

Algorithmic mediation and the spiral of silence

Reconfigurations of the theory based on four analysis mechanisms¹

Mediações algorítmicas e espiral do silêncio

Reconfigurações da teoria a partir de quatro mecanismos de análise

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Introduction

If Hamlet were speaking to Horace today, he would probably say: "There are more things between heaven and earth than there are in your entire news feed." Shakespeare did not trivialize philosophy or rationality, he merely indicated that they alone are not the answer for everything. Similar to Hamlet's reasoning, social networks and search engines do not represent the whole of society. This is mainly due to the algorithm factor.

Most social networks and search engines have *machine learning* algorithms to guide and curate the information that circulates online. By organizing and generating trends and suggestions, digital platforms such as Facebook, Google, Instagram, TikTok, Twitter, YouTube, (and others) choose which publications will be viewed and in what order. They decide which pages will be highlighted and which content is most relevant for the user, etc.

¹ This article is a revised and expanded view of the work presented at the GP Theories of Journalism, the XX Meeting of Communication Research Groups, a component event of the 43rd Brazilian Congress of Communication Sciences, held in December 2020.

Traditionally, news selection is a manual undertaking, one institutionalized by journalists and their media organizations and is based on news values and newsworthiness. In Just and Latzer's (2017) recent study on constructing an algorithmic reality, they claim that news selection occurs automatically through personalized software, most of which is developed by technological conglomerates in Silicon Valley. Thus, the inclusion or exclusion of messages by way of algorithms may (or may not) benefit certain debates and, according to Silveira (2019), could interfere with the democratic process and lead to impartial narratives.

Although their structures are characterized as private, digital platforms have become spaces for holding important public and local debates, where viewpoints differ and opinions are voiced. This article explores the results from a sociocultural reception study carried out in the author's thesis (WINQUES, 2020) which analyzed the social processes involving algorithms and subjects, and investigated the implications of this relationship in the reception and circulation of journalistic information on the internet. We understand that these implications also affect public opinion and perform the uses, appropriations and meanings attributed to journalistic content in these spaces. As a result, we discovered some striking features by reconfiguring Noelle-Neumann's original theory (2010).

One of the purposes of this work is to rethink some of the traditional points of media and communication research in the light of algorithmic mediation, especially with regard to issues related to the spiral of silence. Our objective is to look at the reconfigurations of Noelle-Neumann's theory (2010) and present a categorization analysis of the contemporary spiral of silence, achieved by using the following four mechanisms: 1) *accumulation*, 2) *consonance*, 3) *ubiquity*, and 4) *anonymity*.

The article is divided into four parts: a) looking at the concept of algorithmic mediation; b) considering the spiral of silence theory and contemporary studies on the subject; c) contextualizing the main methodological steps and the interviewee profiles in the reception study; and d) presenting the four analysis mechanisms mentioned above.

Algorithmic mediation: a sociocultural concept

Based on specific calculations, algorithms are coded procedures that transform an input into an output and are used to control the flow of actions (BUCHER, 2012). Due to their highly variable and specific

nature (DOURISH, 2016), algorithms take several factors into consideration, depending on which technique is being applied (RIEDER, 2020). There are items that need to be added or deleted, steps that must be followed in a specific order, and a number of decisions or actions to be identified and negotiated in order to arrive at a desired outcome.

In fact, there is no guarantee that individuals are interacting with the same algorithmic system, even if they are using the same digital platform. Mechanisms are designed to be adaptable and variable, which is why the experience of algorithms can change as the infrastructure changes (DOURISH, 2016). This segmented and adaptable curation is precisely what makes platforms like Google and Facebook so successful with the public; they show the information that is most interesting for each individual in the universe of available information.

Algorithms play a key role in helping people navigate the internet (NAPOLI, 2013). However, by offering a set of operational principles that can be used to solve problems, they monitor browsing history, geographic information, gender, age, behavior, political preferences, profession, etc. Other analyses calculate the days of the week that access occurred, time intervals, permanence, engagement, attendance, etc. In this sense, “the platforms appropriate the connection logics and leverage them as part of a strategy – commercial mainly – that aims to encourage users to leave traces of their relationships, preferences, etc.” (D'ANDRÉA, 2020, p. 24). Therefore, the application of variables performed by the machine take place backstage in a platform that models the consumption of news and entertainment (LATZER et al., 2014; BEER, 2016).

