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Social Media and Algorithms: Configurations of the Lifeworld Colonization by New Media

Abstract:

Social media is a pervasive part of everyday life. That is, new media occupies more and more spaces in individuals' lives both in intimate and work sphere. In addition, due to convergence, new media brought together interpersonal and mass communications in the same environment. This fact has caused a wide range of changes in cultural industries. One of the main changes brought about by social media in relation to the mass media is the construction of a flow of content, advertising and propaganda customized for each individual, and constructed from surveillance and control of individuals' interactions in digital networks. For so doing, one element is central: Algorithms. It is not only by means of contents produced by cultural workers or amateurs that social media guarantees the life world colonization by the system, but mainly through the tracking of user interactions. That is possible thanks to the data gathering performed by algorithms. Therefore, social networks colonize the life world in a more constant and pervasive way than mass media, facilitating surveillance and social control that are vital for both, the digital conglomerates economic power and the state capacity to watch individuals, either to strengthen the sales effort or to ensure citizen vigilance.

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Introduction

Social Media, as technological platforms, are inserted in increasingly pervasive ways into the individual's daily life. Our closest friendships, news, interest groups, interpersonal communication – everything converges to these spaces of interaction. Convergence between interpersonal communication and mass communication makes stocks of companies that own social network sites extremely valued, as these platforms perform functions of both telephone companies and media. The insertion of social media into the daily lives of individuals in both exponentially increasing and very personal ways allows social media to gradually function within a capitalist system, as exclusive to the Cultural Industry, with greater efficiency.

The transition from the Culture Industry prevalent in the second half of the XX Century, which centered around TV broadcasting systems, to the new mediation structure, centered on the Internet, promotes fundamental changes in the traditional Monopoly Capitalism functions of (Bolaño, 2015) advertising, propaganda and program. These functions are vital for the lifeworld colonization by the system (Habermas, 1981).

Advertising is aimed at mediating between the market and consumers, that is, guaranteeing the lifeworld colonization by the economic subsystem. Propaganda is responsible for mediation between State and citizenship, facilitating the colonization of the lifeworld by administrative subsystem. Bolaño's definition of program – whose role is to offer content within a flow capable of attracting the attention of a public that will be transformed in commodity audience – as a third function aims to represent lifeworld determinations over mediating structure. In a public broadcasting system, on the other hand, that third function can be accomplished, for example, by public services, accountability, etc.

The critical point that needs to be made as such is that, in the case of Internet and social media, this central function manifests as interaction. We will not discuss here the much more complex problem of how the propaganda function is accomplished in the present capitalist mediation structure. Currently, the main form of lifeworld colonization by State is Internet surveillance. In addition to the distribution of content anchored in the lifeworld, the interaction function allows the surveillance of both social networking sites, which produce users' dossiers, and the state.

Unlike broadcasting where content is rationally organized via radio or TV programming by a certain (powerful) sector of the media staff (Williams, 2003), social media makes this task automatic, organizing content to the user's disposition, taking into account interactions with other users, business companies and other organizations profiles. Traditional mass media sells the audience commodity (Smythe, 1977). Audience prices vary according to schedule, to when advertising runs and is calculated according to the demographic group profile of the current television-watching audience. Profiles are determined by qualitative and, mainly, quantitative surveys based on samples from the total number of people who watch television or listen to radio at any given time (Bolaño, 2015).

In these surveys, the fact that many individuals not interested in the advertised products are part of advertisers' target, the whole system is functionality stymied, introducing inefficiencies and increasing costs. In social media, this problem is radically reduced and the mediation between market and consumers presents an efficiency never seen before. In order to accomplish all its mediation functions in social media environments, a new element is central: Algorithms.

