Pragmatic Visionaries: Imaginaries, Myths and Technopolitics in the 15M Movement

Visionarios pragmáticos: imaginarios, mitos y tecnopolítica en el movimiento 15M

Jose Candón-Mena and Emiliano Treré

Key words

Activism

- Technology Appropriation
- Imaginary
- Internet
- Myths
- Social Mobilization

Palabras clave

Activismo

- Apropiación tecnológica
- Imaginario
- Internet
- Mitos
- Movimientos sociales

Abstract

This article examines imaginaries regarding the Internet and their influence on the forms of technological appropriation by social movements. It focuses on the concepts of myth, the digital sublime and cyber-libertarian rhetoric that mystify the emancipatory power of the Internet. Through an empirical study based on 37 interviews, three focus groups and participant observations, the imaginaries and media practices of the Spanish 15M movement are analysed. Our results reveal three hybrid tensions between: faith in the democratizing power of the Internet and political praxis; complementary actions in virtual and physical space; and the simultaneous use of corporate networks and alternative media. We conclude that utopian myths about the Internet are negotiated with reality in complex ways and inspire political action and technological innovation.

Resumen

Este artículo examina los imaginarios sobre Internet y su influencia en las formas de apropiación tecnológica por parte de los movimientos sociales. Se incide en el concepto de mito, la sublimación digital y la retórica ciberlibertaria que mistifica el poder emancipador de Internet. Mediante un trabajo empírico basado en 37 entrevistas, tres grupos focales y observaciones participantes, se analizan los imaginarios y las prácticas mediáticas del 15M. Nuestros resultados destacan tres tensiones híbridas entre: la fe en el poder democratizador de Internet y la praxis política; la acción complementaria en el espacio virtual y físico; y el uso simultáneo de redes corporativas y medios alternativos. Se concluye que los mitos utópicos sobre Internet son negociados con la realidad de formas complejas e inspiran la acción política y la innovación tecnológica.

Citation

Candón-Mena, Jose and Treré, Emiliano (2022). "Pragmatic Visionaries: Imaginaries, Myths and Technopolitics in the 15M Movement". *Revista Española de Investigaciones Sociológicas*, 180: 47-64. (doi: 10.5477/cis/reis.180.47)

Jose Candón-Mena: Universidad de Sevilla | jcandon@us.es Emiliano Treré: Cardiff University | treree@cardiff.ac.uk

INTRODUCTION¹

Myths associated with the birth of every information technology have been a constant since the printing press (Rhodes and Sawday, 2000). This article examines the imaginaries and myths associated with the Internet within the 15M social movement in Spain, exploring how they influenced the use and appropriation of ICTs by activists.

We postulate that techno-utopian imaginaries, the myths of a "digital sublime" (Mosco, 2011) and "cyber-libertarian rhetoric" (Dahlberg, 2010) in movements like 15M are not just fantasies or illusions based on naivety and innocence. In fact, awareness of the limits, risks and threats of digital technologies have not led to conspiracy thinking nor to catastrophism. If this were the case, the result would be paralysing and the imaginaries would have no effect in practice. If they are useful for inspiring social practices related to the appropriation of technology, it is specifically because said mythologies are negotiated with reality, which imposes limits and restrictions, and movement activists anchor imagination and desire in political praxis. Technological utopianism and political pragmatism coexist in complex forms.

Contrary to the widespread perspective that techno-utopian and idealist visions are based on ignorance and simplification, while techno-pessimism is a manifestation of a more learned, rational and insightful analysis of reality, we argue that at least the "digital avant-garde" (Gerbaudo, 2016) of 15M were well informed *utopianists*. They were fully aware of the dark side of digital technologies, but also of their potential and the opportunities they provide for transforming reality.

Postill (2016) considers activists to be "pragmatic visionaries" who combine technological knowledge with political savviness to obtain the greatest quotas of freedom and democracy possible. They combine a firm belief in the political power of digital technologies with a pragmatic attitude that permits them to evaluate their true potential. They share the myth of the "digital sublime" (Mosco, 2011) and they consider the Internet and ideals such as freedom and democracy as closely connected; but far from being techno utopian dreamers, they are, in fact, techno-pragmatists, as "they take a highly practical view of the limits and possibilities of new technologies for political change" (Postill, 2016: 149).

In the pragmatic *ethos* of the techno-political imaginary of 15M, characterised by "the tactical and strategic use of digital tools" (Toret, 2015: 20) to create "a new field for social-technical experimentation" (Alcazan, 2012: 7-8), this thesis is manifested through three axes or hybridisations:

- Regarding trust in the political and democratising power of digital technologies and concrete political practices and proposals.
- Through a hybridisation between the physical and the virtual, between the use of digital technologies for protest and actions in urban physical spaces.
- Through the simultaneous use of corporate technologies and autonomous and radical media.

These three hybridisations do not always appear at the same time in a social movement. Movements such as alter-globalization reject corporate networks and in their "self-limiting radicalism" (Cohen and Arato, 1992) opt exclusively for autonomous developments such as Indymedia (Wolfson, 2014). Others, such as the Mexican Yosoy 132 student movement used commercial networks and did not pay much attention to autonomous projects or to pre-existing groups of hackers and hacktivists (Candón-Mena, 2019). More traditional movements continue to give precedence to protesting in

¹ Funding: R&D Project "Sustainability of the Third Communication Sector. Design and application of indicators (SOSCom)" / PID2020-113011RB-I00 project funded by MCIN/ AEI/10.13039/501100011033

physical space, the use of digital technologies being secondary. At the other extreme, protests in Spain against the ley Sinde or groups such as Anonymous conceive networks as their natural space, without considering it necessary to act in physical space (Padilla, 2012). Lastly, in movements such as Italy's Five Star Movement, a democratic techno-utopia coexists with authoritarian practices and the democratising promise of the technology is nothing more than a cover-up myth for non-participatory practices (Treré, 2019). Although said hybridisations appear to different degrees in these and other movements, we consider the case of 15M as a paradigm for contemporary techno-political practices.

Despite the techno-determinist and utopian character that apparently characterises the digital sublime and cyber-libertarian rhetoric, our hypothesis is that in movements such as 15M, these myths were useful as they inspired social practices. Far from being taken as absolute truths, said mythologies were confronted with a reality that imposed limits and risks, which the activists were aware of.

An analysis of 15M permits us to explore the following questions: To what extent do techno-optimistic and techno-pessimistic perspectives coexist in social movements? What are the predominant imaginaries and myths among the activists? How do these symbolic elements relate to the material reality of available technologies? How do these digital imaginaries and myths influence the use and appropriation of technology?