The development of algorithmic selection is closely related to a series of techno-economic and social trends, which include: informatization, data, automation, and economic optimization (LATZER et al., 2014). Essentially, its pervasiveness and growing importance is fueled by the proliferation of an increasingly mobile and ubiquitous internet. They are, however, processes closely connected to a new phase of capitalism, one marked by the economic exploitation of data on the part of large technology companies (COULDRY; MEJIAS, 2018; SHOSHANA, 2020; SILVEIRA, 2019; SRNICEK, 2017).

When using a communication channel, the nature of the subject's interaction will be shaped by these spatial and temporal properties, and by the different aspects of the environment (THOMPSON, 2005). In journalism, Bell and Owen (2017) assess that no means of communication can escape the force of

large technology companies, mainly because the decisions that are made dictate the strategies of all journalistic organizations. Most of the business conducted by the press, the public, and advertising is constantly being pressured by these technology companies and the actions they take. The competitive advantage these organizations have comes from the ability to generate large amounts of data using automated and personalized selection, a model that traditional media cannot compete with. What is potentially worrying in this platformization scenario (VAN DIJCK, 2013) is the dependence on data and predictive analytics that can force cultural, journalistic and political production to go in a specific direction, or even lead to social class/racial prejudices and, as a result, expand and replicate historical inequalities (O'NEIL, 2020; BENJAMIN, 2019; SILVA, 2019; CRAWFORD, 2021).

In view of this, the calculations and sorting performed by the algorithms are not just mathematical commands; it also requires a perceptiveness of political, economic and social issues to be effective. The essentially mediated nature of the social, according to Couldry and Hepp (2020, p. 14), is also based on material objects (interconnections, platforms, infrastructures, etc.) “through which communication, as well as the production of meanings, takes place”. Even still, one should not cast the term social aside and merely analyze meanings and technologies.

Algorithms are technical instruments that build and implement regimes of power and knowledge (BUCHER, 2012; BEER, 2016; GILLESPIE, 2014; JUST; LATZER, 2017; NAPOLI, 2013), and have normative and performative implications as their subjects attribute meanings and importance to the information they receive. Poell, Nieborg, and Van Dijck (2020) note that traditional research generally involves platforms and platformization (particularly in institutional terms), such as data infrastructures, markets, and forms of governance. As a result, they draw attention to the need for analyses that examine how platforms transform cultural practices, and how these practices transform platforms into specific sociotechnical constructions.

In the complex field of contemporary mediations, the algorithms and the power of digital platforms can and should be considered. Therefore, we argue that one should think of the algorithm as an object of analysis in journalism and communication studies, that is, to think about the issue of communicational mediations based on algorithms as a mediatizing stage of everyday life. In this concept, the algorithms are relevant to defining new cultural patterns of interaction.

Adopting a sociocultural perspective (MARTÍN-BARBERO, 2015) involves considering multiple social and cultural relationships (ESCOSTEGUY, 2004). More than just a study of reception, algorithms and platforms, the research problematizes their social and cultural insertion. The formation of algorithmic mediations (WINQUES, 2020), created from a free interpretation of Martín-Barbero's night maps (LOPES, 2018), involves thinking about the institutionalization of digital platforms and their infrastructure in a wide variety of social domains and their connections and implications with technicality (experience and sensitivity), temporality (multiple and flexible), flows (spatial and virtual), citizenship, sociality and narratives.

From this perspective, digital platforms gain relevance as a category of analysis in institutional mediations and reception processes. It investigates how content is consumed on a daily basis intersected by social practices from other mediations of the subject and technological conglomerates that capture and use data to help form public opinion. This is where the spiral of silence gains strength as an object of analysis.

Spiral of silence and contemporary issues

The spiral of silence theory², proposed by Elizabeth Noelle-Neumann (2010), states that society – and not just specific groups – can threaten individuals with isolation and social exclusion if their opinions differ from the majority. Grounded in social psychology studies, the author suggests that opinions on topics that involve moral and emotional judgments are particularly sensitive to the spiral of silence, especially when society undergoes significant social changes.

