledge, developing personal connections, and exchanging

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everyday experiences. Groups were dynamized with greater simplicity in physical reference places, where there was a greater mobilization force. Communication was immediate, more humanized, and socialized. These characteristics facilitated discussion and consensus on the goals and strategies of the project. Additionally, on several occasions they interpreted these methodologies as being close to feminist perspectives: "I don't know if it is by intuition, but I believe that women tend to stay more in offline spaces. Do we, eh? The offline space seems more feminized to me." (Interview 26)

At the same time, dissemination of the initiative acquired added value in face-to-face spaces. People felt more involved in offline learning processes because online materials seemed depersonalized: "You want to see the terminal, you want to touch it, you want to see how it's built, and you want to see how someone else works with it. I have seen loads of tutorials made by guys who speak in a language I don't understand. In the end, people want to go to a physical space where you can ask the most basic questions." (Interview 15)

There was also a component of socialization in physical presence as it provided additional leisure activities: "The best option is always a party" (Interview 19). The groups expressed that organizing cultural visits and trips were conducive to better relations with the rest of those participating in the groups and to establishing personal connections with them. These activities contributed to the progress of the projects and motivated the members who otherwise received no economic benefit from their work in the community:

> We could also prepare webinars, but in principle whenever we organize a meetup, it's in a physical place. When it ends, we always stay for a beer or a meal. It is a way of networking. I have already participated in other online events where we switch off the computer at the end of the session; it is very impersonal. Offline meetups are a way to be in touch with people, to meet new people who participate in the group. They contribute more to people's engagement. I think they contribute more. (Interview 13)

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> Knowing this kind of group is also belonging to a social group. In my view, I've devoted two hours every day to respond to emails and it wasn't an added value. It's very effective, very productive, but it's not enough. (Interview 20)
>
> I do not attend online chat meetings because I always say that meetings have to be face-to-face. They can correct me if I'm wrong, but I think we only discuss the agenda in the chat. In offline places we discuss the meeting's agenda, but also, we meet our colleagues, and we talk about other stuff. It's nice to meet like-minded people with whom you have common interests. For me, it is much more enjoyable; that's why I'm always the one who insists on arranging offline meetings. (Interview 27)

4. Conclusions

This paper has attempted to identify new insights about political participation in the free culture movement. The online global environment and offline local places cannot be dissociated; they complement one another in the context of social action of a technopolitical nature. The cartography shows that technopolitics in Spain is not limited to the concrete political mobilization of the 15tM nor its later crystallization into parties such as Podemos or the X Party. On the contrary, the map shows the political relevance of the technological challenge and its response from civil society through organizations that are organized around digital-commons values and hacker ethics (Himanen, 2002; Ostrom, 1990).

On the one hand, the groups propose use of the Internet for the most efficient management of their projects. On the other hand, the face-to-face scenario contributes to strengthening personal connections among members of the community and promotes knowledge sharing among them. Thus, meetings in the offline scenario provide an environment of socialization for participants in these groups and enhance the aggregation of people with a common interest in free technologies and the digital context. This behavior traces its roots to the concept of social capital (Bourdieu, 1997; Putnam,

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2003), which proposes the transmission of political action through networks of affection. Despite the risk of fragmentation and instability of technopolitics (Sampedro, 2005), communities have demonstrated the capacity to create collective and visible spaces in the offline sphere.

Thus, the groups show a hybrid nature in line with the work of Chadwick (2013) and then Treré (2019), who adapts this new communication ecology to the field of activism. Groups can fiuctuate between the local context for social transformation and connection with similar national and international projects thanks to the possibilities of the new electronic platforms. The offline space facilitates in the communities strong personal connections and a collective identity, while online tools offer immediate forms of political action. This scenario explained that 77.2% of the groups indicated that they worked in both online and offline spheres. In the same vein, the local (31.4%) and international (21.4%) levels were their most frequent areas of infiuence.