To answer these questions, in our theoretical framework we address the concept of the imaginary understood as a social and collective construction. We consider the coexistence of different imaginaries promoted by different social actors and the consequent competition between dominant or "constituted" imaginaries and alternative or "constituent" imaginaries. We also empha-

sise the character of "creative imagination" in the imaginaries, which leads to their real impact on practices by influencing the uses, appropriations and developments of digital technology. After, we address a concrete form of the imaginary through the concept of myth, which in the Internet era takes the forms of the "digital sublime" and cyber-libertarian rhetoric.

Methodologically, our analysis is based on fieldwork we carried out in the past decade, including participant observations, interviews and discussion groups. Using these, we analyse the myths and imaginaries and techno-political practices of the 15M movement. We present the results combining theoretical concepts with our empirical work. To do this, using examples drawn from participant observation and interview statements we illustrate the hybrid ways in which Spain's so-called *indignados* combined the symbolic and mythological with their media and political practices.

We conclude that imaginaries and myths regarding the Internet had a real influence on the media practices of 15M, which combined hybrid strategies (Treré, 2019) that took into account both ideological and identity-related motivations, which often acquire mythic forms, as well as strategic and tactical conditions and utilitarian ends in the uses of digital technology.

THEORETICAL FRAMEWORK

The analysis of media imaginaries is important for several reasons (Natale and Balbi, 2014): because it helps us to understand what future possibilities are considered real or imminent at specific moments; because "the imagination is an engine for media change, producing possibilities that can be experimented with and developed" (ibid.: 212); because studying the impact of the imagination on media history is one more way to better analyze the social and

cultural construction of media and how different social groups create specific mediatised fantasies.

Imaginaries

The concept of the imaginary was widely considered during the 20th century from the perspective of different disciplines, such as psychoanalysis, art (surrealism), philosophy and anthropology. Castoriadis placed the concept of the imaginary at the centre of his thought, suggesting that "the social-historical institution is that in and through which the social imaginary manifests itself and brings itself into being. This institution is the institution of a magma of significations, social imaginary significations" (Castoriadis, 1987: 359). He points to society's ability to devise new meanings with which it is able to think of itself, creating a world of significations ex nihilio with which it creates "reality".

Cabrera (2006) applies the concept to ICTs, indicating the dual character of the media imaginary. From the perspective of the imaginary, he notes the renewal of the idea of progress after the Second World War, which led to a new "techno-communicational" imaginary (Cabrera, 2006: 18). As an imaginary, he denounces the substitution of the project of modernity, understood to be based on reason and the overcoming of inequalities, with a neoliberal logic of a technocratic character, impregnated with promises of development, emancipation and progress, which have ultimately been negated in social space.

Avoiding the conception of the imaginary as false or a distortion, Cabrera interprets it as the imagination or desires with which human beings think of themselves and give meaning to the world. These representations are more than pure ideology or utopic, given that they determine what is imaginable, thinkable and desirable. According to Cabrera, the imaginary associated with

ICTs is today the "instituted and instituting" social imaginary of contemporary society, given that, at the same time as it feeds hopes of change, it is accompanied by false promises of a new epoch characterised by the "end of ideologies" and by an idea of progress based on "inevitable" technological innovation.

The concept of the social imaginary is therefore related to creative imagination. For Taylor, the social imaginary "is not a set of ideas; rather, it is what enables, through making sense of, the practices of a society" (2004: 2). For Herman (2010), social imaginaries are not only ideas and understandings about the world, but they constitute "pragmatic templates for social practice". The imaginaries are a "constructed landscape of collective aspirations" (Appadurai, 1996: 31). Thus, social imaginaries capture the imagination in their authentically creative and not purely reproductive or imitative dimension, defining what is thinkable and, ultimately, inspiring social practices.

In addition, as social processes, concrete imaginaries are shaped by specific groups with opposing interests. Underlying the concept is thus the socio-political critique that social worlds can be problematised and questioned (Adams et al., 2015: 42-43). In this sense, social movements can be considered as instituting powers confronting instituted power. For Haiven and Khasnabish (2014), they are "convocations of the radical imagination", defined "as the ability to imagine the world, life and social institutions not as they are but as they might otherwise be". Social movements promote these imagined possible futures and inspire collective action to materialise them in the present.

Mvths

One of the forms the imaginary takes is that of myth. Barthes pointed out the func-

tion of myth as discourse that purifies social relations, eliminating the tensions and conflicts of political life. More than negating reality, myth reveals it in a seductive manner and, applied to technologies, "purifies them or makes them innocent, giving them a natural and eternal justification" (Barthes, 2010: 143). Almiron and Jarque suggest that digital discourse is mythic, as "it establishes itself as the repository of a reality — the technological-digital revolution— which is confused with myth—the birth of a new era— and which denies history, is not rational and, contrary to what it announces, is ideologically conservative" (2008: 20).

Mosco uses the concept of myth through an approach that combines the material dimension of the political economy of communication with symbolic cultural aspects. For this author "the power of myth lies not in its capacity to reflect reality, but in the promise it makes to escape from or reinvent it" (2011: 3). "Myths are stories that animate individuals and societies by providing paths to transcendence that lift people out of the banality of everyday life. They offer an entrance to another reality, a reality once characterized by the promise of the sublime".

Mosco's idea of the digital sublime (2011) is part of a long tradition of discussion about the "technological sublime" (Marx, 1964) and its role in western society. Authors such as Nye (1994) point to the sense of wonderment, transcendence and awe with which the modern individual perceives technology and which substitutes the sublime associated with the marvels of nature. Carey (1992: 18) points out a "ritual" or "historical-religious" model in the popular understanding of information technologies. The power of technology is exaggerated; it is attributed quasi-magical qualities and its consequences or the role of social, economic and governmental infrastructures in its development ignored. The "mythinformation" assumes "the almost religious conviction that a widespread adoption of computers and communications systems along with easy access to electronic information will automatically produce a better world for human living" (Winner, 1986: 125).

Updating the concept to the digital sublime, Mosco (2011) defines three regimes of cybernetic myths: The "end of history myth", "[the] myth of the end of geography" and "[the] end-of-politics myth". The Internet today incarnates the perfect myth of how ICTs can make the longed-for dream of democracy and community a reality, forgetting that any technology is constituted by "a culture that creates meaning and a political economy that empowers it" (Mosco, 2011: 211).