According to Gillespie (2014, p.167), '[algorithms] are encoded procedures for transforming input data into a desired output, based on specified calculations'. Algorithms are pervasive and ubiquitous (Wilson, 2016) and work to make things like Facebook newsfeed, Google searches, Twitter trends, and Netflix recommendations work. Even interactions between friends in social media are organized according to patterns determined by algorithms. Algorithms make it possible to track user navigation over the Internet, generating data used to construct highly personalized advertising. Social media tracks users' interactions with other profiles, whether from companies, content producers or individuals; to distribute content, advertising and propaganda within a personalized flow.

The objective of this paper is to, starting from Bolaño's (2015) theorization about information commodification in Monopoly Capitalism, mark the crossing from a political economy of mass media to a political economy of Internet and social media, emphasizing the centrality of algorithms in the new social mediating structure. In the first part, we present the definition of algorithms as a concept related to the development of capitalism and, in sum, to the change from a disciplinary to a control society, as argued by Deleuze (1992), in his reception of Foucault (1987).

In the second part, we redefine the definitions of algorithms and social media, focusing on the functionalities of the former at a micro level, and in the characteristics of the later proposed by Van Dijck and Poell (2013). We largely adopt the above authors definitions, proposing, nevertheless, two corrections: The inclusion of the idea of "datafication" in the more essential historical tendency of quantification and abstraction (not developed in this paper) and the incorporation of the concept of interactivity, building from the authors' definition of connectivity.

In the third part, we propose some ideas for the critic of interactivity, concluding with the problem of surveillance capitalism, building from the discussion proposed in part one. In the conclusion, we summarize our main arguments and indicate a need for social movements to fight for the opening of algorithm codes in order to guarantee free communication and democracy.

Algorithms, Social Media and Big Data

Information and communication technologies (ICTs) have been one of the drivers of the capitalist system restructuring that begun in the 1970s, resulting in the end of the Fordist accumulation regime and the advent of the flexible accumulation regime (Harvey, 1989). ICTs have accelerated a trend of creative destruction of the capitalist system, presenting a strong disruptive character to old technologies. In addition, ICTs have contributed to the strengthening of what Marx calls the labor subsumption by capital, codifying various tasks in software and automating them (Bolaño, 2002). Cultural Industry has been experiencing the impact of ICTs since the last decade, including the decline in circulation of newspapers and magazines, and more recently the adoption of second screens by audiences, leading to a decline in attention by spectators. That is, the commodity audience of cultural industries has gone through a brutal process of devaluation.

This process is related to the search for profitability in the Internet market, one of the main reasons for the bursting of the NASDAQ stock market bubble. There was a promise of high profitability, based on the expectation of an Internet popularization in the 2000s, leading to indiscriminate opening of technology companies and corresponding speculation. However, the vast majority of businesses had no real profitability to justify the high investments in that sector by speculative capital. The truth is that search and content sites on the Internet had not found, by the end of the last millennium, a way to make the digital world profitable beyond financial speculation. Several attempts were developed, such as the subscription system or ads that popped up on the user's screen when they entered certain websites. However, most Internet users were reluctant to pay for content and viewed the pop-ups experience as disruptive, since such advertising expectantly pops up on the computer screen rather than through regulated and expected television ads included in regular programming.

According to authors such as McChesney (2013) and Van Dijck (2013), the way out of the above deadlock was to track Internet users through cookies, files downloaded by Internet browsers when users visit certain sites, and collect data about users' paths. From that data, it was possible to trace users' profiles and offer them personalized ads. Social media have honed this logic by combining user tracking and real-time data gathering, which have been able to offer users a personalized experience of both content and advertising. That transformation can be seen as a defeat for large media companies that are no longer the big targets of the advertising industry, although they remain as major producers of content such as news, videos, series, and movies. Power to distribute the flow of content and advertisements passes to social media companies through their algorithms that mediate individuals' interaction with other individuals and with mass-communications companies.

