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ABSTRACT

How can we explain the multiple uses that media organizations make of media technologies across the world? This paper proposes a hybrid conceptual framework that synthesizes ideas from the sociology of knowledge approach to discourse with science & technology studies concepts (i.e., script and technological frame) in order to emphasize the importance of policy and organizational discourses in shaping multiple uses of media technologies by media organizations. We apply the conceptual framework to study the case of Mídia NINJA, a Brazilian alternative media that gained popularity due to its innovative coverage of the 2013 riots in the country through collaborative practices and digital media technologies. Based on interviews and participant observation, we found that policy discourses to change the media structure influenced in time the discourse and practices of this alternative media in Brazil, leading to new uses of digital media technologies unintended by its designers. Thereby illustrating the importance of discourses to shape within certain boundaries the multiple uses of media technologies.

1. Introduction

How can we explain the multiple uses that media organizations make of media technologies across the world? One answer is to focus on the effects intended by its designers, for instance, many entrepreneurs and designers pioneering these inventions tend to believe that these are emancipatory technologies, because of their potential to democratize communication and change existing oppressing structures, particularly in authoritarian settings or where media ownership is highly concentrated. Indeed, digital media technologies have paved the way for the emergence of new types of communication (i.e., citizen journalism, social media, or live streaming groups, among others) by offering a more horizontal communication among users, who in many cases can post anonymously, breaking with the previous vertical and less participatory communication models. The Arab Spring, Occupy Wall Street, and the Brazilian riots in 2013 are examples of social mobilizations that new digital media technologies facilitated. However, critical observers have also

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stressed that incumbents can easily adapt such new technologies to conform to existing power structures, rather than contributing for progressive social change (Greenfield, 2017; Morozov, 2011; Saad-Filho, 2013). More recently, digital media technologies have paved the way to regressive types of communication as well, such as the spread of terrorist propaganda, or the massive growth of political propaganda and 'fake news' through bots and trolls, among others (Ferrara, Varol, Davis, Menczer, & Flammini, 2016; Howard & Hussain, 2011; Klausen, 2015). Hence, it seems evident that there are multiple potential uses for media technologies beyond those intended by its designers. Therefore, limiting the analysis to what media technology designers and entrepreneurs planned their technologies to achieve is not enough to comprehend media technologies' multiple uses.

Another answer comes from the field of Science and Technology Studies (STS), where it is widely accepted that different social groups – organized or unorganized groups of individuals – can attach different meanings to a technology, leading to multiple types of uses (Pinch & Bijker, 2012, p. 23). Therefore, although it might be true that there is a mainstream way of using a technology that depends on the imagined user thought by its designers (Akrich, 1992), during the initial phase of an innovation its users can interpret them differently both for 'social goods' and 'social bads'. Hence, designers and entrepreneurs do not entirely control how their technologies might be used (Kline & Pinch, 1996; Oudshoorn & Pinch, 2007, p. 544). Despite the importance of this perspective, this approach underspecifies the structural influences on why a given social group might make a starkly different reading of a media technology and not another one.

In this article, we shall argue that the discourses and the associated practices of actors employing media technology differently, influenced by broader policy and political processes in their context of operation, might also explain why they depart from the intended uses thought by the designers of media technologies. Specifically, we synthesize concepts from STS with the Sociology of Knowledge Approach to Discourse (SKAD), which is a popular perspective in the German-speaking community of discourse analysis suitable for studying the politics of knowledge production, dissemination and internalization in different areas of contemporary societies (Keller, 2013). We shall argue that the proposed approach is relevant to comprehend media organizations multiple uses of media technologies in varied parts of the world, in particular of alternative media. Therefore, this paper not only contributes to the growing body of work at the intersection of STS and media studies (Boczkowski & Lievrouw, 2008; Colbjørnsen, 2015; Siles & Boczkowski, 2012), but also to recent calls for de-Westernizing media research by analyzing an empirical case study from a non-Western country, and building more interdisciplinary conceptual frameworks (Boczkowski & Siles, 2014; Waisbord & Mellado, 2014).

