WHO AND WHAT DO JOURNALISM?
An actor-network perspective

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Technology is typically seen as an instrument that aids journalistic processes. Digital artifacts, however, are seldom considered as active participants. Tautologically, journalism is defined as a practice of journalists. But journalism would not be the same without the role played by technological artifacts. To assess such a problem, this article discusses the ontological contributions from actor-network theory and how they may help to disclose the complex associations between a multiplicity of actors involved in journalism. Besides asking "who" does journalism, we argue that it is also necessary to assess "what" does journalism. We then show how technological actants transform journalistic practices in two recent processes: newsroom convergence and the creation of news by algorithms. Finally, we argue that this new ontology demands epistemological and methodological transformations in journalism studies.

KEYWORDS actants; actor-network theory; algorithms; convergence; journalism; ontology; technology

Introduction

Journalism theories typically focus on the practices of journalists. However, journalism is more than what a journalist does. Moreover, ideologically driven theories adopt a deterministic perspective by describing what journalism should be. Rather, theories of journalism should allow scholars to interpret journalism the way it happens, instead of trying to determine what reality should look like.

Against those essentialist views, theoretical efforts that aim to consider the complexity of journalism need to consider the multiplicity of actors and the different associations that make it happen. From the computer to citizen journalists, a variety of participants may contribute to journalistic processes.

It is true that technology has always been discussed in journalism studies. Journalism itself is born and undergoes constant transformations because of technological developments (Pavlik 2001; Kovach and Rosenstiel 2011). However, analogical and digital artifacts are now as naturalized in newsrooms as the taxi is to the taxi driver (Plesner 2009). Accordingly, technology seems to disappear in journalistic practices, as it blends into everyday routines. Couldry (2008) notes that live coverage conveys the idea that the media provides direct connection to the events as they happen. That is, live media becomes a "black-box." But there are other actors that are hidden within. To assess such a problem, we will discuss the ontological contributions from actor-network

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theory (ANT) and how they may help disclose the complex hybrid networks that allow journalism to come about.

According to this perspective, associations involve human and non-human actors (or actants, in ANT's vocabulary). Therefore, the question "who does journalism?" now shows its limitations. Journalism in not produced solely by the "social relations" among editors, journalists, and sources, but also by non-human actants (such as computer networks), which participate in the process, transforming it (Plesner 2009). Hence, we argue that that question should be reformulated as such: "who and what do journalism?"

It is time to bring everyone and everything that is not a professional journalist back to the foreground. If these actors are lit again, the stage becomes crowded and a different scene may be viewed. As soon as they are all seen as participating actors of journalistic processes, new questions may be asked. Consequently, different conclusions may emerge and a different scenario becomes visible. This demands updates and new perspectives on journalism.

In this article, we concentrate our efforts on the discussion of journalism actors. As naming professionals or specific publics (reporters, editors, readers, etc.) may just result in a partial account, we focus on the role played by technological artifacts, understood as full-blown social actors, with transforming roles. Evidently, journalism would be different today without digital technologies. In fact, it would not even exist—at least as it is now known. Thus, journalism theories need to consider those artifacts as important as any other actant in the ongoing process of news production, circulation, and consumption.

Our aim is to promote a reflection on the ontology of journalism. Though necessary, it is not sufficient to refer to the intricate relation between digital technologies and journalists' practices, if the former is still thought of as a tool, playing no more than a supporting role. Even though their transforming presence may be recognized, an unbalanced relationship is portrayed. As soon as the agency of artifacts is recognized, as well as the transformations that it exerts over associations and other actants, the very definition of journalism needs to be reconsidered. Such an ontological turn certainly has important epistemological consequences, bringing what is thought to be under dispute.