Those companies anchor themselves in a pretended mathematical objectivity of algorithms to be neutral intermediaries between users, content producers, and advertisers. Pasquale (2015) notes that “despite their claims of objectivity and neutrality”, algorithms “are constantly making controversial, value-laden decisions”. These devices construct images of the world, but their owners claim that algorithms only show the world. Pasquale reminds us that the algorithms of giants like Google and Facebook know a lot about their users, but individuals know very little about them. According to Pasquale, algorithms are black boxes.

Cormen et al. (2009: 5) notes that, “an algorithm is a well-defined computational procedure that takes some value, or set of values as input, and produces some value, or set of values, as output.” Therefore, an algorithm is a series of computational steps that transform input into output. The computational codes behind the software we use are examples of algorithms. Inserted into algorithms are instructions on how software will react (output) to user commands (input). Therefore, computational algorithms are the result of a series of developments in mathematics and computer science used by industry to manufacture new products and produce their profits.

Algorithms command interactivity between humans and software, and software and computers mediate human interactions in social media.¹ For social media algorithms, data extracted from the tracking of user interactions with other users’ profiles and companies’ profiles would be the input while the ads and contents recommended for this user would be the output. That output is result of statistical calculations made from large volumes of data compiled with help from high processing power computers. The presence of algorithms in everyday life takes on a pervasive form. They act on financial markets, on Netflix movie recommendations, on Google search results, and on social media sites, transforming Lawrence Lessig’s (2006) famous phrase “the code is the law” into an inconvenient truth.

Computational codes also begin to invade our interactions through social media. According to Van Dijck (2013: 11-2), social media can be seen as human interaction facilitators, a people network that promotes interactions as a social value. However, these sites are automated systems that engender and manipulate interactions in order to recognize what users want and like. “Facebook and other platforms track users by coding relationships between people’s things and ideas” (idem: 12). According to the author, social media companies tend to emphasize in their institutional propaganda the ability to facilitate interactions between people and minimize the automation of interactions. Automation of interactions by algorithms allows a “detailed and intimate knowledge of the desires and tastes of people” (ibid.) used by the platforms in the development of tools whose purpose is to create and guide specific needs.

Algorithms were designed to solve problems, but they are inert (Gillespie, 2014: 169), and work only with data. Algorithms need a sheer amount of data, resulting from tracking user interactions, to deliver personalized content and advertising. That huge amount of data is compiled in real time by social media algorithms thanks to computers with high processing power. Large masses of data whose compilation is only possible with the help of powerful computers is conventionally called Big Data. There is a false understanding according to Shutt and O’Neill (2013: 25) that Big Data would be a mass of data in which $N = All$, i.e. the sample would be able to encompass all individuals of a given population. Such reasoning would silence those who are not reached by

¹ In fact, we must define the capitalist mediating structure between man and machine related to the Third Industrial Revolution (BOLAÑO, 2012) in two steps. In the paradigmatic commodity production field, for instance, algorithm is the tool by which man transfers a logical/mental structure (the semantic step) – the one, which commands the software that, on its turn, controls the machine operations (the syntactic step) – to an element of constant capital. The total mediating system is obviously much more complex than the ancient use of simple tools and even the machine system studied by Marx, but it is not yet enough to confirm the science fiction’s artificial intelligence dystopias. Human interaction, even mediated by more and more technical layers that amplify the separation between man and nature, is still necessary.

Big Data radar. In that case, a sample would coincide with an entire population, something impossible to achieve in statistics.

On the other end of the spectrum, equally mistaken for the authors, is the understanding that $N = 1$. Statically, this would mean that it would be possible to infer the characteristics of a given population from a single individual. However, $N = 1$ gains a new meaning in the Big Data era, where it is possible to store a large mass of data on a single person, and actually produce a sample that includes all the events and actions of that individual, making it possible to make inferences about him or her. It is what data scientists call user-level modeling, that is, construct data models capable of predicting the desires and actions of the user of a given service (Idem: 26). "A model is an attempt to understand or represent the nature of reality through a particular lens, be it architectural, biological or mathematical" (ibid, 28). Therefore, considering that models are constructed from a particular lens, the objectivity claims for social media are difficult to sustain.