Data shows that years after the rise of the Internet in the nineties, offline spaces for political participation are still essential (Dahlberg & Siapera, 2007; Stoecker, 2002). The hybrid system is also a relevant scenario for online social movements. Activities such as meetings on common interests describe the relationship between digital political values and their translation into civic action in physical spaces. Citizens can take advantage of makerspaces, cultural centers, and citizen labs to promote digital manufacturing and free culture projects within their local citizenry. In cyberspace, several communities of various scopes have been built around minority languages from Spain or Spanish.

Network infrastructure initiatives, located in city districts and rural areas, are consistently present in smaller regional locations if they provide free, open and neutral wireless and open optical fiber links in places that are affected by the digital divide. In this sense, the free culture movement features various scopes, and several strategies are offered to wield infiuence in cyberspace, beginning with the building of a network infrastructure independent of commercial interests. In this regard, the logic of connective action on the Internet is only possible when citizens have access to digital devices (computers and mobile phones) and are familiar with social networking spaces in everyday life (Bennett & Segerberg, 2012). Once again,

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technopolitics is manifest here as a practice that is transposed to daily political practices in order to consider which sectors of the population have access to the resources developed and distributed on the Internet (Toret et al., 2013).

Regions with less use of the Internet are occasionally more likely to implement initiatives devoted to open-source code, peer-to-peer networks, mesh networks, encryption software, or Creative Commons content. The results of this line of research open an avenue of future research on the cultural, social and political factors that could foster the deployment of free culture projects in specific regions. Generally speaking, members of academia, the administration, and civil society must explore the importance of the local arena not only as a scenario to deploy projects that will have a direct impact on communities, but also as a strategy to infiuence the current political context.

Furthermore, the map limits the sample to specific realities that do not necessarily describe the entire set of technopolitical manifestations; it does not include communities that work anonymimously in the dark web, nor other social movements such as ecologist or feminist ones, who also use electronic tools in their everyday work. A more profound ethnographic work will describe and delve into the complexity of the uses and interrelations of civil society with information and communication technologies. In a hybrid media system, technopolitics becomes a necessary framework for understanding the relationship of technological development with new forms of checks and balances both in the online and the offline sphere.

5. Bibliography

——— Ander Egg, E. (2003). *Repensando la investigacion accion participativa : comentarios y sugerencias*. Buenos Aires: Lumen.

——— Antoniadis, P. (2016). Local networks for local interactions: Four reasons why and a way forward. *First Monday*, *21*(12). Retrieved from http://firstmonday.org/ojs/index.php/fm/article/view/7123/5661

——— Arcila Garrido, M., & López Sánchez, J. A. (2011). La cartografía cultural como instrumento para la planificación y gestión cultural. *Periférica*, (12), p. 15–36.

——— Barranquero, A., & Montero, D. (2015). La elaboración de una cartografía sobre los medios del tercer sector en España. Descripción de un proceso de investigación colaborativa. *Revista Internacional de Pensamiento Político, 10*, p. 17–25.

——— Benkler, Y. (2003). Freedom in the Commons. *Duke Law Journal, 52*(1245).

---- (2006). *The Wealth of Networks: How Social Production Transforms Markets and Freedom*. New Haven: Yale University Press.

——— Bennett, W. L., & Segerberg, A. (2012). The logic of connective action: Digital media and the personalization of contentious politics. *Information, Communication & Society, 15*(5), 739–768. DOI: https://doi.org/10.1080/1369118X.2012.670661

——— Birkinbine, B., Gómez, R., & Wasko, J. (Eds.). (2016). *Global media giants*. Abingdon: Routledge.

——— Bourdieu, P. (1997). *Razones prácticas. Sobre la teoría de la acción*. Barcelona: Anagrama.

——— Bingham-Hall, J., & Law, S. (2015). Connected or informed? Local Twitter networking in a London neighborhood. *Big Data & Society, 2*(2), 205395171559745. DOI: https://doi.org/10.1177/2053951715597457

——— Carr, N. (2008). *El gran interruptor. El mundo en red, de Edison a Google*. Barcelona: Ediciones Deusto.

——— Carrasco-Arroyo, S. (2013). Cultural mapping. Hacia un sistema de información cultural territorial (SICT). *Revista Dos Puntas*, (8), p. 4–12.