Previous articles (Hemmingway 2007; Plesner 2009; Schmitz Weiss and Domingo 2010; Van Loon 2011; Micó, Masip, and Domingo 2013; Anderson 2013), within a still limited literature on ANT and journalism, have showed how digital artifacts should be treated as actants. We intend here to further the ontological debate on journalism and agency. As we will show, news outlets may publish articles produced entirely by algorithms. On the other hand, we argue that not every text written by professional journalists becomes journalism. Besides criticizing the anthropocentric traditions (e.g. humanistic, sociological) in journalism studies, we also question the partial perspectives that concentrate in just a fraction of the process, taking news production as journalism and newsrooms as its locus. These biased depictions are a recurrent symptom of theories dedicated to the practices of (human) professional journalists.

In order to achieve these goals, we begin by showing that the history of journalism develops with the history of technology. Then, we present the main premises of ANT and discuss how it can broaden the understanding of what journalism is. Later, we illustrate our points with two processes in which the agency of technological actants may be most clearly perceived: newsroom convergence and automated news production. Finally, we discuss how ANT may shed new light on the epistemology of journalism.

Technology and Journalism

The history of journalism is tied to the evolution of technology (Pavlik 2000; Deuze 2007; Briggs and Burke 2010; Heinrich 2011). Since the Roman official notes carved on stone to the latest news tweets posted live from an event through a smartphone, news production and circulation have developed side by side with communication technologies. This section intends to stress how technologies are inherent to journalism, not an accessory part. The importance of these artifacts in journalism is such that even its fields or genres (such as print journalism, broadcast journalism, and digital journalism) have been tied to a specific technology. Despite its brevity, the following historical review is important to highlight how this intimate relationship is later ignored, as soon as a definition of journalism is pronounced.

Print newspapers depend on the technology of print, which goes back to the invention of Gutenberg's printing press in 1447. Periodical newspapers appeared in the first half of the seventeenth century. Telegraph started to be used for the long-distance transmission of news in the 1850s (Heinrich 2011). Alexander Graham Bell's invention of telephone in 1876 not only transformed telecommunications but also how journalists gather news, such as in telephone interviews (Pavlik 2000). The invention of radio around the same period brought a new relationship between news organizations and its audiences. The emergence of broadcast journalism allowed people to hear news events directly. Later, in the 1950s, television provided a different experience: besides listening, the public could watch the news (Kovach and Rosenstiel 2011). The first use of a computer in journalism took place in 1952, but computers started to become commonplace in newsrooms only by the 1980s (Cox 2000). It was in the mid-1990s, with the commercial opening of the internet, that the computer started to be considered as a medium and the first attempts at digital journalism began (Pavlik 2001).

Early studies connecting information and communication technologies (ICTs) and journalism were linked to efficiency, exalting the potentials of new technologies for the development of "computer-assisted reporting" (Plesner 2009). The computer was seen as an aid for journalism, which could even replace traditional communication practices (such as face-to-face encounters or the telephone). Those approaches, hence, were limited to an instrumental view on digital artifacts.

But the relationship between technology and journalism goes beyond seeing the first as a substratum to the second. According to Pavlik (2000), technology influences journalism in four major areas: how journalists do their work, the content of news, the structure or organization of the newsroom, and the relationships among news organizations, journalists, and their many publics (audiences, sources, competitors, sponsors, controllers of the press). Yet, technology is portrayed as an external force (influence) that impacts humans and what humans produce. Such oppositions (inside/outside, humans/non-humans, cause/consequence), as well as other contrasts—such as micro/macro and professional/amateur—populate journalism theories. These binary strategies, however, artificially fragment journalism, reducing what is an entangled network to opposing poles.

What we defend is a perspective change. Looking through the lens of ANT, technology plays such a transforming role that we argue that it also *does* journalism. In order to develop this point, in the next section we turn our attention to ANT concepts and how they can be applied to the understanding of journalism.

Technological Artifacts as Actors in Journalism

What is journalism? Kruckeberg and Tsetsura (2004, 84) respond without any doubt: "we can be no more precise to argue that journalism is what journalists do." This tautological formula (Hanitzsch 2005) still needs to be overcome. Although several efforts try to recognize other social actors that directly or indirectly participate in the journalistic process (the cableman, the driver, the telephone operator, the reader that calls to report a problem, etc.), there are still many others that remain invisible. Even though this multiplicity of actors participates in diverse moments and modifies the process in an irreversible way, they are rarely considered or solely mentioned as external variables. This invisibility is not due to a potential transparency or intangibility. Their disappearance, as soon as one decides to list the participants of the journalistic process, begins with the limitation of what is considered an actor.