Sturken, Douglas and Ball-Rokeach argue that "the belief that a new technology can solve existing social problems reveals a refusal to confront fully the deeper causes of those problems" (2004: 3), what Morozov (2013) refers to as "technological solutionism".

This utopian techno-determinism is promoted by corporations and governments, as it is functional for the statu quo, but it also permeates the technological imaginaries of social movements. Movements focused on social change have a critical component, so that they are fertile ground for demystifying critique, above all given the role that corporations and governments play in the spread of techno-utopianism. In their criticisms they mobilise a pessimistic "diagnostic framework" (Gamson, 1988) about the dangers and negative aspects hidden by power. Taken to an extreme, this can lead to dystopia or to conspiranoia, with paralysing effects: if everything is controlled by an omnipotent and omnipresent power, efforts for change are condemned to failure. However, social movements have a utopic component, mobilising a "prognostic framework" (ibid.) that projects the desired change and animates the action. In extreme forms, this optimism acquires the form of a techno-determinist myth, which also has paralysing effects because it makes efforts

to change a reality that will inevitably improve thanks to the exogenous intervention of technology unnecessary. In fact, this uncritical trust that ignores the influence of power in technological development can be functional for the *statu quo*.

Nevertheless, our thesis argues for an approach to technological imaginaries and myths that is far removed from both determinism and utopian and dystopian extremes. Despite the cyber-libertarian rhetoric that, in its heterogeneity, dominated the "master frame" of 15M with respect to digital technologies, in the movement the Internet myth was anchored in and negotiated with reality, neither surrendering to it -which would lead to rejecting ICTs- nor ignoring it -which would lead to a naive and careless use of mainstream technologies or a retreat into self-referential and purist ghettos of technological innovation. Instead, 15M approached ICTs with hybrid strategies that combined idealism with pragmatism, the virtual with the physical and the instituted with instituting alternatives.

More than dogmatically believing in the democratising and emancipatory power of the Internet, the movement wanted to believe and needed to believe in this. It proclaimed "yes we can" [sí se puede] and mobilised and encouraged collective action, but this does not mean that the movement was not aware of the limitations and problems that it confronted. It was more optimistic than utopic. ICTs are not the solution, but they form a part of it. To take advantage of them it appropriated them in hybrid forms that did not ignore the role of politics, the importance of physical space and the reality of corporate control of the Internet. In this article we show that 15M built their techno-political project on these three axes of hybridisation: between the philosophical promise of the ideal of techno-democracy and realpolitik; between virtual action and presence in urban space; and between the disruptive use of corporative technologies and the use of autonomous and radical projects.

METHODOLOGY

Given the symbolic and discursive character of imaginaries and myths, we used a qualitative methodology. In total, both authors carried out 37 in-depth interviews based on an intentional sampling of leaders or "digital vanguards" (Gerbaudo, 2016) in the 15M movement. These participants played a fundamental role in the movements' media production and included journalists, web developers, hacktivists and social network organisers. We also organised three discussion groups (in Madrid, Barcelona and Seville) with grassroots activists with little or no previous experience in activism. The groups included 6 to 8 participants of different ages, roles and involvement in the movement.

We use the technique of the "active interview" (Holstein and Gubrium, 1995), with broad questions that foster the active intervention of the participants and based on a conception of reality as a continual and interpretive achievement, understanding that activists' relationships with technologies constitute a transformative and dynamic complex. The participants were able to address a wide range of ideas through recounting stories in response to broad questions such as "How would you describe your use of this technology" and "How would you define your relationship with this Internet platform?" This permitted us to work with the activists in the co-creation of "the environment of the communication phenomenon from the perspective of the participant" (Atkinson, 2010: 14).

To analyse the qualitative data, we use the NVivo programme, which permits us to synthesise and organise the information and to infer new relationships among the individual accounts. We analyse the transcripts based on six macro-categories: 1) faith in technology; 2) political praxis; 3) virtual space; 4) physical space; 5) corporate networks; and 6) alternative networks. These categories were then grouped in relation to the three proposed hybridisation axes. This process was based on grounded theory (Glaser and Strauss, 2017) and its "constant comparative method", which involves a process of continual revision, in which the aim is not testing the universality or proof of the suggested causes, but of reaching a "saturation" that permits us to generate meaningful data and theories based on oral testimony (Valles, 2002).

The secondary analysis of the material available (transcriptions of interviews and groups discussions) allowed us to select the accounts related to the object of our study. Lastly, in this article we use extracts from 5 interviews and the discussion groups that took place in Seville, with accounts from 2 of the 6 participants, and in Barcelona, with accounts from 5 of the 6 participants. Below, we detail the methods, dates and the profiles of the participants whose accounts we use in the text:

TABLE 1. Interviewed profiles

Name and date	Profile
Interviews	
Francisco Jurado (16/5/2011 and 2/6/2012) Simona Levi (2/6/2012)	Man, young (under 30 years of age), Seville. Some experience in earlier movements and a prominent role in 15M. Active in Democracia Real Ya, #OpEuribor, Democracia 4.0, 15MpaRato. Woman, young, Barcelona.
	Wide experience in earlier movements and prominent role in 15M. Active in the movement for decent housing (VdeVivienda), Movimiento por la cultura libre (Xnet), 15MpaRato, Partido X.
Alex Hache (1/6/2012)	Woman, young, Seville/Barcelona. Wide experience in earlier movements and prominent role in 15M. Active in global movement, Donestech, Lorea/N-1.
Isaac Hacksimov (group pseudonym, 2 persons interviewed) (9/1/2012) Marta Franco (3/6/2012)	Men, young, Madrid. Wide experience in earlier movements and prominent role in 15M. Active in Hacktavistas, Hacklab del CSOA Patio Maravillas in Madrid, hackmeetings, Acampada Sol. Woman, young, Seville/Madrid.
	Wide experience in earlier movements and prominent role in 15M. Active in okupa movement for housing, Acampada Sol, Lorea/N-1, Catorce.cc.
Discussion group Seville	
Ana (24/2/2012)	Woman, young, Seville. Without prior activist experience.
Sergio (24/2/2012)	Man, young, Seville. Some previous experience in neighbourhood and trade union movements.
Discussion group Barcelona	
Isabella (12/2/2012)	Woman, young, Barcelona. Some previous experiences in social centres (EXIT).
Fanny (12/2/2012)	Woman, young, Barcelona. Without prior activist experience.
Montse (12/2/2012)	Woman, young, Barcelona. Without prior activist experience.
Sylvia (12/2/2012)	Woman, young, Barcelona. Without prior activist experience.
Rubén (12/2/2012)	Man, young, Barcelona. Some previous experience in campaigns for auditing the debt.