——— Carty, V. (2013). New Information Communication Technologies and Grassroots Mobilization. *Information, Communication & Society, 13*(2), 155–173. DOI: https://doi.org/10.1080/13691180902915658

——— Castells, M. (2008). Comunicación, poder y contrapoder en la sociedad red (II). Los nuevos espacios de la comunicación. *Telos*, (75).

---- (2012). *Redes de indignación y esperanza*. Madrid: Alianza Editorial. DOI: https://doi.org/10.1017/CBO9781107415324.004

E-ISSN: 2173-1071 IC – Revista Científica de Información y Comunicación 16 (2019) [pp. 357-389]

IC – Revista Científica de Información y Comunicación 16 (2019) [pp. 357-389] E-ISSN: 2173-1071

———— Chadwick, A. (2007). Digital network repertoires and organizational hybridity. *Political Communication, 24*(3), 283–301. DOI: https://doi.org/10.1080/10584600701471666

---- (2012). Web 2.0: New Challenges for the Study of E-Democracy in an Era of Informational Exuberance. *Journal of Law and Policy for the Information Society, 5*(1), 45–75. DOI: https://doi.org/10.1525/sp.2007.54.1.23

---- (2013) *They Hybrid Media System*. Abingdon: Routledge. DOI: https://doi.org/10.1073/pnas.0703993104

———— Christl, W., & Spiekermann, S. (2016). *Networks of Control. A Report on Corporate Surveillance, Digital Tracking, Big Data & Privacy*. Vienna: Facultas.

———— Coleman, G. (2015). Epilogue: The State of Anonymous. In *Hacker, Hoaxer, Whistleblower, Spy. The many faces of anonymous* (pp. 401–434). New York: Verso.

———— Contreras, R. (2002). La Investigación Acción Participativa (IAP): revisando sus metodologías y sus potencialidades. In Durston, J. & Miranda, F. (Eds.), *Experiencias y metodología de la investigación participativa* (pp. 9–18). Santiago de Chile: CEPAL.

———— Dahlberg, L., & Siapera, E. (2007). Introduction: Tracing Radical Democracy and the Internet. In L. Dahlberg & E. Siapera (Eds.), *Radical Democracy and the Internet. Interrogating Theory and Practice* (pp. 1–16). London: Palgrave Macmillan.

———— De Filippi, P., & Hassan, S. (2016). Blockchain technology as a regulatory technology: From code is law to law is code. *First Monday, 21*(12). DOI: https://doi.org/http://dx.doi.org/10.5210/fm.v21i12.7113

———— Duxbury, N. (2015). Positioning Cultural Mapping in Local Planning and Development Contexts: An Introduction. *Culture and Local Governance, 5*(1), 1–7.

———— Ellison, N. B., Steinfield, C., & Lampe, C. (2010). Connection Strategies: Social Capital Implications of Facebook-enabled Communication Practices. *New Media & Society, 13*(6), 873–892. DOI: https://doi.org/10.1177/1461444810385389

Freitas, R. (2015). Cultural mapping as a development tool. *City, Culture and Society*, 1–8. DOI: https://doi.org/10.1016/j.ccs.2015.10.002

Fuchs, C. (2014). Retos para la democracia: Medios sociales y esfera pública. *Revista Telos*, 1–11.

Fuchs, C., & Trottier, D. (2015). Towards a theoretical model of social media surveillance in contemporary society. *Communications-European Journal of Communication Research, 40*(1), 113–135. DOI: https://doi.org/10.1515/commun-2014-0029

Fuster Morell, M. (2012). The Free Culture and 15M Movements in Spain: Composition, Social Networks and Synergies. *Social Movement Studies, 11*(3–4), 386–392. DOI: https://doi.org/10.1080/14742837.2012.710323

Gerbaudo, P. (2012). *Tweets and the Streets. Social media and Contemporary Activism*. London: Pluto Press. DOI: https://doi.org/10.1017/CBO9781107415324.004

Gibson, R. K., & Cantijoch, M. (2013). Conceptualizing and Measuring Participation in the Age of the Internet: Is Online Political Engagement Really Different to Offline? *The Journal of Politics, 75*(03), 701–716. DOI: https://doi.org/10.1017/S0022381613000431

Gibson, R. K., & McAllister, I. (2013). Online social ties and political engagement. *Journal of Information Technology & Politics, 10*(1), 21–34. DOI: https://doi.org/10.1080/19331681.2012.712461

Giovanella, F. (2016). Alternative rules for alternative networks? Tort law meets wireless community networks. *First Monday, 21*(12).