In effect, we shall illustrate our approach by studying the case of Mídia NINJA, a Brazilian alternative media that emerged in 2013 to challenge mainstream media coverage during the 2013 riots, and which since then has become an alternative voice in the country's media sphere. Based on participant observation and in-depth interviews with members of Mídia NINJA and other actors related to cultural and media policies in Brazil, we shall argue that Mídia NINJA's interpretation of digital media technologies cannot be understood without comprehending its discourse, which depends on the wider policy-discourses and political changes taking place in Brazil at the time. Consequently, by investigating this case from a Non-Western context, we illustrate the importance of policy and

organizational discourses in shaping how media organizations might use media technologies differently.

The article will proceed as follows. First, it introduces the conceptual framework to research empirically the importance of discourses in shaping how media organizations might use new technologies. Second, it analyses the case of Mídia NINJA. Finally, the article concludes synthesizing the main results and the broader implications for the regulation of digital media technologies.

2. Conceptual framework

In this section, we introduce a hybrid conceptual framework, based on SKAD and STS concepts, to investigate how discourses facilitate particular uses of media technologies by alternative media. First, we shall explain and criticize the key concepts from STS that shed light on technology use. Second, we shall argue that SKAD is a suitable complement to explain the importance of broader discursive processes in shaping different media technology uses. Finally, we detail the hybrid conceptual framework that we apply in this paper.

Science and Technology Studies (STS) challenges the belief in technological determinism, which is at the core of many of the promises that technology entrepreneurs and firms advance through their utopian ideals of a 'better' life thanks to technology. In contrast, STS scholarship has systematically scrutinized and called into question such beliefs, by stressing the unstable social processes involved in the design and creation of technologies and scientific discoveries, far from the previously believed 'objectivity' and 'naturalness' of technological artifacts and scientific facts (Sismondo, 2010). Accordingly, researchers working in the STS tradition prefer to speak of a mutual shaping of technology and society (Boczkowski & Lievrouw, 2008). Despite challenges to the technological determinism thesis, the notion that technology has a direct effect in society is still widespread in contemporary scholarship on media and technologies (Greenfield, 2017; Milan, 2015; Schroeder, 2018). It is undeniable that technologies do influence social change, but in no way can it be argued that actors will react to it likewise (Kline & Pinch, 1996; Orlikowski, 2007). In effect, from an STS perspective, media technologies need to be studied not only by taking into account their materiality, but also by taking into account the meanings ascribed to them by its users (Boczkowski & Lievrouw, 2008). Accordingly, media technologies' use, on the one hand, might be shaped by the specific social context from which they emerged, encouraging one way of employing them over others; on the other hand, their use might not be the same everywhere (Carpentier, 2011).

This dual aspect of technology is nicely captured by employing concepts from different strands of STS, such as Actor-Network Theory (ANT), and the Social Construction of Technology (SCOT). On the one hand, although ANT's application for media studies is not exempt of criticism (Couldry, 2008), it provides the concept of a script, which precisely refers to how designers intend technologies to guide the action of an imagined user in some particular way but not in others (Akrich, 1992, p. 208). For instance, a speed bump in the middle of a road is a technological object, designed to reduce the speed of drivers, which invites some types of actions – to slow down – and puts barriers up for others – to speed up; hence, a decision has been delegated to the artifact (Latour, 1992). Consequently, if not challenged, the use of a technological artifact in another context,

following the original script, leads to its enactment, thereby reflecting the desired intentions of its creators and producing action at a distance. On the other hand, Akrich (1992) also observed that if the context of use differs considerably, or if users de-script the original script, it might not be enacted as the designers planned. Yet, the cultural, economic, political and social processes that might shape why a user challenges the intended script is underexplored in ANT (Oudshoorn & Pinch, 2007, p. 551), because of its focus on detailed descriptions of the associations between human and non-human actors, rather than making any reference to broader contextual variables (Latour, 2005, p. 144).

This shortcoming is addressed by another strand of STS, the Social Construction of Technology (SCOT), with the concept of technological frame, which '[…] *comprises all elements that influence the interactions within relevant social groups and lead to the attribution of meanings to technical artifacts – and thus to constituting technology*' (Bijker, 1995, p. 126), such as problem-solving strategies, design methods, users' practice, among others. Therefore, relevant social groups – including users – may attach different meanings to artifacts that depart from the intended mainstream use devised by its designers, illustrating the 'interpretive flexibility' of technologies (Pinch & Bijker, 2012). For example, the typewriter was originally designed for the blind, but this did not prevent users reinterpreting its use and the subsequent widespread adoption in work settings (Verbeek, 2006, p. 365). This is an important insight that has influenced the development of the concept of sociomateriality for the study of technology use in organizations (Orlikowski, 2007), which understands that the material and the social are entangled. However, these concepts are not enough to understand why a given social group might attach one type of meaning to a technological artifact and not another one. This is an important blind spot, because although it might be true that in some cases the material and the social are interrelated (Orlikowski, 2007), it cannot be ignored that its interaction is the outcome of a process that takes place in time (Leonardi, 2013).