Source: Own elaboration.

The study was completed with participant observation (Guash, 1997) in initiatives of technological appropriation in 15M, including: participation in the Facebook group that was the origin of Democracia Real Ya ("platform for coordination of groups for citizen mobilisation") that began some weeks before the 15M demonstration; the origin of the N-1 social network, the first author of this text being the 4th user of this network; the Hackmeetings in 2012 and 2014, forming part of the organisation of the latter; and various demonstrations and assemblies in Madrid and Seville. Observation was carried out in different periods from 2011 to 2015 in an unstructured manner, although a field notebook was used to record certain observations. Interaction with the subjects from the perspective of "activist research" (Cox and Flesher, 2009) involves the participation of the researcher as part of the self-researched movement, in terms of sharing its objectives and actively participating in its actions. This gives the researcher a legitimacy and provides trust, which makes it possible to get close to the subjects, to observe and to interpret their motives, and to explore experiences and nuances that are difficult to capture by other means.

ANALYSIS AND RESULTS

If we conceive of social movements as "convocations of the radical imagination" (Haiven and Khasnabish, 2014), we can understand how and why media technologies have become the privileged terrain of contemporary activism. Digital activism is both a privileged space and a disputed terrain where we can detect the development and refinement of utopic and dystopic media imaginaries (Barassi, 2015), as well as a space where we can observe competing imaginaries and practices. In this sense, it is useful to analyse and deconstruct the specific

ways in which rhetorical forms and myths influence digital activism.

In the 15M movement, an optimistic imaginary regarding ICTs and cyber-libertarian rhetoric were very present. However, this did not translate into an ingenuous techno-utopianism. The myth of the digital sublime was mobilised in a pragmatic sense through three hybridisations:

Democracia Real Ya (DRY) [Real Democracy Now]

The first hybridisation produced was based on the trust of 15M in the transformative and democratising power of the Internet and its pragmatic and eminently political understanding of democracy. The idealist myths and cyber-libertarian rhetoric of the movement coexisted with the practical will to immediately ("ya") improve "real" democracy through concrete proposals and the use of digital tools to increase participation. This hybridisation between the ideal conception and democratic practice was also manifested in the movements' notion of democracy not only in formal terms but also in substantive terms, including demands regarding economic and social conditions.

Mythic formulations consistent with the mentioned cyber-libertarian rhetoric were present in the movement. As the activist and supporter of DRY in Seville, Francisco Jurado, stated: "the Internet is democracy" (Interview, 16/5/2011). For Simona Levy, veteran activist and promotor of Partido X: "The Internet is a paradigm change, the key. The Internet marks the difference with struggles from previous times" (Interview, 2/6/2012).

Alex Haché, researcher and activist for technological sovereignty, shares the optimistic vision of the Internet and its democratising potential in stating:

Before, the movements had ideals but not the necessary tools to carry them out, and now we

have the Internet and other tools to put our ideas of horizontalism, assemblies and participation into practice (Interview, 1/6/2012).

Despite this optimism regarding the democratising power of the Internet, 15M did not share the "powerful myth" (Mosco, 2011) that declared the end of politics. Quite the contrary, the movement inscribed its media practices in a much broader political praxis in which technology was only an additional instrument for doing politics. In its techno-political framework, 15M believed that technological artifacts have political properties (Winner, 1986), that politics and technology are different sides of the same coin (Sádaba and Gordo, 2008), and it acted to achieve its political objectives through the use of technical artefacts.

The movement was inspired by the democratising myth of the Internet but it was not techno-determinist, as it considered technology to open up new possibilities, but they had to be accompanied by proposals and actions in a broader political context. The Internet serves to do politics, but it is not a substitute for politics. The hybridisation of the cyber-libertarian myth was produced in two ways.

On the one hand, 15M did not conceive ICTs as a democratising tool *per se*. "Don't get to excited over the Internet" stated Rubén (Barcelona discussion group, 12/2/2012). For Alex Haché:

Technology empowers if you use your head. If you use it in a consumerist and passive manner and you are not conscious of the negative aspects of Facebook, of the use of your personal data and information or of the possibilities for addictions and disorders, then you are not being empowered (Interview, 1/6/2012).

According to Sylvia, a grassroots activist in Barcelona, the Internet is positive, but she qualifies this:

It depends on what you use it for. If you use it to present personal information, it is a system of control, but if you use it for your own benefit as a form of communication, of distribution of information of different types with different people, for me its not bad *per se* (Barcelona discussion group, 12/2/2012).

The movement was fully aware of the risks and limitations pointed out by the perspective of the political economy of communication (Mattelart and Vitalis, 2015; McChesney, 2012). Despite this, it explored the concrete uses and tools that could strengthen participation in relation to other variables. An example was the Demo 4.0 approach (Jurado, 2013), which, far from a simplistic notion of direct democracy through digital voting, consisted of a hybridisation of direct democracy with the existing representative model, supported on the basis of existing legislation and complementary to other approaches.

The movement's conception of democracy was complex and the Internet was only a complementary tool, its use concretised in practical proposals that hybridised the models of democracy (representative, direct and deliberative), forms of "demo-diversity" (Sousa, 2016) that, based on different paths, broaden the margins of democracy.

Some of these measures were inspired by digital struggles, such as the so-called *ley Sinde* (the Sinde law) and net neutrality, as well as the protection of investigative journalism inspired by Wikileaks; others made us of ICTs, such as digital voting in party primaries, which Podemos would subsequently use. But the Internet was not seen as the panacea for democracy, nor was it understood in idealistic terms. As Fanny, an activist from Barcelona states.

Through reforming democracy, I believe that something can be built. It is not going to be possible to have an assembly for Spain. I don't know what it will be like and I know that it is easy to criticise without an answer [...] but we can improve what we have and lay the foundations (Barcelona discussion group).

On the other hand, democracy in 15M was not sustained in an ideal and formal way

based only on electronic voting or open discussion in online forums. The movement's model was far from the vision of technodeterminist thinkers in "Wired" magazine or from Barlow's A Declaration of the Independence of Cyberspace. These odes to the freedom of the Internet were inspiring to activists (Alex Haché mentions Barlow's text as an inspiration), but the term libertarianism is not associated with the anarcho-capitalism characteristic of the "California ideology" (Barbrook and Cameron, 1996), but rather with the libertarian movement in which individual freedom is inseparable from social equality. 15M was about the political economy and not the functional discourses of digital capitalism.