Adorno and Horkheimer (1949: 102-3), in their extremely pessimistic analysis of the Cultural Industry, affirm that within this sector "for everyone something is foreseen; so that no one escapes". In fact, the two German philosophers considered that differences between the various contents produced by the Cultural Industry were merely a strategy for categorizing and quantifying consumers statically for purposes of industry planning itself. Thus, using Habermas' (1981) terms, Cultural Industry would promote a lifeworld colonization, of everyday life. It was the continuation of an instrumental rationality of the system, to which the worker would be exposed during work, in free time. Adorno and Horkheimer's perspective is commonly considered a one-sided view about Cultural Industry that completely strips the individuals' agency, and presents an extremely exaggerated view about the mass culture firms' power to predict audience desires.

Social media algorithms actually predict something for each person, and it is not a force of expression, or metaphor, but it is a power of right prediction and distribution of content or ads for the right person with a margin of error much smaller than that observed in traditional Cultural Industry. That surveillance and control over individuals' everyday interactions also constitutes a previously unseen lifeworld colonization by economic and administrative subsystems' rationality. Of course, we cannot make the mistake in denying the existence of utopian energies. Social media are also instruments used by social movements to mobilize and disseminate their demands. Just as there are movements that stand against the invasion of instrumental rationality within digital networks. It is inherent to capitalist contradictions. However, when we think of the ads and individual content received by users based on the data gathered by social media, it is very difficult not to remember the Frankfurter statement.

We can also conclude, from another perspective, that algorithms guarantee all the general Culture Industry functions in a much more invisible, market oriented form than in Foucault's (1975) analogically organized "disciplinary society" in which the submission of the individual is related to the division of space into closed places and a subsequent ordering of working time. Algorithms and the economy of the Internet seems to reinforce Deleuze's (1992) perspective of a transition from that analogical disciplinary society to a digitally organized "control society", in which spaces interpenetrate without definite limits and the establishment of a continuous time makes it impossible for individuals to finish their tasks.²

² Deleuze have proposed that concept to understand the transformation of an analogically organized "disciplinary society" (FOUCAULT, 1975) in which the submission of the individual is related to the division of space into closed places and a subsequent ordering of working time; into a social organization, organized numerically, in which spaces interpenetrate without definite limits, and there is the establishment of a continuous time, making it impossible for individuals to finish their tasks. There is a transformation in the surveillance exercise, in the transition from disciplinary to control society. In the former, the act of watching referred to confinement and, therefore, to a physical situation that symbolized the concerns of this model of society. "The problem was the individuals' physical movement, their spatial displacement. Watching was basically regulating people's footsteps, it was looking. With the explosion of communications, a new

Algorithms, Mass Communication and Social Media

In relation to the microeconomic and microsocial aspects of the different culture industries, we can define the algorithmic task as follows:

Algorithms organize the culture commodity offered on the web, substituting the ancient TV timetable by an automatized tool that articulates habits and desires of the audience to advertisers needs. Producers and customers seems to be independent subjects that find in the web a perfect instrument to preserve their mutual autonomy, in a pure mercantile structure. The ideological character of that operation is evident (Bolaño, 2016), arriving, in the more radically fetishist interpretation, to confound both roles in the simplistic idea of "prosumer". In all cases, it is true that programmers lost power, favoring advertisers, but by an operation that produces an irresistible appearance of equality.

Algorithms, in so doing, automatically direct public attention and construct different types of audience commodities that Internet players sell to advertisers in an extremely efficient form. The weakness of this social logic is how to preserve attention in a total dialogical communication apparatus. In fact – and this is the paradox solution – what is sold is not just audience, such as in the broadcasting system, but also an apparently direct channel between customers and advertisers, not mediated by other human interests. This appearance is due to the automatic character of the system that reinforces the myth of technological neutrality.