The redefinition of this concept by ANT is of particular interest to our later argument. As soon as one understands the real reach of the concept of an actor, how actors relate with other actors in a network, and how the network relates with each actor, it becomes possible to perceive the ontological limitations of the theories that try to explain social processes. The same is true with the study of journalism. After describing what ANT understands by "actants" and "social," we will then be able to discuss the agency of technological artifacts, how they act as mediators, co-producing journalism. Later, in future sections, we will use these concepts and premises to discuss the ontology, the epistemology, and the methodology of journalism studies.

According to ANT, the social is treated by traditional sociology as stuff, as a type of material. The latter, an essentialist perspective, views the social as a substance that qualifies something or a phenomenon *a priori*, and from which it is possible to derive conclusions and even predictions ("if that is social, thus..."). This is what Latour (2005) calls "social determinism." As we will show, this type of fatalistic force has historically misled journalism theories. While technological determinism is often observed and criticized in papers on digital journalism (Steensen 2011), the effects of social determinism in journalism theories needs to be definitely addressed.

The sociology of associtations (an expression used by Latour as a synonym for Actor-Network Theory) addresses a sounding criticism to what it calls the sociology of the social. For Latour (2005, 8), traditional sociologists have "simply confused what they should explain with the explanation." ANT, however, does not believe in the possibility of a matter or a social force that backs phenomena and that might explain them. The social is a product of associations, but not an explanation. In other words, by negating the social as a leading force, ANT tries to observe the short-lived interactions that happen while the momentary associations occur. As Latour (2005, 65) explains, instead of a domain of reality, the social is a movement, a transformation (and thus the frequent use of the term "translation"): "It is an association between entities which are in no way recognizable as being social in the ordinary manner, except during the brief moment when they are reshuffled together."

Based on this view, ANT furthers the understanding of what an actor is. In short, an actor is whatever makes a difference in the ongoing action; it is what is made to act by many others (Latour 2005); or "any element in the network that acquires strength in association with others" (Hemmingway 2007, 24).

By deepening the comprehension of what actors are, and moving beyond the observation of humans interacting in an objectless world, Latour (2005, 5) states that the social should be thought of as "a trail of associations between heterogeneous elements." Everything that is not human, but participates in the emergence of the event, transforming it, cannot be taken just as context or background. More than a simple scenario, things allow that certain actions happen, besides constraining and influencing others.

In summary, moving away from deterministic frameworks, ANT seeks to assess the dynamics of heterogeneous associations while they occur. By revealing such complexity that seemed invisible until then (or observers preferred not to see), new descriptions and conclusions may emerge, as other questions may be asked.

While Silverstone (1994) and Couldry (2008) have previously discussed the pertinence of ANT to media studies, few efforts have been made to relate journalism and ANT (Hemmingway 2007; Plesner 2009; Schmitz Weiss and Domingo 2010; Van Loon 2011; Micó, Masip, and Domingo 2013; Anderson 2013). We believe that ANT's nonfunctionalist perspective and its skepticism about essentialized concepts (Couldry 2008) —"the social," "the technical," "the cultural"—may significantly contribute to further the understanding of how journalism happens.

Based on ANT's ontological propositions, we argue that journalism should not be seen through purist standpoints, which define characteristics it needs to have to honor its name. Journalism is not a tag that may be attributed to some texts and images. Instead, it is a momentary process that takes place while specific associations are maintained. In other words, nothing is journalism *per se*. Journalism happens. Journalism becomes.

The prescription of what is good journalism, how it needs to be, or who is authorized to work as a journalist are no more than social deterministic approaches. Yes, it is common for working fields to have their codes of excellence. Scholars, though, should not confuse these propositions of ideal conditions and routines with reality itself. Essentialist definitions of journalism function as if all actors were known, their behaviors could be foreseen, and all expected products were created in a vacuum, according to some standards. Any divergence would not be considered journalism.