Neither freedom nor participation were seen as based only on the use of the Internet, nor was democracy understood to be based only on debate and free elections. Rather, it required the existence of conditions of material dignity that permit "participatory parity" (Fraser, 1997), and, for 15M, this was a substantive aim of democracy. When a group of activists proposed a "minimum consensus" based on three basic points that only made reference to formal democracy, their proposal was criticised and marginalised by the majority of the movement. As Sylvia argued:

This thing about democracy was very good at the beginning because it attracted a lot of people... but for me it is not the objective... It is the fact that there are people that have power over the lives of other people (Barcelona discussion group, 12/2/2012).

In short, 15M was techno-optimistic, but not techno-determinist nor utopian in regard to the emancipatory and democratising power of the Internet. It was a techno-political movement, as it understood ICTs as an additional political tool rather than as the only one, nor did it ignore the much broader political context. Its ideal of democracy was complex and not limited to free expression and deci-

sion-making in a mystified virtual sphere. It considered the material issue as substantive to both the means and end of democracy.

Physical and virtual

The second hybridisation in which the movement anchored its mythification to reality was its simultaneous actions in cyberspace and in physical space (Díaz-Parra and Candón-Mena, 2014). For 15M, online protest was not "virtual" in the sense of apparent, imaginary or unreal. From the beginning, the movement included groups that were virtual, such as Anonymous and #nolesvotes [Don't vote for them], that had been exclusively active on the Internet with relative success.

Despite its belief in the potential of the Internet, just as it did not adopt a cybernetic myth of power that ignores politics, it did not share the idea of the existence of a "mythic space" that declares the end of geography (Mosco, 2011); nor did the movement mythify action in physical space or physical presence as the only genuine form of protest or community building.

There was no dichotomy between the virtual and the physical. For 15M, both spaces were real and symbolic; the physical and the virtual fed back on each other in a *cyborg* practice and identity. Techno-political activism involved following discussions on email lists, forums and social networks, and participation in face-to-face assemblies and street protests. For the grassroots activist, Fanny:

Geographic space as a literal and physical convergence of the struggles had a weight, as did social networks and communication networks, which is an abstract concept. I see parallels between these two things (Barcelona Group, 12/2/2012).

Face-to-face experiences in assemblies are mentioned as crucial by various activists. For Ana, a new activist in the movement in Seville: "that's where awareness emerges, face to face, one on one" (Seville Group, 24/2/2012). However, participation in digital networks is complementary to physical debates. As Monste, an activist in Barcelona points out regarding face-to-face meetings: "you don't always have to go, but you come and go and follow things through different networks and media" (Barcelona Group, 12/2/2012).

The imaginary of a true "virtual community" (Rheingold, 1994) based on debate and personal relations in cyberspace was very present in the movement. The Internet is configured as a "cyberplace" (Wellman, 2001), as its use is not limited to the sharing of media, but an explicitly corporeal interaction exists, which is perceived as such, as a real community though without physical proximity, with all the components that characterise a true social community: common objectives, values, language and experiences.

Along these line Isaac Hacksimov, collective pseudonym of the *hacktivist* group, Patio Maravillas, in Madrid, emphasised:

The people that participate understand whether it is physical or virtual, although you are not physically there, you are seeing and listening to everything that happens... you are just as much there as those that are physically there (Interview, 9/1/2012).

Online action was considered as complementary. It was not mythified, as the need to take action in the streets ("take the street", "take the square", "take the neighbourhoods") was always emphasised. But nor was it underestimated, as in some interpretations of "clicktivism" or "armchair activism" that suggest the existence of the classic "narcotizing dysfunction". As Isabella, a Catalonian grassroots activist states:

That someone says I am active on my computer... but I also think that this both permits a lot of people to participate... it offers a possibility that

wasn't there before. That you can be active if you go to the plaza and that you can be active in a lot of other ways is for me one of the keys to 15M (Barcelona Group, 12/2/2012).

Cyberspace was, thus, conceived as real and, physical space, in turn, had a symbolic component. In the movement's "spatial practices" (Lefebvre, 1976 and 1991), it created Lefebvrian "spatial-temporal alternatives" and "spaces of representation" through which it questioned the "spatial representations" of power. As Sergio, a neighbourhood activist in Seville states:

Las Setas [popular name for the plaza where the camping site was organised] is like a symbol of misuse in all its senses. We are talking about privatised public spaces, right? How this is happening in many areas of society: health, the economy, right? In this case, public space is simply privatised and it is also a fight against this (Seville Group, 24/2/2012).

Occupations of the plazas, such as the Plaza del Sol, were symbolic challenges that, along with the intensive use of digital networks, broke a media blackout, demanding attention in public debate (Candón-Mena, 2012). By occupying the plazas and renaming them ("Plaza Sol-ution"), the movement appropriated them symbolically.

The techno-political action of the movement launched parallel (cyber)spatial strategies in which the difference was not so much between online and offline spaces or actions, but between different functions and scales. Just as the same digital tools were not used for outreach (Facebook, Twitter, YouTube) as for debate and internal organisation (email, forums, wikis, N-1), nor were the same spaces used for visibility (plazas and demonstrations) as for organising (commissions, neighbourhood assemblies).

Expressive functions predominated in the demonstrations and in the plazas. At the same time, networks such as Facebook, Twitter and YouTube were used for outreach. Both spaces fed back into each other in their functions of empowerment, expressiveness and outward projection. At the same time, on a smaller scale, the commissions and neighbourhood assemblies produced close contact and authentic debate and also employed other digital tools, such as mailing lists, forums and N-1.

Decentralisation into neighbourhoods anchored the movement geographically, connecting it with other "militant particularisms" (Harvey, 2007) and a politics centred on communities and specific geographic spaces. These were spaces that concretised the universal into the particular, where concepts such as social justice were concretised within specific situations and acquired their universality through the abstraction of these cases (Harvey, 2007: 209-210). The community translated the general problematic into concrete problematics, internalising impulses generated from the outside, such as in the plazas and social networks. A movement born in virtual space looked for geographic spaces to reterritorialize, to establish itself or give itself geographic references, just as grassroots movements emerging from the local sought alliances and support in cyberspace. Montse, from the Barcelona discussion group, mentioned the alter-globalisation slogan "think globally, act locally", and stated: "The fact of dividing ourselves into commissions, groups or whatever, leads to people identifying with something and feeling it in their guts" (Barcelona group, 12/2/2012).

For her sister activist Isabella:

In the neighbourhood we also touch on all the issues that affect the neighbourhood and not only health and education. The metro, TMB, a business that wants to fire somebody, etc. And the geographic change makes the struggle different [...] And of course, the neighbourhoods combine the change in the struggle and the geographic change (Barcelona group, 12/2/2012).