Algorithm facilitates an interactive communication that was impossible in the XX Century's Culture Industry organization. Interactivity, as we said above, has the same function than program or public services in constructing audience but, in order to make it useful to State and capital, it is necessary to neutralize its critical and revolutionary potentials. In the last instance, the classic bourgeois public sphere faced the same problem, according to Habermas (1961), in the transition from competitive to monopolist capitalism. Culture Industry, for him, was the solution to this problem. In that case, reactivity replaces interactivity (Williams, 2003). A very similar process takes place now.

The complete social logic is the result of micro decisions made by individual capitals in competition. Algorithms represent the essential advantage of individual capitals fighting for conquest or preserve barriers to new competition in Internet based markets. Algorithm production and its control as a secret provides monopolistic advantages and represents, in the last instance, the crucial objective of any capital and the core of each particular business in digital economy. We are, therefore, far from information democratization. The typical market structure in Internet economy remains oligopoly and the main tendency is concentration and centralization, exactly as argued by Marx and Engels when considering the tendencies of capital accumulation.

On the other hand, far from being neutral, both mass media and social media are of great importance in shaping everyday interactions in contemporary times, as Van Dijck and Poell emphasize it (2013: 1). The authors enumerate four characteristics of social media that are present in an increasingly pervasive way in daily life: programmability, popularity, connectivity and datafication. These four characteristics are interesting to demarcate the socioeconomic changes of a time dominated by mass media as social mediators to a historical moment in which social media companies begin to impose their logic in the mediation between individuals and

figure is gaining momentum: the surveillance of messages, of communications traffic" (COSTA, 2004, 164). After the Internet advent, the concern, thanks to Internet architecture itself, becomes the way individuals access this information. Surveillance is exercised on the dynamics of communication not only between people, but also between people and businesses, network services, financial system, that is, surveillance extends wherever messages circulate.

economic and administrative subsystems. ICTs are rapidly eroding the barriers between mass communication and computer mediated communication.

That flow of programs, news and ads has a cultural significance and an economic function. News flow on a newscast, for example, hierarchizes certain facts and interferes in its meaning with audiences. Programming flow is also organized from economic interests. Programs are placed at certain schedules with expectation to reaching an audience with a certain profile that would be free to attend that broadcasting program. As Jost (2010: 75-6) points out, a broadcast program's chances of success depend on the schedule of its broadcast, as it may not reach the intended audience or interest it less than the content broadcast by the competitor. Thus, one of the strategic functions of a broadcaster is to establish a programming flow that transmits the appropriate television genre to the audience to be reached, at a given time, taking into account the content offering of the other channels. There is another requirement that must be added to these two, it comes from the advertiser: "to build a stable public, with more or less the same characteristics from week to week, a target".

In social media, programmability is not based on the flow of programs previously scheduled in the course of the day, but in the tracking of users' interactions. Thus, social media organizes the content flows available to individuals according to metrics and parameters that are not available to users' accountability, since social media algorithms are proprietary, and regarded as trade secrets. In addition to automating the flow of content and interactions, it presents a new way to sell audiences. Advertising and propaganda that reach individuals are tailored to their prior interactions, ensuring that the right ad reaches the right consumer.

The second social media feature would be popularity. Social media sites have become popularity legitimators, a power that mass media still possesses. More and more actors, politicians, and musicians appear to the public or increase their symbolic capital from exposure on social media. In this way, those agents who master techniques capable of leveraging their visibility and popularity in new media can gain followers for their work and ideas without going through the mass media filters. The third social media characteristic would be connectivity. Connectivity, according to Van Dijck and Poells (2013, p.8) is a term derived from technical hardware language, which designates the socio-technical ability to connect content and advertisements to users' activities. We prefer the term computer-mediated interaction (Primo, 2007) to connectivity or interactivity.