We argue that this shortcoming can be addressed by synthesizing STS concepts with the Sociology of Knowledge Approach to Discourse (SKAD), since it puts the focus on the discourses that a social group might have developed in time, shaped by the broader socio-political processes in the context in which it is located. SKAD synthesizes ideas from Foucauldian poststructuralist discourse research and the sociology of knowledge pioneered by Berger & Luckmann (Keller, 2013). Indeed, SKAD understands that '[…] *everything we perceive, experience, sense is mediated through socially constructed and typified knowledge (e.g., schemata of meanings, interpretations and actions) – a knowledge, that is, to varying degrees, recognized as legitimate and "objective"*' (Keller, 2013, p. 61). The central point of this approach is that humans are not born with an innate set of concepts; instead, these are acquired and changed through '*(…) socially created symbolic systems that are produced in and through discourse*' (Keller, 2013, p. 61). In contrast to Berger & Luckmann's approach, which focused on everyday knowledge, SKAD '[…] *is concerned as well with processes and practices of the production and circulation of knowledge at the level of institutional fields*' (Keller, 2013, p. 61). Therefore, this approach is suitable for studying the politics of knowledge production, dissemination and internalization in different areas of contemporary societies, such as communication & cultural policies and discourses of media organizations.

Among the concepts that SKAD offers to study discourses, we employed the following three: Statements, practices and apparatus. The first refers to patterns in a set of utterances

(Keller, 2013). SKAD divides the second concept into discursive and non-discursive practices, where the former includes all forms of statement production that become materialized in texts that are not only written, but also audio-visual. The latter, conversely, refers to actions that are not discursive but are influenced by a discourse; for instance, how a particular way of dressing is associated with a religious discourse. Finally, apparatus is a concept that SKAD borrows from Foucault's work and which comprehends the material and ideational objects through which a discourse is (re)produced and the power effects it might exhibit (Keller, 2013). Therefore, apparatus translate the patterns of a discourse into a specific set of practices, stressing the links between discourse and materiality, which is an important insight into understanding how policy changes might shape media organizations.

Figure 1 outlines the hybrid conceptual framework synthesizing SKAD with STS concepts, in order to explain the broader socio-political processes shaping the way in which alternative media might appropriate media technologies. Below we detail the three main levels of analysis proposed for our case study: media structure, policy discourses, and alternative media.

The first level assumes that the media structures in a specific context and time condition every media organization within that space of operation. We consider a broad media structure definition, covering the existence of laws, the effects of previous cultural and media policies that might have influenced the way media operate (van Cuilenburg & McQuail, 2003), prevailing journalists' codes for reporting in a given culture (Hanitzsch et al., 2011), media ownership patterns (Becerra & Mastrini, 2008), technologies, etc. Hence, this concept resembles the idea of a media system (Hallin & Mancini, 2004), but we do not claim that closed media systems exist independently from others in each country. Given the globalization of Internet platforms, this obviously is not the case; nonetheless, even these transnational communication flows are highly dependent on the
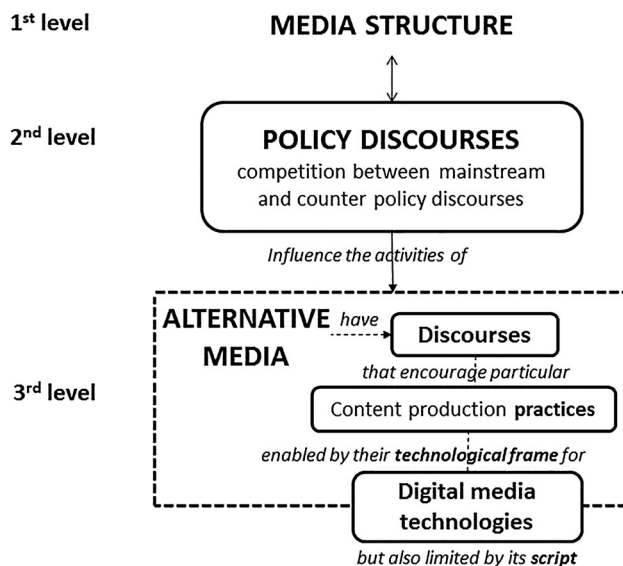

Figure 1. Conceptual framework for studying alternative media's appropriation of media technologies.

specific structure in which they operate, such as firms offering services to individuals in Europe that have to comply with the requirements of the new General Data Protection Regulation. Accordingly, we prefer to use the broader, and perhaps more indefinite, term of media structure, in order to investigate empirically in each context under study the specific institutional set up.