In addition, the network imaginary was replicated in the physical spaces of discus-

sion and decision-making as well. The hacker ethic (Himanen, 2002) and the free software movement (Stallman, 2004) informed faceto-face debates and assemblies in physical spaces. As in these latter communities, decentralised practices were imitated but also based on the freedom to undertake new actions or develop proposals (forking) (Monterde, Rodríguez and Peña-López, 2013). The movement for free software and free culture was thus one of the imaginaries mobilised by 15M (Fuster, 2012; Treré, Candón-Mena and Sola-Morales, 2021), not only in regard to the movement's use of ICTs, but also in the political sphere. Francis Jurado speaks, for example, of "open code" manifestos replicating the terminology of computer programming (Interview, 2/6/2012). For Simona Levi, the movement applied the experiences of hacker groups and free software development collectives in its organisational forms because: "15M is a digital native movement. It understands what is decentralisation, meritocracy, how to organise online, how to educate, train, inform and self-inform" (Interview, 2/6/2012).

In short, a movement born in virtual space looked for physical spaces to geographically locate itself. In addition, the community, on a smaller scale, shifted the general problematic on concrete issues, internalising impulses from outside and seeking alliances and support in cyberspace. Both types of space, the physical and virtual, were real, symbolic and complementary within 15M.

The corporate and the autonomous

Lastly, a hybridisation was produced through the simultaneous use of commercial or corporate technologies and the movements' own, autonomous and radical media (Downing, 2001). 15M was not naive in its use of commercial networks. It was aware of the risks associated with corporate and government control of networks such as Facebook, Twitter and YouTube, and of the weakness of an excessive dependence on them, but it did not reject their use. Instead, it made a disruptive use of these networks, appropriating them for its own ends and their advantages and wide reach. At the same time, the movement worked to develop and promote autonomous tools under its control, conceived as from and for social movements. It valued "technological sovereignty" (Haché, 2015) but was not purist in this sense. The performative strategy that gives precedence to coherence between means and ends was relaxed in 15M, as the movement was also utilitarian and practical. Any means, even the commercial networks that activists hated, were valid for use if they served in attaining some of the movement's proposed ends.

As Marta Franco, responsible for the networks for the occupation of the Plaza del Sol, stressed:

Social movements have contradictions, but the contradictions have to be based on using your head. It is contradictory that we promote a type of society and that at the same time we use the tools generated by the system. We understand the problems that the technology and the use of commercial software bring, but we also want to leave the ghetto and major dogmas and experiment. Certain cliches that exist in left-wing spaces criticising technology have been abandoned. The benefits these tools provide have to be recognised without losing sight of their negatives (Interview, 3/6/2012).

This contradiction between the negative view of corporate networks and utilitarianism is clearly reflected by one of the anonymous activists who act under the pseudonym Isaac Hacksimov. While the actual activist distrusts commercial networks and mass media and supports "constant work in the creation of new media", he also recognises that "Isaac Hacksimov is a communications *pop-star*: interviewed on television, in newspapers, giving talks" (Interview, 9/1/2012).

15M had this ambivalent nature in relation to the use of ICTs. This was reflected in the practices of hackers such as Manje (pseudonym), a programmer and initiator of Indymedia Estrecho in the alter globalisation movement, an autonomous project clearly based on the ideal of technological sovereignty. However, he later created the Facebook page, perhaps the commercial network most reviled by critical activism, that was the origin of DRY, and he was an organiser of 15M. He also programmed the script that, violating Facebook's terms of use, permitted users to invite friends to protest events without needing to do so one by one, in this way Facebook was hacked and the movement's use of it was disruptive, even provoking the temporary closure of the event. Lastly, he would programme and initiate the autonomous N-1 network, which was aimed at substituting Facebook for the internal organisation of the movement. This autonomous social network, designed using free software, would ultimately disappear due to lack of resources to maintain its servers, but it would play an important role in the most active stage of the movement. In a month and a half, it went from 3000 to 30 thousand users, and from 370 to 2100 groups, becoming a symbol and place for experimentation for hacktivist groups. As Francisco Jurado points out regarding the use of Facebook to call for the first protest:

This is totally a hacking strategy. In other words, Facebook is financed by banks and we use their platform to go after the banks. We use their own platform against them (Interview, 2/6/2012).

Techno-politics has been defined as a popular and easy to use derivation of the practices of hackers (Gerbaudo 2015; Toret, 2015: 43-44), referring not only to the creation of alternative digital platforms, but also to the appropriation and "deviation" of cybernetic material (Galis and Naumayer, 2016) in corporate social platforms. Gerbaudo (2017) has indicated different "tech-

nopolitical orientations", which range from "cyber-autonomism", which gives primacy to the development of autonomous technologies and technological sovereignty, to "cyber-populism", based on a pragmatic vision that does not reject the use of widely disseminated commercial technologies.

A clear awareness of the risks of corporate technologies, as analysed in the political economy of communication, existed in 15M, but this did not lead to their rejection. On the contrary, the movement believed in the political power of social networks, but did not make a naive use of them or reject the creation of autonomous alternatives. In fact, in 15M an intense collaboration between hackers and other profiles took place through the figure of the hacktivists, who Marta Franco defines as "the generic brand of the hackers", as they do not act alone or isolated in digital worlds: "the hacktivist identity includes a lot of people; we are not all computer programmers" (Interview, 3/6/2012).

Collectives such as HackSol emerged out of this collaboration, facilitating infrastructure, such as the webs for the neighbourhood groups and those occupying the squares, as well as for N-1. In addition, they provided digital tools, such as Appgree, Propongo and Oiga.me, and, in general, facilitated digital literacy for the movement. As a result, 15M had a high level of technological appropriation.

In short, more than a bipolar choice between autonomous and corporate tools, we can speak of a continuum along diverse degrees of technological appropriation that coexisted in the movement. This reveals the complex forms in which mythic ideals and rhetorics are found in reality. The desires and ideals that inspire autonomous developments and the critique of corporate networks coexist with pragmatism, which prioritises issues such as diffusion and usability. Techno-politics, therefore, involves placing the performative strategy that prioritises co-

herency between means and ends between parentheses, adopting what we could refer to as a "transformative" strategy that seeks, above all, to be involved in concrete political reality.