The fourth feature would be datafication: the ability of networked platforms to transform into data many aspects of the world that have never been quantified before. It is not only the demographic or profile data produced by customers in online surveys that are quantified, but also the ability to automatically derive, from user interactions and actions, metadata from smartphones, such as those produced from the user's location, for example. (Idem, p.9).

We prefer here the idea of quantification that represents an ancient trend begun, according to Crosby (1997), in the XII Century. It represents the inner process of abstraction that characterizes the capitalist development from its beginnings and, more, the general division between manual and intellectual labor in ancient Greece (Sohn-Rethel, 1995). The development of informatics, the logic separation between hardware and software, the subsumption of intellectual labor (Bolaño, 2012), that characterizes the present capitalist restructuring, are recent developments of this long-term tendency. Datafication could be better understood in this perspective, but we will not develop it in the limits of this paper.

Interactivity, Social Media and Surveillance

The possibility that the media allowed individuals to be both producers and receivers, thus effecting a kind of popular, communitarian, contra-hegemonic communication, free from the control of capital and the state, was already a claim of Marxist thinkers such as Brecht in the 1930s and Enzensberger (1970) in the 1970s. Brecht considered that it was necessary for radio to also be an apparatus of communication and not just of diffusion so that there was the possibility of confronting the forces of disconnection through the organization of the disconnected (Brecht, 1964: 52), which Bolaño (2015), paraphrasing Williams, called the "listener rebellion".

Williams (2003) differentiates reactive and interactive media in the 1960s, when he surveyed television as a cultural form and possibilities for truly democratic communication offered by that technology.

The search for more interactive media, on the other hand, has always been a concern to the electronic industry. But, as Van Dijk and Des Vos (2001) and Primo (2007) point out, this demand for technological advances that increase interactivity has always been commercially motivated, and focused on human-machine interaction, based on parameters previously established by technological system programmers. Apparatus like television remote control, or user-friendly interfaces of operating systems used in personal computers and other technological advances were meant to seduce consumers. They were advertising strategies for electronic products, "selling arguments" (Sfez, 1992). Emerging technologies' "new communicative possibilities", in this bias, are characteristics that justify purchase and use of new products.

From that perspective, interactivity has a transmissionist meaning, present in many of its definitions in communication sciences, which fits into the emitter-message-receiver model (Van Dijk; De Vos, 2001: 447). Rafaeli's first definition of interactivity, one of the first and most famous in the Communication field, follows this model: "Interactivity is an expression of the extent that in a given series of communication, any third (or later) transmission (or message) is related to the degree to which previous exchanges refer to even earlier transmissions" (Rafaeli, 1988: 111). Notwithstanding, for Williams (2003), an interactive system should offer to the viewer the possibility of creating and responding in an unforeseen way. On the other hand, in reactive systems "the range of choices, both in detail and scope, is pre-set" (Williams, 2003: 144). For television to be interactive, according to Williams' definition, it would have to allow for "viewer rebellion". However, Williams, according to Primo (2007: 27), would consider much of the technological resources currently available on television sets reactive.

Those different meanings of the concept of interactivity come from the fact that interactivity is a multi-discursive concept (Jensen, 1988: 188). Jensen maps the different concepts of interactivity and analyzes their application in three different fields of knowledge: "1) the concept of interaction of sociology, 2) the interaction concepts of communication studies, and finally 3) the concept of interaction of computer sciences" (Idem).

In sociology, the concept of interaction is modeled on the relationship between two or more people who, in a given situation, mutually adapt their behaviors and actions to the other. Social systems and specific situations with sharp contours are part of this social process, and interactive patterns are more similar to physical interactivity. In addition, the concept also involves "symbolic interaction". "In other words, a mutual exchange and negotiation around meaning takes place between partners who find themselves in the same social context. A situation that communication and media studies would call communication." (Ibid.). Thus, in sociological studies, there may be communication without interaction (unidirectional communication), but not interaction without communication.