We want to stress that journalism cannot be reduced to what a journalist does. Besides the problems of circular reasoning and self-referentiality, that simplistic postulate excludes everything that is not human. Technology is left outside, as something extraneous. Even though no practitioner or scholar would deny that journalism and technological artifacts have always been interconnected, when it comes to defining journalism those objects are set aside. On the other extreme, as soon as technology is understood to be the cause behind changes in the inverted pyramid style, the "multimedia journalist" or massive layoffs, for example, the debate dangerously approaches technological determinism.

However, as Couldry (2008) summarizes, for ANT "the social" is as technical as "the technical" is social. There is no pure social situation, no essential technical relation. Consequently, we might add, journalism is not made of a social substance, nor is it fundamentally a human process. It is, in fact, a hybrid complexity, as everything else.

A news story is not solely the result of social forces. Multiple actors are associated in a complex network, from the truck to the cable man, from the easy-access notepad to a correctly held camera. As Hemmingway (2007, 8) puts it, "we need to concentrate our efforts on understanding not just the role that technologies play, but more importantly, the *associations* that we discover between human and technological actors."

In order to deploy journalism processes from ANT's standpoint, it is necessary to follow all the actors and observe their actual contributions, instead of rushing to conclusions—safely protected by sacred conceptions, such as ideology, truth, objectivity—or repeating the slogans of what journalism ought to be. It is time, then, to open the black box and look inside. Let all the actants be recognized, human and non-humans, their agencies, the associations they engage in, the traces they leave.

But actants are not all the same. According to Latour (2005, 39), an intermediary "is what transports meaning or force without transformation: defining its inputs is enough to define its outputs." On the other hand, a mediator is an actant that makes a difference in the ongoing processes, transforming and translating the meanings in construction.

Technological artifacts have been treated as intermediaries in journalism—carriers that can be used to enhance each step of journalistic routines. But, under certain circumstances, technology can act as a mediator, transforming the news process. Plesner (2009) uses three examples to demonstrate the role of technological actants in newswork: e-mail communication between editors and collaborators, the use of search engines such as Google in order to find sources, and the telephone, allowing interviews in real time over large distances. These three common practices allow journalists to develop their own role and are fundamental to the resulting news piece. These instances, though, are not very far from the function of digital aids. In the next sections, we wish to go beyond these aspects, defending that a great number of non-humans are actually co-creators of journalism.

After criticizing the social and technological determinisms that undermine journalism theories and presenting why journalism is a creation of hybrid collectives, according to the contributions from ANT, we will now further our reflection on the ontology of journalism, discussing two settings in which the agency of digital artifacts is perhaps most noticeable.

Convergence and Automated Processes

The following discussion on media convergence and computational journalism (Karlsen and Stavelin 2014), even though their description will be rather brief, is intended to illustrate the concepts previously discussed and articulate them with recent phenomena (which will also complement our historical review). We will also debate the notion of network, which is central in digital journalism and convergence research, contrasting ANT's perspective with the concept of networked journalism (Bardoel and Deuze 2001; Heinrich 2011).

The term "convergence" was already being used in other contexts (Gordon 2003), but it was only in the 1990s that it started to be used to refer to technological developments and to the integration of different languages and media (Belochio 2012). As Pavlik and McIntosh (2004, 19) define, "The coming together of computing, telecommunications, and media in a digital environment is known as convergence."

Viewing convergence in journalism as the reunion of technology devices in order to increase productivity, as Pavlik and MacIntosh (2004) do, is an oversimplification. In these cases, technology is once again observed merely as an intermediary.