The second level, policy discourses, covers the variations and competition between different policy ideas on how the media structure ought to be fashioned. We assume that changes in policy discourses are path dependent on the previous decisions that led to the pre-existing structures. As a result, we propose to study through SKAD this dynamic variation in policy-discourse and the communication practices that they stimulate.

The third level focuses on the media organization of interest; in our case, an alternative media, suggesting how the specific discourses of these media, influenced by policy discourses and the media structure, shapes their use of media technologies. In this level, we synthesize SKAD and STS concepts, by employing the idea of a script and technological frame to investigate technologies, rather than apparatus. This is convenient, because the term is too broad for specific research questions on the technology used by alternative media. Instead, script and technological frame provide extra precision on the affordances and constraints of media technologies. It is also worth to point out that we call alternative media to any media organization striving for social change in its particular context of operation, irrespective of its political aims. We assume that these types of media will face resistance and challenges of diverse types and intensity from incumbents, thus leading them to operate in more or less difficult environments. Hence, this flexible definition of the concept differs from existing ones (Atton, 2002; Waltz, 2005), which tend to be restricted to cases striving for progressive social change, which is not something to be ashamed of if we wish to secure a more egalitarian future. Nonetheless, a broader definition is far more useful to consider terrorist, right wing, or other types of extremist media organizations as well.

3. Case study: Mídia NINJA

In this section, we employ the conceptual framework to analyse an alternative media in Brazil, namely Mídia NINJA. First, we describe the media structure and policy discourses, which show, on the one hand, how the historical development of the media structure has favored concentration in a few private, for-profit media firms, contrary to other types of media. On the other hand, we explain how the expansion of ICT and a new policy-discourse for cultural policies has facilitated digital media practices. Second, we describe Mídia NINJA's specific discourse, which encouraged by recent policy changes, strives for a 'collaborative economy' through innovative content production practices. Nonetheless, we shall show that the digital media technologies that put Mídia NINJA closer to achieving its aim are not exempt from contradicting their objectives.

3.1. Media structure and policy discourses

One of the main characteristics of the Brazilian media sector is its high level of geographic centralization in São Paulo and Rio de Janeiro, and ownership concentration in the hands of a few rich Brazilian families. Several media researchers agree that a 1962 legislation

favoring the private sector unleashed this concentration process (Bolaño, 2007; Mattos, 2005). The downside of this decision was the overall reduction of content diversity, particularly from other regions of the country. The most prominent example is the Globo Group, which inaugurated TV Globo in 1965, time of Brazilian military dictatorship, and became one of the most powerful business television networks in the world (De Lima, 2005). Partly, this can be explained by their alliance with the military, which was covered in convenient ways and helped facilitate the company's impressive growth in audience share, estimated to having reached around 80% in the 1970s (Skidmore, 1999). Brazilian researchers have systematically shown the negative consequences of the excessive power of this network (De Lima, 2005; Ramos, 2005), such as its capacity to defend media privatization, or its opposition to initiatives striving to regulate private media in Brazil (Ramos, 2005), or disseminating content that reinforces negative stereotypes of minority groups, among others.

After the country returned to democracy, media ownership concentration remained high in Brazil, and the Globo Group's influence over the nation's political agenda has persisted (Benevenuto, 2005). Not surprisingly, since the 1988 Brazilian constitution that included a chapter on social communications, several civil society groups and media organizations have begun to strive actively toward the introduction of fairer communication structures (Benevenuto, 2005; Matos, 2012; Skidmore, 1999). Civil society organizations expected that the arrival to power of Lula Da Silva in 2003 would lead to their desired change in the Brazilian media structure, but despite some progress, Lula's and Dilma's administrations were not successful to update the media regulatory framework as it happened in neighboring countries like Argentina (Matos, 2012). Indeed, according to the project by *Donos da Mídia* (2016), which mapped media ownership in Brazil, Globo maintained its leading position among national TV networks, and many journalists claim it played a key role in the political campaign against Dilma. Hence, it is safe to say that the mainstream policy discourses still defend the *status quo*, namely a commercially oriented communication policy, favoring large private corporations (Bolaño, 2007), which essentially understand that information is just another commodity to be traded in markets.