In Communication and Media Studies, there is no consensus or clear outline regarding the concept of interaction. Interaction may mean the construction of meanings by audiences when they come into contact with certain content, interpersonal communication processes, or a closer meaning to the sociological in communications research within groups of audience studies (ibid, 189). Another model of the concept of interaction in communication studies is the transmissionist model, as previously noted, which has a purely technological dimension.

The Interaction model in computer science has as its starting point the relationship between people and machines, so-called human-computer interaction (HCI) or human-machine interaction. That model, according to Jensen (Ibid, 190), originated from batch processing, in which a large amount of data is collected before being processed by computers. Users could observe partial results, use choice menus, and dialog boxes to intervene in the process. In this way, users were able to intervene in the program's performance through "dialog traffic" or an "interactive mode". The Computer Science model of interaction does not cover communication between two people mediated by a machine, or what is called computer-mediated communication. According to Jensen (Ibid.), in computer science, then, it is possible to have interaction without communication (man-machine), but not communication (computer-mediated) without some interaction (human-computer).

The interaction concept of "control" in Computer Science (Jensen, 1998: 190) is important for the development of our argument. Jensen uses the Workshop Seillac example in which computer scientists seek to arrive at a consensus definition of the concepts of interaction and interactivity: "Interaction is a style of control and interactive systems exhibit that style" (Guedji, 1980: 69). And, "while sociology doesn't normally use the derivative 'interactivity', the concepts of 'interaction' and 'interactivity' in computer and media studies appear to be synonymous" (Jensen, 1998, p.190). Synonymous use, in connection with the advent of "new media", has also become widely used in the field of media studies. In this way, "the concept 'interactivity' or the combination 'interactive media' is often used to characterize a certain feature of new media that differs it from traditional media" (Idem).

Jensen considers that it would be more productive to maintain the interaction concept linked to its strong sociological definition, except for mediated communication. Interactivity would be the term used to refer to the use of media and computer-mediated communication. In that way, Jensen conceptualizes interactivity as "a measure of a media's potential ability to let the user exert influence on the content and / or form of mediated communication" (Ibid, 201).³ Jensen's concept of interactivity – even in its later version (Jensen, 2008), by adding the possibility of social media users to act as prosumers (Toffler, 1981) – is not productive if we want to understand the role of social media contemporaneously in that it dismisses the sociological aspects of the interaction concept. We believe that interactivity, in the man-machine sense, and interaction, in the strong sociological sense, are closely linked in social media.

Social media platforms encode human interactions (Van Dijck, 2013) and, through that codified architecture, standardize human interaction in order to insert content, advertising and propaganda in a personalized way in users' flow while at the same time monitoring them. Thus, interactivity in social media becomes a form of control and surveillance from the data generated by the users' interactions of those platforms. That interactions coding is central to what Foster and McChesney (2014) call "surveillance capitalism", an unfolding of Warfare State: a political-economic arrangement in which the US government makes massive investments in military technology to leverage its domestic economy and ensure global military hegemony. The union of interests between industry corporations and US military gave rise to what Daniel Guerin (1973) called Military-Industrial Complex.

According to Foster and McChesney (2014, p. 2), since the 1970s, the digital communications revolution – associated with technological advances such as computers, digital technology and the Internet – was strengthened by three means of absorbing surplus value: massive military spending, sales effort, which involve large investments in advertising, and, with the crisis of Fordism, financialization. As noted, "each necessitated new forms of surveillance and control. The result was a universalization of surveillance, associated with all three areas of: (1) militarism/imperialism/security; (2) corporate-based marketing and the media system; and (3) the world of finance" (Foster; McChesney, 2014).

Social media and algorithms fulfill new needs for surveillance and control and, in this way, make sales effort, diffusion of advertising and economy financialization more efficient. New technologies have increased the ability of the market and state to monitor individuals. Algorithms are the devices through which surveillance and control are exercised by State and market together. However, digital giants regard those algorithms as trade secrets. While large technology corporations possess a huge range of information about social media users, individuals know very little about what these companies do with the data that is collected about them, creating

³ That concept of interactivity can be divided into four sub-concepts or different dimensions: transmission, consultation, conversation and registration (Jensen, 1998).

a huge asymmetry of information and power. "Dataveillance" results in a synergistic exchange of intimate details about individual lives (Pasquale, 2015, p.21).