For Van Loon (2011), perspectives that look at actual practices and consider convergence as steps towards greater integration in the newsroom (such as in García Áviles et al. 2009) show the potential of technology as an actant that helps shape journalism itself—as opposed to just enhancing how things are currently being made (Plesner's examples—e-mail and the telephone—might be a target of this last criticism if taken simply as aids for interviews). According to Van Loon, these perspectives on convergence could be complemented with ANT's framework in order to account for the complexity of the processes: "convergence is not one thing, but a label associated with a heterogeneity of practices" (Van Loon 2011, 13).

Other views identify multiple dimensions of journalism convergence. Domingo et al. (2007) see convergence as comprising four dimensions: integrated production, multiskilled professionals, multiplatform delivery, and active audience. This perspective goes a step further, but it stills considers convergence in a causal linearity, as something that adds greater workload to journalists (multiskilled professionals) and brings more technological devices to journalism practices (multiplatform delivery).

Later, Micó, Masip, and Domingo (2013) interviewed professionals in a newsroom moving toward convergence and identified a prevalence of the multiskilling dimension. The professionals saw it mostly as a negative thing and manifested their fear that convergence would lead to job cuts. We argue that the reported insecurity is a demonstration that technology is more than an intermediary. The transformations that the digital artifacts bring to the current associations show their active role as mediators.

It is important to note that ANT should not be treated as a convenient argument to highlight the importance of technology. The radicality of its ontological contributions encompasses epistemological and methodological consequences. Besides forcing the combination of two different theories (ANT and diffusion of innovations), Micó, Masip, and Domingo's research does not extend beyond the simple interview. Even though this is an important procedure, the authors oversaw ANT's methodological mantra: "follow the actors." The interviews with journalists maintain the focus on human agency, while other actants are kept "quiet." Several ethnographic methods, for example, have been used by ANT researchers to observe humans and non-humans while they associate and to collect the traces left in previous acts. If non-humans are at first described as actants, but the observation of their participation is later minimized or even ignored, the epistemological path arrives somewhere not far from departure, even though ANT was said to guide the exploration. Hence, while non-humans are kept as predicates, not as subjects, the anthropocentric tale of journalism will not be surpassed.

For Van Loon (2011), ANT's most important contribution is not the rediscovery of technology, but rather its methodology that allows the thorough description of the processes in which the social settings are shaped.

Yet, to "follow the actors" is not a simple procedure, as these associations are performed by a potential great number of humans and non-humans. As Latour (2005) explains, an ANT observer may not identify how all actants are connected, but knows that their associations make others do things. Because of this "principle of irreduction," actants are not differentiated hierarchically. Acting in a "flatland," all elements have the same weight.

Actually, this postulate leads us to another relevant concept in our discussion: the network. While media organizations have historically treated networks instrumentally

(a broadcast infrastructure, for example), scholars have been recently debating the concept of network(ed) journalism.

Based on Castells' (1996) concept of network society, Heinrich (2011) proposes the model of network journalism to explain the complex relationship between different sources, producers, and news distributors in contemporary journalism. Even though her model considers the presence of more actors in the news process, it does not recognize technological artifacts as one of them (e.g. Facebook and Twitter). For example, after being published, a news piece can (re)circulate by being commented on and distributed by readers in social network sites (Zago 2011; Jenkins, Ford, and Green 2013).

In a similar direction, Bardoel and Deuze (2001, 92) use the expression of networked journalism to refer to "the convergence between the core competencies and functions of journalists and the civic potential of online journalism." To Russell (2011, 1), the concept should be understood as: "journalism that sees publics as creators, investigators, reactors, (re)makers, and (re)distributors of news and where all variety of media, amateurs, and professional, corporate and independent products and interests intersect at a new level." Although both views of networked journalism focus basically on human actors, they demonstrate an opening to encompass other practitioners besides journalists. However, technology is still not seen to have agency. It is portrayed as something that enables people to act.

In ANT's perspective, the term network has a specific meaning. It is not network in the technological or social sense, as networked journalism definitions seem to follow. Rather, it is understood as a "string of actions where each participant is treated as a full-blown mediator" (Latour 2005, 128). In fact, ANT makes no distinction between the individual and the whole. A network is defined by its actors as well as an actor is defined by its network (Latour et al. 2012). "Hence the term, actor-network—an actor is also, always, a network" (Law 1992, 384). What follows is that each actant, human or non-human, is a network within other networks.