Nonetheless, two factors have put pressure on the predominance of private mass media. First, the economic growth in Brazil has facilitated the expansion of ICT and smartphones among the population, thereby democratizing access to new digital media platforms that are more horizontal than traditional media. Second, Lula introduced policies in the cultural sector that indirectly influenced the media sector,[1] as they contributed to expanding the capabilities of the Brazilian population to use ICT for the diffusion, consumption and production of information beyond mass media outlets. In particular, in 2005 the Ministry of Culture initiated the program Cultura Viva (Living Culture), which aimed at supporting community-based organizations, relating mostly to low-income sectors that previous policies had overlooked. This program had a component called Cultura Digital (Digital Culture) that fostered the creation of networks among these actors, encouraged their active use of ICT and open source software, and disseminated the benefits of creative commons licenses (Fernandes, 2010; Ministério da Cultura, 2005). This matters for this paper, because such policies also inspired networks of so-called 'free media', to cover news through the active use of ICT and following the network principles of organization stimulated by these policies, contrasting with previous commercially oriented policies (Vila

Seoane, 2017). Consequently, the Cultura Viva program advanced a policy-discourse that stimulated new practices, thus challenging pre-existing commercially ones, influencing the discourse of many cultural and media organizations, such as Mídia NINJA.

3.2. Mídia NINJA's discourse

In June-July 2013, few months after its creation, Mídia NINJA achieved high levels of followers, because of its original coverage of the widespread riots in Brazil. These protests initiated as a demand to reduce transport fares, but soon incorporated several others, such as the fight against corruption or against the 2014 World Cup, gathering diverse social groups that posed an unexpected challenge to Dilma's government (Saad-Filho, 2013). The network transmitted scoops of police violence that at first mainstream right-wing media ignored, and then later criticized and stigmatized. Furthermore, by streaming news using smartphones through different social media platforms, Mídia NINJA had the unique chance to make public citizens' voices with little editorial control, contrasting with the malicious intention of mainstream right-wing media to appropriate the protests claims against the ruling government (Saad-Filho, 2013). At the time, this was an innovative way of covering events in Brazil, since few other alternative media had fully embraced the potential of digital media technologies to compete against mainstream media. Not surprisingly, Mídia NINJA coverages became quite successful. Actually, many of the videos went viral, which increased the visibility and number of the network's followers at the national and international levels. This media success put Mídia NINJA under the spotlight of mainstream media coverage, although not necessarily in a friendly tone. This negative coverage was not surprising given the conservative political editorial lines that prevail in Brazil, and the threat from Mídia NINJA's new and successful media model. Despite the hurdles Mídia NINJA had to endure, it has emerged as a new type of online and collective alternative media that to these days plays an important role in disseminating critical information and challenging the mainstream commercial media in Brazil. In this section, we explain the main features of Mídia NINJA's discourse, and we claim that it works as the apparatus of the broader cultural network operating in Brazil that created it to disseminate its collaborative practices and discourse, the so-called cultural circuit Fora do Eixo (Off Axis).

In 2005, four cultural collectives[2] founded Fora do Eixo in order to stimulate the production, circulation and distribution of cultural content from the interior of Brazil. Accordingly, it aims to overcome the challenges that cultural producers experience operating in cities far from the main cultural centers (the axis of São Paulo and Rio de Janeiro). Instead of following the mainstream commercial discourse and associated practices for cultural firms in Brazil, Fora do Eixo statements and peculiar practices outline a unique discourse with the following characteristics. First, it has a utopian dimension, since it seeks to create 'another new possible world', a motto borrowed from the World Social Forum, where social movements more broadly aimed to offer an alternative to neoliberal globalization. Second, the network states that it values more the collective over the individual. This statement opposes the entrepreneurial and individual perspectives of neoliberal, commercially oriented cultural policies. Third, Fora do Eixo defends the use of free software and free access to content and culture as long as authorship of the network is recognized, which was a decision originally in line with the national policies of Lula's government (Ministério da Cultura, 2005). Indeed, members of the network publicly

recognize the influence of the Ministry of Culture's policies in their project, specifically during the leadership of the musician Gilberto Gil. Fourth, and also in line with the new cultural national policies of the time, Fora do Eixo's discourse addresses the diversity of previously neglected ethnic and low-income sectors in Brazil. Finally, given their focus on the collective and the defense of free culture, they claim to be practicing a 'collaborative economy', which comprehends free training, free sharing of knowledge and the use of complementary currencies for the exchange of products and services in order to circumvent resource scarcity.