They are black boxes. Social media users do not know what parameters are used to rank them, categorize them, and are totally ignorant of how that data is used and who has access to it. In that way, we can say that social media exerts a lifeworld colonization much more conspicuous than mass media exerts by mediating the interests of market and State by inserting advertising and propaganda into the flow of programs. Algorithms not only produce what Gillespie (2014) calls calculated audiences, but also insert themselves into our daily lives (Wilson, 2016), build social reality by working as gatekeepers and setting the agenda of certain groups (Just; Latzer, 2017). Furthermore, they are the technological base of monopolist companies like Google and Facebook.

Conclusions

Social media sites are devices increasingly present in our everyday lives, platforms that encode certain social relationships and gather personalized data from their users' interactions. Social media sells the audience commodity, but in a more efficient way. The target is the individual and their desires, not demographic groups, as mass media does. In social media, the flow is custom-built for individuals and not based on audience surveys that take into account habits of demographic groups portrayed from samples of a given population of individuals. Mass media colonizes the lifeworld through advertising and propaganda. Program, public services, and accountability all have the role of attracting audiences to the flow of broadcast content to expose them to advertising and propaganda.

In social media, the program function is largely substituted by what we defined here as the interaction function. Internet players, by means of algorithms, distribute the flow of content, advertising and propaganda according to individuals' interactions with companies, content producers and other individuals. Mass media has long been the mediator between State and citizenship and between market and consumers. Large communication conglomerates will continue to do it, producing content and being part of the lifeworld colonization complex, but they will do their mediating job in the company of other important partners: the so-called social media and Internet players.⁴

Social media algorithms increasingly automate content, advertising, and surveillance streams. In addition, they perform a function that the mass media cannot: surveillance and control of individuals and not only the masses. In disciplinary society, surveillance took place in enclosures, such as factories, hospitals, and schools. They are molds or different castings. The individual was always restarting their tasks when they returned to these enclosures. In control society, however, surveillance takes place in open spaces, in any space. Controls are modulations, "like a self-deforming cast that continuously change from one moment to other, or as a sieve whose mesh will be transmuted from point to point" (Deleuze, 1992: 4). Individuals can no longer complete any task; they are always in debt.

Powers and Jablonski (2015) and McChesney (2013) emphasize the international hegemonic character of the system, referring to the coalition between digital economy giants and the US government as a "military-digital complex", an update of the "military-industrial complex" thought by Daniel Guerin. McChesney (2013, p. 162) highlights the existence of economic interests that make Silicon Valley companies support citizen surveillance by government agencies. Technology is fundamental in the maintenance of this "surveillance capitalism" (Foster; McChesney, 2014; Mattelart, 2008) and of the lifeworld colonization by the system in the neoliberal

⁴ We can say that the capitalist social mediation structure in the XXI Century doubled, but we cannot discuss it in the limits of this paper.

era, in a much deeper sense than in original Frankfurt definition (Adorno; Horkheimer, 1949), bringing current control closer to the vigilance described by Phillip K. Dick in the Minority Report narrative.

Social movements for free communication should focus on pushing government over constructing laws in order to open the codes of the mainstream Internet players' algorithms, because in addition to increasingly regulating the daily life of individuals, they enable the surveillance of them by the market and State apparatus. It is a brutal instrumental rationality invasion in individuals' daily life, based on a real black box system, and secrets of this magnitude are not compatible with democratic societies, where communication is supposed to be free. It is necessary to know the laws governing cyberspace. The free software movement is an example of a community of technically trained users, such as Linux-based operating systems, that could curate social media algorithms.

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