Haro Barba, C., & Sampedro Blanco, V. (2001). Activismo político en Red: del Movimiento por la Vivienda Digna al 15M. *Revista Teknokultura, 8*(2), 157–175. Retrieved from https://dialnet.unirioja.es/servlet/articulo?codigo=5372430

Himanen, P. (2002) *La ética del hacker y el espíritu de la Era de la información*. Barcelona: Imagino destino.

Jordan, T., & Taylor, P. (2004). *Hacktivism and Cyberwars: Rebels with a cause?* (Vol. 53). Londres: Routledge. DOI: https://doi.org/10.4324/9780203490037

E-ISSN: 2173-1071 IC – Revista Científica de Información y Comunicación 16 (2019) [pp. 357-389]

——— Juris, J. S. (2012a). Reflections on #Occupy Everywhere: Social media, public space, and emerging logics of aggregation. *American Ethnologist*, *39*(2), 259–279. DOI: https://doi.org/10.1111/j.1548-1425.2012.01362.x

---- (2012b). The New Digital Media and Activist Networking within Anti-Corporate Globalization Movements. *American Ethnologist*, *597*(1), 189–208. DOI: https://doi.org/10.1177/0002716204270338

——— Juris, J. S., Pereira, I., & Feixa, C. (2012). La globalización alternativa y los 'novísimos' movimientos sociales. *Revista Del Centro de Investigación de La Universidad La Salle*, *10*(37), 23–37.

——— Kelty, C. M. (2008). *Two bits: the cultural significance of free software*. Stanford: Duke University Press. DOI: https://doi.org/10.1111/j.1467-9655.2011.01725_19.x

——— Leistert, O. (2012). Resistance against cyber-surveillance within social movements and how surveillance adapts. *Surveillance and Society*, *9*(4), 441–456.

——— Lessig, L. (2004). *Por una cultura libre. Cómo los grandes grupos de comunicación utilizan la tecnología y la ley para clausurar la cultura y controlar la creatividad*. Madrid: Traficantes de Sueños.

——— Lima Santos, L. (1983). *La naturaleza de la Investigación-Acción*. Lima: Celats.

——— Lyon, D. (2015). The snowden stakes: Challenges for understanding surveillance today. *Surveillance and Society*, *13*(2), 139–152.

——— Martínez Illa, S., & Mendoza Hernández, R. (2011). Cartografías Culturales : Mapeo y Acción Cultural. *Periférica: Revista para el análisis de la cultura y el territorio*, *12*, 37–53.

——— Mattelart, A., & Vitalis, A. (2015). *De Orwell al cibercontrol*. Barcelona: Editorial GEDISA.

IC – Revista Científica de Información y Comunicación 16 (2019) [pp. 357-389] E-ISSN: 2173-1071

——— Maxigas, P. (2012). Hacklabs and hackerspaces – tracing two genealogies. *Journal of Peer Production*, (2). Retrieved from http://peerproduction.net/editsuite/issues/issue-2/peer-reviewed-papers/hacklabs-and-hackerspaces/

——— McChesney, R. W. (2015). *Desconexión Digital. Cómo el capitalismo está poniendo a internet en contra de la democracia*. Barcelona: El viejo topo.

——— McNutt, K. (2014). Public engagement in the Web 2.0 era: Social collaborative technologies in a public sector context. *Canadian Public Administration, 57*(1), 49–70.

——— Mercea, D. (2013). Probing the Implications of Facebook Use for the Organizational Form of Social Movement Organizations. *Information, Communication & Society, 16*(8), 1306–1327. DOI: https://doi.org/10.1080/1369118X.2013.770050

——— Moreno-Caballud, L. (2013). Desbordamientos culturales en torno al 15-M. *Teknokultura, 10*(1), 101–130. Retrieved from http://teknokultura.net/index.php/tk/article/view/79/pdf

——— Mosco, V. (2014). *La nube. Big data en un mundo turbulento*. Barcelona: Biblioteca buridán. Retrieved from http://uci.or.kr/G300-jX1088034.v12n2p245

——— Ostrom, E. (1990) *Governing the Commons: the Evaluation of Institutions and Collective Action*. Cambridge: Cambridge University Press.