Although Fora do Eixo's practices are not exempt of criticism (Garland, 2012), what matters for this paper is that at the end of 2012 they decided to establish Mídia NINJA in order to cover news following its collective discourse and practices. Among the reasons for this decision, two are worth pointing out. First, Dilma's administration reduced the funding to the Cultura Viva program, which was a shift in Brazilian cultural policies that endangered the previous support for networks of cultural collective and creative commons. This led several cultural movements to become involved actively in political mobilizations to defend previous policies. Fora do Eixo was part of this movement, and from 2012 onwards, it became actively involved in national political debates in order to influence public opinion in directions synchronizing with their discourse. Second, the massive expansion of ICTs in Brazil and the emergence of new digital media technologies, together with the failure of mass media to cover the complexities of contemporary Brazilian society, led to a crisis in mainstream journalism, which left open windows of opportunity for new experiences to emerge.

In this context, Mídia NINJA's statements and practices cultivate a discourse with the following five characteristics.. First, Mídia NINJA conveys an identity that counter-informs what the most popular private media outlets narrate in Brazil, stressing that it has an independent editorial line, because in contrast to private media, it apparently receives no funding from advertising. Second, the experience applies the collaborative economy practices of Fora do Eixo, which challenge those of leading commercial media outlets. For example, members that dedicate most of their time to the project do not earn a salary but cover their living costs with the income that the cultural network generates through other sources, including community currencies. Furthermore, Mídia NINJA distributes all of this content free of charge and generally under collective authorship (most of the content is signed as a product of the organization and not of its creators). This practice, rooted in the belief that every cultural production is a result of a social process that cannot be fictitiously reduced to the work of an isolated individual, evidently contests copyrights and limiting access to online content to charge for it. Third, Mídia NINJA members believe that everyone can become a NINJA, i.e., a journalist in the network contributing to the collective narrative that fights against what they perceive as social inequalities and injustices. This statement reflects Mídia NINJA's view that we live in a network society, with blurred lines between producers and consumers of content, given the new and easier ways to produce and disseminate content. This perspective is a challenge to established journalists, since it encourages amateurs to compete against professional journalists in the coverage of news, but for critics it is also a way of exploiting labor. Fourth, in contrast to mainstream Brazilians news organizations that claim to practice the professional ideal of objective reporting (McQuail, 2010), Mídia NINJA members defend taking explicit sides in their coverage, which they see as an essential practice that shows

their transparency in news production, rather than what they understand as the façades that mainstream media built to hide their clearly politically-biased agenda. Finally, and most importantly for this paper, Mídia NINJA does not accept that technology has a script that will inevitably lead its users to employ it as the designers intended. Instead, it encourages its members to understand, change and 'hack' media technologies so that they can fulfill other objectives, besides the ones for which they were originally designed. Accordingly, Mídia NINJA has a technological frame, inspired by the broader digital culture movement in Brazil, that actively takes advantage of the interpretive flexibility of technologies, in ways favorable to their organizational aims.

3.3. *Mídia NINJA's use of digital media technologies*

In this section, we detail how the Mídia NINJA's utopian discourse, influenced by Fora do Eixo and broader policy and political processes to change the media structure in Brazil, has paved the way to original appropriations of digital media technologies. However, we shall also argue that the key dimensions of their discourse are not free from material constraints that put serious limits on what they can achieve in practice. Hence, the case of Mídia NINJA is an example of the idea of a script, but also of technological frame that depends on the existing discourse that Mídia NINJA has developed, shaped by Fora do Eixo and the policy discourses in competition in Brazil.