The theory is supported by four major components: 1) threat of isolation; 2) fear of isolation; 3) quasi-statistical sense (perception) through constant assessment of the climate of opinion – the media being one of the main sources of this observation; and 4) willingness to speak publicly or the tendency to remain silent. Noelle-Neumann (2010) adds a fifth component, a union of the first four. Each subject's perception of what others think weights heavily on their decision to express themselves or not in public –

² The concept was first presented in 1972 at the *XX International Congress of Psychology* in Tokyo. The book *The Spiral of Silence – Public Opinion: Our Social Skin* was originally published in 1982, in Germany.

and this process can develop over time. Thus, a spiral starts from the observation (of reality and reality through the eyes of the media) of a dominant opinion or social norm.

The spiral of silence mechanism explains how individual behavior at the micro level, such as public speaking under particular conditions, can extend to the macro level of forming public opinion. However, the author makes it clear that the prevailing opinion is not unanimous. Resistance can exist and is formed by subjects willing to speak out publicly even though they are a vocal minority. The researcher called these groups hardcore or avant-gardes; however, she did not elaborate on or operationalize the terms.

For Alexandre (2018, p. 15), the spiral of silence is a more comprehensive theoretical approach than it appears to be as Noelle-Neumann's proposition also tries to explain how "public opinion can affect the lives and behaviors of individuals, ensure social cohesion, and influence decision-making processes within a society". In its classical concept, the theory mostly focuses on how the media helps to form a climate of opinion. Martino (2009, p. 207) reinforces this perspective by stating that the main concept of the spiral model is linked to the construction of public opinion by the media, which can be understood as the "adoption of opinions implicit in media information and transformed into data for an opinion. The idea of public opinion seems to be more linked to imposition". This imposition takes place through a previously selected point of view on a given topic. The spiral of silence is not imperative, it develops over time.

Questions about how traditional media help build social realities were mostly linked to studies on *agenda-setting*, *framing* and even *gatekeeping*. Nowadays, however, we need to take into account that reality and collective memory are built through automated algorithmic selection. According to Just and Latzer (2017), there are two reasons for this new context: 1) the personalization aspect of building reality contributes to greater individualization; and 2) the group of actors is an integral part of the internet ecosystem. We can also add to this list: 3) the traditional press has less and less relevance on the public agenda;³ 4) rumors offer other frameworks; and 5) algorithmic mediations, based on their modulation (SILVEIRA, 2019) and performance (BUCHER, 2012), help to produce meanings and form individual and collective memory.

³ For Just and Latzer (2017), algorithmic filtering can be primary or secondary: the former refers to algorithmic processes which are based on results from the traditional agenda and the selection of media and, from that, a second (algorithmic) "filtering" takes place based on automatic combinations of user behavior.

The development of the internet and digital platforms brought changes to the spiral of silence; as a result, the application of the theory on the web is subject to adaptations. The perception of the climate of opinion is different from the perception guided by traditional media, especially when talking about algorithms, alternative media and *fake news*. Current conditions give subjects an increased willingness to express their opinions (MALASPINA, 2014). On the other hand, algorithmic filters limit debates by making some themes visible and others invisible. Public discourse online does not just refer to media exposure, but also includes the way subjects speak in public or on their social media profiles – and this user-generated content can produce different perceptions of the climate of opinion (PORTEN-CHEÉ; EILDERS, 2015). In terms of consumption, individuals find a plurality of voices and are able to choose sources that match their personal opinions or choose information from a variety of channels (SCHULZ; ROESSLER, 2012). Lastly, the presence of opinion leaders cannot be overlooked as creating a channel/network with millions of followers helps individuals to propagate ideas on a large scale.

Studies⁴ that sought to understand the phenomenon of the spiral of silence and its connection with social media and human/computer interaction have already been developed in Germany (PORTEN-CHEÉ; EILDERS, 2015), Italy (MALASPINA, 2014), Mexico (MORENO; SIERRA, 2016), the United States (STOYCHEFF, 2016; HAMPTON et al., 2014), Portugal (MOURA, 2018; CAMPOS, 2018) and Argentina (ANGELIS, 2016). After consulting the Capes Periodical Portal database in Brazil and the Google Scholar platform, we found several works with approaches focused on the hegemonic media. Two of these works focused on social networks: a dissertation (CARIBÉ, 2019) and a scientific article (MARQUES, 2019); however, the Noelle-Neumann theory is not a central theme in either of them.