——— Ortí Mata, M. & Díaz Velázquez, E. (2012) «Claves teóricas y metodológicas para la investigación acción participativa (IAP)», In M. Arroyo Menéndez & I. Sádaba Rodríguez. *Metodología de la investigación social. Técnicas innovadoras y sus aplicaciones* (pp. 153-174). Madrid: Síntesis.

E-ISSN: 2173-1071 IC – Revista Científica de Información y Comunicación 16 (2019) [pp. 357-389]

IC – Revista Científica de Información y Comunicación 16 (2019) [pp. 357-389] E-ISSN: 2173-1071

——— Padilla, M. (2012). *El kit de la lucha en internet : para viejos militantes y nuevas activistas*. Madrid: Traficantes de Sueños.

——— Putnam, R. D. (2003). El declive del capital social: un estudio internacional sobre sociedades y el sentido comunitario. *Political Science and Politics*. Retrieved from http://www.pyrenaeus.org/talaia2/wp-content/uploads/2013/03/El-declive-del-capital-social-Putman-Robert.pdf

——— Sassen, S. (2003). *Los espectros de la globalización*. Ciudad de México: Fondo de Cultura Económica de Argentina.

——— Sampedro Blanco, V. (2005) «La red del 13-M. A modo de prefacio». In V. Sampedro Blanco. *13-M: Multitudes online* (pp. 11-23). Madrid: Catarata.

——— Sierra Caballero, F. (2013) «Comunicología y tecnopolítica emergente. Nuevas mediaciones y espacios de liberación social.», *Revista de Estudios para el Desarrollo Social de la Comunicación*, 8(11), pp. 11-19.

——— Slatter, D., & Howard, Z. (2013). A place to make , hack , and learn : makerspaces in Australian public libraries. *The Australian Library Journal*. Taylor & Francis. DOI: https://doi.org/10.1080/00049670.2013.853335

——— Sletto, B., Bryan, J., Torrado, M., Hale, C., & Barry, D. (2013). Territorialidad, mapeo participativo y política sobre los recursos naturales: la experiencia de América Latina. *Cuadernos de Geografía – Revista Colombiana de Geografía*, *22*(julio-diciembre), 193–20. DOI: https://doi.org/10.5944/educxx1.17.1.1074

——— Stallman, R. (2004). *Software libre para una sociedad libre*. Madrid: Traficantes de sueños.

——— Stewart, S. (2010). *Cultural mapping toolkit*. Vancouver: Creative City Network of Canada.

——— Stoecker, R. (2002). Cyberspace vs Face to Face Community Organizing in the New Millenium. *Perspectives on Global Development and Technology*, *1*(2), 143–164.

——— Theocharis, Y., Lowe, W., van Deth, J. W., & García-Albacete, G. (2014). Using Twitter to mobilize protest action: online mobilization patterns and action repertoires in the Occupy Wall Street, Indignados, and Aganaktismenoi movements. *Information, Communication & Society*, *18*(2), 202–220. DOI: https://doi.org/10.1080/1369118X.2014.948035

——— Toret, J. et al. (2013) *Tecnopolítica: la potencia de las multitudes conectadas. El sistema red 15M, un nuevo paradigma de la política distribuida.* Barcelona: UOC.

——— Treré, E. (2019) *Hybrid Media Activism: Ecologies, Imaginaries, Algorithms.* Abingdon: Routledge.

——— van Dijck, J. (2014). Datafication, dataism and dataveillance: Big data between scientific paradigm and ideology. *Surveillance and Society*, *12*(2), 197–208.

——— Vissers, S., & Stolle, D. (2014). The Internet and new modes of political participation: online versus offline participation. *Information, Communication & Society*, *17*(8), 937–955. DOI: https://doi.org/10.1080/1369118X.2013.867356

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