DISCUSSION AND CONCLUSIONS

15M adopted ICTs enthusiastically, as it believed in their transformative and democratising power, and was inspired by the mysticism of the utopian technologists of the early days of the web, adopting a cyber-libertarian rhetoric. However, the activists were aware of the limits and risks of the Internet. There was no blind faith in the power of technology; rather, the movement adopted a techno-political strategy in which technology was only one more political tool. The movement was highly pragmatic in the ways it used and appropriated ICTs, turning to them as instruments with concrete functions and complementary with other actions and approaches, such as: political and legal actions to strengthen democracy; meetings and mobilisations in urban spaces; and the use of both corporate and autonomous technologies, as well as non-digital media (posters, pamphlets, newspapers, etc.). Our study sheds light on the communicative complexities of recent social movements, showing the importance of the symbolic dimension, the complex exchange between virtual and physical spaces and the key role corporeality and mutual support still have in contemporary activism.

Although the utopian myths and emancipatory imaginary of the Internet were not taken literally by the movement, these did have influence on media practices and the movement's predisposition to use digital technologies widely and intensively. 15M emerged in a moment in which optimism regarding ICTs still predominated. One might ask whether today, with the rise of fake news and scandals, such as that in-

volving Cambridge Analytica, the attitude of progressive movements toward digital technologies might be different, with more pessimistic and suspicious visions of ICTs taking precedence (Candón-Mena and Montero-Sánchez, 2021).

The use of digital networks by many populist movements and the extreme right, raises the issue that the emancipatory imaginary of the Internet can also serve to empower groups and movements with undemocratic values. This points to the limitations of our study, as just as 15M only used those elements from the techno-utopian myth that interested them, so did the apologists for digital capitalism with regard to the countercultural values expressed in the beginning of the Internet era (Turner, 2006; Markofff, 2005), and the same seems to be occurring today with xenophobic, ultra-nationalist and authoritarian movements (Schradie, 2019). Nevertheless, the main finding from our study -that utopian myths about the Internet are negotiated with the reality of complex forms and inspire both political action and technological innovation - can be applied to many recent techno-political movements in different parts of the world, including Occupy Wall Street (in the United States), the 5 Star Movement (in Italy) and the Umbrella Revolution (Hong Kong).

BIBLIOGRAPHY

- Adams, Suzi; Blokker, Paul; Doyle, Natalie J.; Krummel, John W. M. and Smith, Jeremy C. A. (2015). "Social Imaginaries in Debate". *Social Imaginaries*, 1(1): 15-52. doi: 10.5840/si2015112
- Alcazan, Monterde; Levy, Simona; Toret, Javier and Jurado, Francisco (2012). *Tecnopolítica Internet y Revoluciones*. Barcelona: Icaria.
- Almirón, Núria and Jarque, Josep M. (2008). *El mito digital.* Barcelona: Anthropos.
- Appadurai, Arjun (1996). *Modernity at Large: Cultural Dimensions of Globalization*. Minneapolis: University of Minnesota Press.

- Atkinson, Joshua D. (2010). Alternative Media and Politics of Resistance: A Communication Perspective. New York: Peter Lang.
- Barassi, Veronica (2015). *Activism on the Web: Everyday Struggles against Digital Capitalism*.
 New York, London: Routledge.
- Barbrook, Richard and Cameron, Andy (1996). "The Californian Ideology". *Science as Culture*, 6(1): 44-72. doi: 10.1080/09505439609526455
- Barthes, Roland (2010) [1957]. *Mitologías*. México D.F.: Siglo XXI.
- Cabrera, Daniel H. (2006). Lo tecnológico y lo imaginario: Las nuevas tecnologías como creencias y esperanzas colectivas. Buenos Aires: Biblos.
- Candón-Mena, Jose (2012). "La batalla de la agenda: De las redes sociales a la agenda mediática, política y electoral". *TecCom Studies*, 4: 217-227.
- Candón-Mena, Jose (2019). "Identidad colectiva y cultura digital en México: Del EZLN al movimiento #yosoy132". *Virtualis. Revista de Cultura Digital*, 10(18): 52-62. doi: 10.2123/virtualis. v10i18.268
- Candón-Mena, Jose and Montero-Sánchez, David (2021). "From cyber-activism to techno-politics. A critical take on historical periods and orientations in the use of digital technology by social movements". IJOC. International Journal of Communication, 15: 2921-2941.
- Carey, James W. (2002). *Communication as Culture*. New York, London: Routledge.
- Castoriadis, Cornelius (1987). As encruzilhadas do labirinto. Rio de Janeiro: Paz e Terra.
- Cohen, Jean L. and Arato, Andrew (1992). *Civil Society and Political Theory*. Cambridge: The MIT Press.
- Cox, Laurence and Flesher, Cristina (2009). "Movement Knowledge: What Do We Know, How Do We Create Knowledge and What Do We Do with It?". *Interface*, 1(1): 1-20.
- Dahlberg, Lincoln (2010). "Cyber-libertarianism 2.0: A Discourse Theory/Critical Political Economy Examination". *Cultural Politics*, 6(3): 331-356. doi: 10.2752/175174310X12750685679753
- Díaz-Parra, Ibán and Candón-Mena, Jose (2014). "Espacio geográfico y ciberespacio en el movimiento 15M". Scripta Nova. Revista Electrónica de Geografía y Ciencias Sociales, 18(470).
- Downing, John D.H. (2001). *Radical Media. Rebellious Communication and Social Movements*. Thousand Oaks, California: Sage.