The low number of studies that problematize the spiral of silence and the relationship between theory and algorithmic mediations were motivating factors to conduct this research. What's more, the approaches do not draw connections between these individuals' cultural/social contexts and how they use digital platforms and how they consume and receive journalistic content. Schulz and Roessler (2012) and Malaspina (2014) stress the importance that studies on this theory help advance our understanding of the public and the social context. For this reason, the perspective adopted in this study follows a more sociocultural aspect of studies on reception and mediation.

⁴ We conducted searches on Google Scholar and the Capes Periodicals Portal, on December 8, 2020, using the keywords "Spiral of silence", "Espiral do silêncio" and "La espiral del silencio". We selected studies where this theory is prominent/central in the theoretical or methodological approach.

Methodology and interviewee profiles

The object of study for the thesis dealt with the implications of algorithmic mediations with regard to public opinion and the reception of news by members of the Universal Church of the Kingdom of God and teachers in the Public Education Workers Union of Paraná (APP-Union) who reside in Curitiba (PR). The research included three methodological steps, all of which were approved by the Ethics Committee in Human Research (opinion No. 3,192,268). Step 1 involved a bibliographic survey and articulation with the social political context in Brazil. Step 2 involved applying a structured socioeconomic questionnaire for describing the individuals participating in the third phase (23 unionized teachers and 38 neo-Pentecostal evangelicals participated). Step 3 involved verifying the reception of the sociocultural matrix through in-depth interviews (GASKELL, 2002) with 16 people – eight from each group.

In the last step, we conducted an in-depth observation of the mediations and productions of meanings. We applied a semi-structured script⁵ and divided it into the following eight sections: 1): History: opening remarks; 2): Social profile and structural dimensions; 3): Use of devices and internet; 4): Climate of opinion – social networks or offline groups?; 5): Journalism and trust: between facts and rumours; 6): Fear of isolation: digital platforms and social community; 7): Ephemerality and social memory; and 8): Algorithms. For this article, we looked at the results from sections 2, 3, 4 and 6.

The interviews⁶ were conducted six months after Jair Bolsonaro was sworn in as president – between the months of August and October 2019. This sociopolitical context is important as the 2018 election focused heavily on the circulation of political information and on forming public opinion on the internet at a time when trust in the traditional press was low and hyperpolarization, hate speech, and an increased spread of rumors were on the rise (SPONHOLZ; CHRISTOFOLETTI, 2018).

The study of reception of sociocultural matrix (ESCOSTEGUY, 2004; MARTÍN-BARBERO, 2015) complements the results found in relation to the spiral of silence, so it is important to have a general profile of the interviewees (Chart 1). For the sake of anonymity, evangelical participants are identified by the letter E and teachers by the letter P.

⁵ The complete script is available in the thesis appendices (WINQUES, 2020).

⁶ In all, there were a total of 16 interviews conducted, containing almost 20 hours of audio material and 177 pages.