On the one hand, Mídia NINJA's success depends on the use of digital media technologies, such as smartphones and social media platforms (i.e., Facebook, Twitter, YouTube, and Twitcasting). These digital media technologies have allowed them to circumvent the high entry costs of previous media to disseminate their content, counter-balancing the excessive influence of mainstream media in Brazil, such as the Globo Group. At first sight, the use of these technologies to produce content does not seem very different to what many other organizations around the world are doing. It also sides with the reading that technologies determine media organizations' practices, because of their inherent script. In effect, these digital media technologies were produced in the context of industrialized countries, with for-profit aims based on new data-driven business models that depend on profiling users' activities for selling advertising. Consequently, it can be argued that by using smartphones and social media platforms Mídia NINJA reinforces the Californian Ideology (Barbrook & Cameron, 1996), i.e., the dominant mantra of Silicon Valley firms, which is a mixture of free market libertarianism aligned with a belief in the emancipatory potential of technologies.

Likewise, by using these media technologies, Mídia NINJA is contributing to the process of concentration and privatization of data and media content in foreign Internet platforms, which is collected in servers located mainly outside Brazil. This is problematic, because these platforms, which do not always side with progressive causes (Youmans & York, 2012), are becoming even more influential than local mainstream media that Mídia NINJA criticizes in Brazil. Accordingly, Mídia NINJA's use of these technologies contradicts their aim of defending free culture and fighting the privatization and centralization of media production in few firms, suggesting that users cannot so easily avoid digital media technologies' script.

On the other hand, Mídia NINJA's use of these technologies departs considerably from the imagined user that its designers would have expected: An individual, isolated, but

networked consumer in line with the expected subjects of (neo)liberal democracies. Certainly, two practices that are widespread among Mídia NINJA members, shaped by Fora do Eixo and the Cultura Viva policy discourse, challenge such a script: Collective houses and collective cash. First, many of its members live in Fora do Eixo's collective houses (*casa coletiva*) where they share living costs, clothes, and food. Second, in these houses, its members manage collectively their funds, which they call 'collective cash' (*caixa coletivo*). Simply put, every member living in a collective house deposits his or her money inside a box, and registers the in-outs of cash. According to one of its members:

> When we set up a collective cash system, we share everything. This allows us to see in practice how the dynamic of collective life works. Giving up everything you have is very difficult. However, people in the hard core of Fora do Eixo did so with many things, which is why we speak of free culture. (Personal communication, February 7, 2014)

These non-discursive practices encourage members of the organization to experience the 'collective lifestyle' that they advocate on a daily basis, challenging all the basic assumptions of discourses based on private property and individualism that are at the core of commercial media enterprises. In that sense, the experience resembles the first years of the *kibbutz* in Israel, albeit in the cultural sector. These practices matter to understand how Mídia NINJA appropriated digital media technologies, because many of its members, who live in Fora do Eixo's collective houses and use collective cash, translated them into collective journalism practices, for instance, by signing most of their content as a collective production rather than an individual achievement. Besides, they have introduced the idea of a 'collaborative coverage', which, according to their definition, encompasses:

> […] the coverage of an event performed by people with skills in different areas of communication and guided by free media principles and open participation. This generates textual, photographic, audio-visual, podcasts and content updates in social networks. It produces a collaborative and diversified result by allowing everyone to put his gaze on the subject. (Fora do Eixo, 2013)

In essence, during the events that the organization covers, it first offers open invitations to people from the broader Fora do Eixo network and external candidates to collaborate by becoming Mídia NINJA journalists. Then, Mídia NINJA divides roles among those interested in performing different tasks, such as filming, taking photos, writing posts, etc. In this way, every person who showed an interest in the event is able to contribute somehow to the narrative that the organization produces and distributes free of charge across social network platforms.

Undoubtedly, such collective journalism would be hard without the affordances of digital media technologies, such as social media platforms, which have a script that enable a participatory and more horizontal media culture. Nonetheless, the key point to underscore is that the pre-existing discourse and practices of Fora do Eixo shaped Mídia NINJA's use of these technologies, explaining the transfer of their daily open and collective lifestyle to their content production practices, contrasting considerably with those prevailing in mainstream commercial enterprises that are for-profit and restricted to professionals. Therefore, the possible uses of digital media technologies are not entirely limited to scripts emanating from the context of use taken for granted by its designers, rather, they can be adapted to differently by users, if they have the aim of challenging the embedded script. This was the case in Fora do Eixo and Mídia NINJA, whose technological frame considers

'hacking' as the appropriation of technologies to disseminate their collective discourse. Thus, this technological frame together with the affordances of social media exemplifies the mutual shaping between discourse and technologies.