- Fraser, Nancy (1997). *Iustitia Interrupta. Reflexiones* críticas desde la posición postsocialista. Bogotá: Siglo del Hombre editores.
- Fuster, Mayo (2012). "The Free Culture and 15M Movements in Spain: Composition, Social Networks and Synergies". Social Movement Studies, 11(3-4): 386-392. doi: 10.1080/14742837.2012.7 10323
- Galis, Vasilis and Naumayer, Christina (2016). "Laying Claim to Social Media by Activists: A cyber-material Détournement". Social Media+Society, 2(3): 1-14. doi: 10.1177/2056305116664360
- Gamson, William (1988). Political Discourse and Collective Action. In: B. Klandermans; H. Kriesi and S. Tarrow (eds.). *International Social Movement Research: From Structure to Action* (pp. 219-246). London: JAI Press.
- Gerbaudo, Paolo (2015). Tweets and the Streets. Social Media and Contemporary Activism. London: Pluto. doi 10.2307/j.ctt183pdzs
- Gerbaudo, Paolo (2016). "Social Media Teams as Digital Vanguards: the Question of Leadership in the Management of Key Facebook and Twitter Accounts of Occupy Wall Street, Indignados and UK Uncut". *Information, Communication and Society*, 20(2): 185-202. doi: 10.1080/1369118X.2016.116 1817
- Gerbaudo, Paolo (2017). "From Cyber-Autonomism to Cyber-Populism: An Ideological Analysis of the Evolution of Digital Activism". *Triple-C*, 15(2): 478-491. doi: 10.31269/triplec.v15i2.773
- Glaser, Barney G. and Strauss, Anselm L. (2017). Discovery of Grounded Theory: Strategies for Qualitative Research. London, New York: Routledge. doi: 10.4324/9780203793206-1
- Guasch, Oscar (1997). *Observación participante*. Madrid: CIS.
- Haché, Alex (ed.) (2015). Soberanía tecnológica. Barcelona: Ritimo.
- Haiven, Max and Khasnabish, Alex (2014). *The Radical Imagination: Social Movement Research in the Age of Austerity.* London: Zed Books.
- Harvey, David (2007). Ciudad y justicia: los movimientos sociales en la ciudad. In: D. Harvey (ed.). *Espacios del capital. Hacia una Geografía Crítica* (pp. 204-224). Madrid: Akal.
- Herman, Andrew (2010). The Network We All Dream of: Manifest Dreams of Connectivity and Communication or, Social Imaginaries of the Wireless Commons. In: B. Crow; B. Longford and K. Sawchuk (eds.). *The Wireless Spectrum:*

- The Politics, Practices and Poetics of Mobile Media (pp. 187-198). Toronto: University of Toronto Press.
- Himanen, Pekka (2002). La ética del hacker y el espíritu de la era de la información. Barcelona: Destino.
- Holstein, James A. and Gubrium, Jaber F. (1995). *The Active Interview.* Thousand Oaks, California: Sage. doi: 10.4135/9781412986120
- Jurado, Francisco (2013). "Democracia 4.0: Desrepresentación en el voto telemático de las leyes". Revista Internacional de Pensamiento Político, 8: 119-138.
- Lefebvre, Henri (1976). *Espacio y política.* Barcelona: Península.
- Lefebvre, Henri (1991). *The Production of Space*. Oxford: Blackwell.
- Markoff, John (2005). What the Dormouse Said: How the Sixties Counterculture Shaped the Personal Computer Industry. New York: Penguin.
- Marx, Leo (1964). The Machine in the Garden: Technology and the Pastoral Ideal in America. Oxford: Oxford University Press.
- Mattelart, Armand and Vitalis, André (2015). De Orwell al Cibercontrol. Barcelona: Gedisa.
- McChesney, Robert W. (2012). Digital Disconnect: How Capitalism is Turning the Internet against Democracy. New York: New Press.
- Monterde, Arnau; Rodríguez, Adrià and Peña-López, Ismael (coords.) (2013). La Reinvención de la democracia en la sociedad red. Neutralidad de la Red, ética hacker, cultura digital, crisis institucional y nueva institucionalidad. In: *IN3 Working Paper Series, WP13-004*. Barcelona: UOC-IN3.
- Morozov, Evgeny (2013). To Save Everything, Click Here: The Folly of Technological Solutionism. New York: Public Affairs.
- Mosco, Vicent (2011) [1994]. Sublimidad digital. Ciberespacio, mito y poder. México: Universidad Veracruzana.
- Natale, Simone and Balbi, Grabiele (2014). "Media and the Imaginary in History: The Role of the Fantastic in Different Stages of Media Change". *Media History*, 20(2): 203-218. doi: 10.1080/1368 8804.2014.898904
- Nye, David E. (1994). *American Technological Sub-lime*. Cambridge: MIT Press.
- Padilla, Margarita (2012). El kit de la lucha en Internet. Madrid: Traficantes de Sueños.

- Postill, John (2016). Freedom Technologists and the Future of Global Justice. In: N. Buxton and D. Eade (eds.). State of Power: Democracy, Sovereignty and Resistance (pp. 147-163). Amsterdam: Transnational Institute.
- Rheingold, Howard (1994). *The Virtual Community*. London: Secker&Warburg.
- Rhodes, Neil and Sawday, Jonathan (2000). *The Renaissance Computer. Knowledge Technology in the First Age of Print.* London: Routledge.
- Sádaba, Igor and Gordo, Ángel (eds.) (2008). Cultura digital y movimientos sociales. Madrid: Catarata.
- Schradie, Jen (2019). The Revolution That Wasn't: How Digital Activism Favors Conservatives. Cambridge: Harvard University Press.
- Sousa Santos, Boaventura de (2016). La difícil democracia. Una mirada desde la periferia Europea. Madrid: Akal.
- Stallman, Richard M. (2004). *Software Libre para una sociedad libre*. Madrid: Traficantes de Sueños.
- Sturken, Marita; Douglas, Thomas and Ball-Rokeach, Sandra J. (eds.) (2004). *Technological Visions: The Hopes and Fears that Shape New Technologies.* Philadelphia: Temple University Press.
- Taylor, Charles (2004). *Modern social imaginaries*. Durham, London: Duke University Press.
- **REVIEW:** June 30, 2021
- ACCEPTANCE: October 8, 2021

RECEPTION: January 25, 2020

- Toret, Javier (ed.) (2015). *Tecnopolítica y 15M: La potencia de las multitudes conectadas*. Barcelona: UOC.
- Treré, Emiliano (2019). *Hybrid Media Activism: Ecologies, Imaginaries, Algorithms*. London and New York: Routledge.
- Treré, Emiliano; Candón-Mena, Jose y Sola-Morales, Salomé (2021). "Imaginarios activistas sobre Internet: Del mito tecno-utópico al desencanto digital". *CIC. Cuadernos de Información y Comunicación*, 26: 33-57. doi: 10.5209/ciyc.76147
- Turner, Fred (2006). From Counterculture to Cyberculture: Stewart Brand, the Whole Earth Network and the Rise of Digital Utopianism. Chicago: University of Chicago Press.
- Valles, Miguel S. (2002). *Entrevistas Cualitativas*. Madrid: CIS.
- Wellman, Barry (2001). "Physical Place and Cyberplace: The Rise of Personalized Networking". *International Journal of Urban and Regional Research*, 25(2): 227-252. doi: 10.1111/1468-2427.00309
- Winner, Langdon (1986). The Whale and the Reactor: a Search for Limits in an Age of High Technology. Chicago: University of Chicago Press.
- Wolfson, Todd (2014). *Digital Rebellion: The Birth of the Cyber Left*. Champaign, Illinois: University of Illinois Press.