Perhaps, the role of technological artifacts as an actant in journalistic networks is best perceived in what Träsel (2013) calls "post-human practices of journalism," such as in artificial intelligence journalism. From the creation of news by algorithms (Levy 2012; van Dalen 2012; Träsel 2013) to the use of algorithms for content curation (Rosenbaum 2011; Bakker 2012; Saad Corrêa and Bertocchi 2012), the presence of artificial intelligence in journalism is starting to become noticed. Since 2010, Narrative Science[1] automatically generates news from economic indicators and college league game reports (Levy 2012; van Dalen 2012).

Algorithms are used to deal with the profusion of information (Saad Corrêa and Bertocchi 2012). In journalism, this can be perceived in mobile apps such as Flipboard[2] and Facebook's Paper[3], which curate news content from various sites and social network services (Primo 2011; Saad Corrêa and Bertocchi 2012), or Google News, which uses Google Search algorithms in order to automatically aggregate news (Bakker 2012). Instead of eliminating the need for journalists, Saad Corrêa and Bertocchi (2012) suggest that these technologies demand more and more the presence of a human curator, who helps hierarchize and organize information gathered by automated software. Even artificial intelligence news demands someone to feed the machine with sentences and rules (Levy 2012). These relationships reinforce the associations between human and non-human actants in the co-creation of journalism.

The participation of algorithms in selecting and producing news can lead to radical transformations in newsrooms. When we look at these practices with ANT lenses, we can observe algorithms acting as mediators in hybrid networks. Algorithms can free journalists from having to write news pieces about extreme niche topics, so they can focus on more creative work (van Dalen 2012; Karlsen and Stavelin 2014). News consumption is also transformed by curation algorithms. Thus, the active participation of algorithms in journalism may affect all stages of news processes.

There is still debate, though, whether computational journalism is in fact journalism. While it is accepted that an algorithm may collect and process data better than a human, the translation of this information into a news piece by a robot is controversial. However, if the article fulfills its role in the news outlet and satisfies the reader, or even the blind review of a journalism scholar (an exercise similar to the Turing Test, used to evaluate an artificial intelligence system), would the fact that it was automatically produced disqualify the text as a news report? Once again we encounter the anthropocentric perspective denying any process that might challenge the human control over newsmaking.

All these sociotechnical collectives demonstrate the simultaneous presence of different kinds of agencies in journalistic processes. Such an understanding can help us observe more clearly who and what do journalism. Having reviewed and articulated the main concepts from ANT with recent news practices, we are now ready to revisit journalism theory traditions.

Rethinking Journalism Theories and Definitions

Applying ANT to journalism not only involves reevaluating the role of technology, but also reconceptualizing the sheer notion of journalism. Until now, we have focused on the inseparable relationship between humans and non-humans in journalistic practices. In this section we discuss how ANT's contributions impact theory construction in journalism. What follows the new perspective on journalism that we have been presenting is a need for significant epistemological revisions. Sure enough, this ontological turn will have repercussions on issues such as ethics, ideology, and value judgment, which have been traditionally inspired by essentialist premises.

A tension between the humanities and the social sciences has taken the definition of what journalism is into many directions. With this diagnosis, Zelizer (2004, 8) criticizes the limits of seeing journalism as an effect—according to her, a biased sociological view. Adopting a humanistic perspective, she opts for alternative ways to describe how journalism works, such as "performance, narrative, ritual and interpretive community."

Deuze (2005, 444) adds that journalism has been conceived as "a profession, an industry, a literary genre, a culture or a complex social system." The author then shows that the assessment of journalism as ideology is a significant one, as it may reveal how journalists and scholars view the profession (what it is and what it can be), according to shared ideal-typical values.