Yet, the origin of this technological frame cannot be understood without acknowledging the influence of a national policy discourse initiated under Lula's government stimulating cultural and media networks of low-income sectors (i.e., Cultura Viva), which encouraged various types of participatory and network practices with the aim of changing the existing unequal media structure in Brazil. Thus, this case suggests that the circulation of discourses from the policy to the organizational level might pave the way for particular imbrications in time between media organizations and technologies (Leonardi, 2013), explaining the emergence of specific technological frames.

4. Conclusion

In this article, we have argued that the specific discourse and practices of media organizations might be shaped by broader policy discourses in their context of operation, substantially influencing the way they might interpret and adapt existing media technologies. Therefore, this approach details further the claim in the social construction of technology that relevant social groups develop technological frames that can attach different meanings to technologies. We showed this by dividing the analysis into three levels in order to acknowledge the influences of the media structure and policy discourses on the discourses and practices of alternative media. The first two levels, media structure and policy discourses, capture the specific institutional pathways that operate in the given context under investigation, as well as the dynamics of contention between different policy discourses on how culture and communications ought to be viewed. The third level puts the focus on the link between previous structural dimensions with the discourse and practices of alternative media. Nonetheless, we have also acknowledged the notion of script, which illustrates how technologies might lead to certain practices intended by its designers, placing boundaries to dimensions of such discourses.

We applied the conceptual framework to the case of Mídia NINJA, a new type of Brazilian collaborative and online media organization, whose members record content with smartphones, stream it live from the streets, and produce texts and photos that are widely spread, free of charge, in commercial social networks. We maintained Mídia NINJA cannot be understood without comprehending its mother organization, Fora do Eixo, which has developed peculiar collaborative practices for living, resembling a cultural Kibbutz, considerably influenced by national policy-discourses in Brazil that promoted networks of diverse actors to change the cultural and media structures of the country. These practices materialize and reinforce their discourse of a collective lifestyle that challenges the individualist production and consumption ones based on private property rights prevalent in contemporary capitalist market societies. These practices, together with a discourse that encourages 'hacking' technologies, configure a technological frame that explains Mídia NINJA's appropriation of commercial digital media technologies for producing collaborative and free journalism online, in such a way that the designers of the technology had not intended. Despite their utopian project, our description and analysis reveal that the organization is far more constrained in putting into practice their discourse than what they

would like to admit. Indeed, we have argued that Mídia NINJA cannot completely avoid the commercial script of social media platforms, since its business models work by quantifying, profiling, and monitoring everything that its users do in order to sell advertising. Nonetheless, in this case, it is not only true that the technology shapes its practices, but also that the agency of Mídia NINJA members, who practice a collective lifestyle, can shape within certain boundaries the media technology they employ.

Although the case described in this article resonates more with the polarized political landscapes that we see in many Latin-American countries, we think that the constructivist approach we employed to elaborate a hybrid conceptual framework could be adapted to other contexts and different types of media technologies. Thereby, enriching our understanding of how media organizations across the globe – whether progressive, right wing, terrorist, religious, etc. – adapt media technologies for their aims, illustrating the constrains that technologies' designers and entrepreneurs have when trying to augment or constrain the potential – 'good' and 'bad' – uses of their inventions. This is important, for instance, in preventing the manipulation of digital media technologies by terrorists, where regulations on technology firms' designs will never be enough, unless policy makers also actively disseminate policy discourses that weaken the radical ideas that energize the malicious interpretation of media technologies for the spread of terrorist propaganda and related practices. We hope that researchers can adopt and extend the proposed constructivist approach to such other cases, facilitating our knowledge on the various ways in which media organizations use media technologies in different parts of the world, and in this way, empirically contributing to de-Westernize media studies.

Notes

1. Indeed, the Ministry of Communication defended the interests of larger networks, whereas the Ministry of Culture implemented policies to democratize cultural and communicational practices (Bolaño, 2007).
2. Cultural collectives emerged in four cities: Cuiabá in Matto Grosso, Uberlândia in Minas Gerais, Rio Branco in Accre and Londrina in Paraná. All of these examples are quite small cities in comparison to the main cultural capital centers of Rio de Janeiro and São Paulo.

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