By adopting an ANT perspective, though, it is possible to observe that both the humanities and the sociological tradition lead to the same ontological mistake: the supposition that journalism is a practice restricted to humans; and according to ideological

stances, of just certain humans: professional journalists. In fact, the dispute on the boundaries of who is a journalist remains (Zelizer 2004). The discussion on whether bloggers and other "amateurs" (Keen 2008) are part of the field, for example, has raised heated debates.

Professional self-definitions are found in the literature in a recipe style (Kovach and Rosenstiel 2001), most often narrated with imperative sentences. Deuze (2005) summarizes five ideal-typical values as follows: journalists provide a public service; journalists are neutral, objective, fair, and (thus) credible; journalists must enjoy editorial autonomy, freedom, and independence; journalists have a sense of immediacy; journalists have a sense of ethics and legitimacy. After analyzing each of these postulates, Deuze (2005, 458) concludes that

> any definition of journalism as a profession working truthfully, operating as a watchdog for the good of society as a whole and enabling citizens to be self-governing is not only naïve, but also one-dimensional and sometimes nostalgic for perhaps the wrong reasons.

After criticizing the literature that takes those idealistic values for granted and the utopian and anti-utopian discourses on "the impact of emerging sociocultural and socioeconomic issues on journalism," Deuze defends a holistic[4] argument that assumes that multimedia and multiculturalism are other "forces of change."

Anyhow, while it is still thought of in ideological terms, journalism will continue to be seen as guided by social forces. A professional ideology, though, is not a type of glue that brings journalists together and governs expected behaviors. In other words, journalism is not a substance, nor an idealistic essence. In fact, different professions have their manuals of procedures and codes of ethics. The same is true with the field of journalism. The problem arises when those texts are taken for granted, as the perfect description of what journalism is.

Based on a limited model of the social and on a normative professional perspective, journalism has been frequently assessed as it ought to be, not as it comes to be in each specific moment. What researchers observe, in these cases, is what their ideological models orient them to see. The profession's creed, however, is not what explains why journalism should be respected as a public service or the watchdog of democracy. Journalism is what needs to be explained, as it happens in democratic or dictatorial regimes, producing hard news or stories on celebrities.

More, the question "what is journalism?" should not be confused with "what is good journalism?" This type of value judgment might only make sense within certain groups that defend an explicit list of best practices, a rather arbitrary model with restricted validity. On the other hand, even what might be considered bad journalism, is journalism after all.

Not rarely, though, alternative forms of journalism (in relation to the normative standard) are labeled as deviations, yellow journalism or something outside the true journalistic realm.[5] First, participatory journalism projects and the articles supporting the movement seemed to put "good ol' journalism" at risk. As some milestone projects (e.g. *OhMy News International*, the global online participatory newspaper) later ceased to exist, critics that labeled activists and researchers of the movement as utopians might have felt vindicated. Now, the influence of ANT may be seen as a new threat to the stability of journalism. Actually, journalism continues to be enacted and reinvented

every day. Journalism epistemology, on the other hand, is in fact being challenged by the ontological premises discussed in this paper.

Whenever other agencies are considered, the number of participating actants in journalistic processes greatly extrapolates the news organization's payroll. Hence, as the picture gets more and more populated, a demand for the actualization of journalism theories emerges. It is time then to reassemble journalism.[6]

As discussed in previous sections, the hybrid associations within sociotechnical collectives allow journalism to emerge. On the other hand, professional journalists and news organizations alone are not capable of "generating" journalism. The collection of theories united around the profession's ideology, that endlessly reiterate journalistic values and norms, cannot produce more than ostensive definitions. According to Latour (2005, 37), the object of this type of definition "remains there, whatever happens to the index of the onlooker." A performative definition, though, may only address what is in movement. As Latour illustrates, the dance is finished as soon as the dancers quit dancing. Seen from an ANT perspective, journalism does not correspond to a set of pure and mandatory qualities. Journalism exists just while it happens, and not as a transcendent essence.

Does an article, written by a newspaper journalist inside the media organization's building, that was not published but forgotten inside a drawer, constitute journalism? Or is it no more than an exemplar of what has been classified as a news genre? And if it was published momentarily on the website, but nobody read it while it was online? These provocative questions seek to challenge the clearly marked boundaries of ostensive definitions. They delimit what is in and what is out of journalism. The focus on newsmaking—particularly hard news—and the newsroom (Zelizer 2004), as well as on the professionals and their utopian self-descriptions (Deuze 2005), are seen as the "inside." Other people not related to the news organization, the audiences, and all objects (technological or not) are the "outside." The beginning and the end-point of journalism also seem to be easily described in the following linear progression: news-gathering, production, circulation. The distribution of news via some substratum delimits when the "inside" finishes and the "outside" starts. What happens after the news pieces are delivered—consumption and recirculation, or whatever names these associations receive—is frequently overlooked by journalism theories.

One interesting exercise is to abstractly delete some actors and their concatenations and ask if journalism would still emerge. For instance, would news production make sense without consumption? The same could be asked about the spontaneous movements of recirculation, which news organizations now eagerly try to promote.

Artifacts, we have shown, are traditionally not considered as an actor in journalism. But as soon as the internet connection breaks, for example, several associations would cease to exist, inside and outside the newsroom. Journalists would have difficulties relating to each other, assignment editors and the public would be separated, algorithms would not be able to curate data, factual images shot by citizens on site with their smartphones would not be received. With the absence of the internet, in this example, the multiplicity of silent digital actors suddenly becomes noticed.

Finally, it is important to recall that because of ANT's roots in semiotics, as Law (1999) observes, entities are not considered to carry inherent qualities. Rather, their attributes and forms emerge only while they are in relation with other entities. In the context of the discussion conducted in this article, we may conclude that nothing can be said to be journalism in itself.

Conclusion

After debating the anthropocentric perspectives in journalism studies, as well as social and technological determinisms, we addressed the problematic characteristics of dominant ostensive definitions. These normative descriptions of what journalism ought to be confuse the explanation with what should be explained. We have also discussed how the prevailing humanistic ontology of journalism ignores the active participation of non-humans.

Nevertheless, when an ANT researcher states that objects are not all intermediaries, that they may act as mediators that significantly transform associations and other participants, several voices rush to postulate: "without a journalist there would be no journalism." But, since there would not be journalism without non-human actants either, what follows is: technological artifacts and other objects also do journalism. Thus, besides "who," we also need to ask "what" does journalism. Besides the "hes" and the "shes," scholars should consider all the "its" that are active participants in associations, without which the processes would be radically different or not happen at all.

We have insisted that humans and non-humans constitute a hybrid collective. It is the concatenation of their associations that allows journalism to be enacted. What is urgent to recognize, hence, is that professional journalists are not alone and do not control journalism as they wish they could.

The new ontological premises that we have discussed here bring significant epistemological and methodological consequences. We are aware that this fact may undermine the adoption of this perspective, as it disturbs the stability of traditional theories and ideologically driven definitions. Yet, we are positive that because novel questions may be raised in journalism studies—as ANT premises widen the observation field, letting us see what was not before identifiable—new and innovative conclusions may be reached.

Yet, the attention that we advocate that has to be paid to the participation of objects in the co-creation of journalism should not culminate in some sort of fetishism of digital artifacts. Unfortunately, this would result in a new form of technological determinism, a problem that ANT intends to avoid.

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NOTES

1. See http://www.narrativescience.com/.
2. See https://flipboard.com/.
3. See https://www.facebook.com/paper.
4. Latour et al. (2012) criticize holistic perspectives as their arguments are based on the separation of two different levels: the micro and the macro. ANT, on the other hand, rejects that opposition and works with the leibnizian idea of monads. As we have shown before, ANT's metaphor of a "flatland" illustrates the existence of only one dimension, in which all actants have the same importance.

5. Curiously, definitions of alternative journalism (Atton 2003) and citizen/participatory journalism (Gillmor 2006) are also inspired by utopian discourses, with their own faith in what journalism should be.
6. This argument is a direct reference to Latour's (2005) book title: *Reassembling the Social: An Introduction to Actor-network-theory*.

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