Chart 1 – Socioeconomic profile of participants and digital platforms used

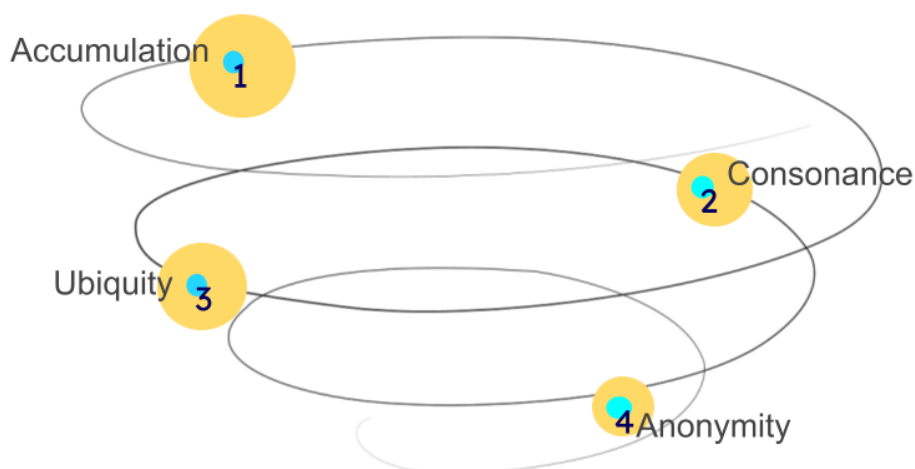
Sex	Male	E1, E3, E5, E7, P1, P3, P5 and P7
	Female	E2, E4, E6, E8, P2, P4, P6 and P8
Race/Ethnicity <i>Self-declaration</i>	White	E2, E4, E6, E7, E8, P1, P2, P3, P4, P6 and P8
	Black	E3, E5, P5 and P7
	Brown	E1
Age	18 to 29	E1, E2, E7 and E8
	30 to 39	E6, E5, P3 and P7
	40 to 49	E3, P1, P2, P4, P5 and P6
	50 to 59	E4 and P8
Education Level <i>complete/ incomplete</i>	Elementary	E4
	Secondary	E1, E3, E5 and E8
	College/University	E2, E7 and P2
	Post-Graduation	E6, P1, P3, P4, P5, P6, P7 and P8
Household Income <i>minimum salary</i>	Up to two salaries	E1, E2, E6 and E8
	Two to four salaries	E3, E4, E5, E7, P5 and P7
	More than five salaries	P1, P2, P3, P4, P6 and P8
Digital Platforms Used	Google	E1, E2, E3, E4, E5, E6, E7, E8, P1, P2, P3, P4, P5, P6, P7 and P8
	Facebook	E1, E2, E3, E4, E5, E6, E7, E8, P1, P2, P3, P4, P5, P6, P7 and P8
	Instagram	E2, E3, E6, E7, E8, P2, P6 and P7
	YouTube	E3, E5, E7, E8, P1, P2, P3, P4, P5, P6, P7 and P8
	WhatsApp	E1, E2, E3, E4, E5, E6, E7, E8, P1, P2, P3, P4, P5, P6, P7 and P8
	Twitter	P3
	LinkedIn	E1
	Pinterest	P7

Source: Winques (2020).

Reconfigurations of The Spiral of Silence

Pena (2015) reminds us that the spiral of silence works with three conditioning mechanisms: 1) accumulation: exposure of certain themes based on the ability to keep them relevant; 2) consonance: the similar way in which news is produced and conveyed; and 3) ubiquity: the way the media appears everywhere. However, looking at the spiral of silence in contemporary times (based on a reinterpretation of Noelle-Neumann’s work (2010), Pena’s thoughts on the subject (2015), and the data collected from the reception study) there appears to be four mechanisms (Figure 1): 1) *accumulation*; 2) *consonance*; 3) *ubiquity*; and 4) *anonymity*.

Figure 1 – Analysis mechanisms of the contemporary spiral of silence



Source: Winques (2020).

Accumulation

This is the exposure of certain topics based on the ability to keep them relevant, not only from the press but from the visibility they gain in *feeds*, trending topics, etc. This can occur in three ways: a) the virality of content, meaning information that spreads with relative ease and has high engagement on platforms; b) recirculating content achieved not only by algorithmic mediation systems but also by subjects with clicks, comments and shares; and c) by the algorithms themselves.

In terms of the temporality of algorithms (DOURISH, 2016), many of the stories that receive visibility are formed from a *feedback loop*. Information on trending topics or information that appears at the top of a *feed* or *ranking* occurs through a logic that operates on what gets the most views or clicks. It is a reflexivity where popularity is a major criterion in generating results (NAPOLI, 2013). Popular content gets recommended more, thus giving it more visibility over other content. This recirculation demonstrates the social power algorithms have in relation to temporality or currentness, the result of a relationship of forces between subjects and algorithms (BUCHER, 2012). Accumulation can thus result from the looking-glass self⁷ and add to confirmation bias or to the production, reproduction and reshaping of meanings.

⁷ The looking glass perception suggests a biased understanding not towards the tone of the media, but towards an individual's own attitudes.

In terms of behavioral bias, accumulation can lead to different perceptions of the climate of opinion and lead to isolation. Based on the evidence collected from the thesis, it is clear that the cyclical scenario (observed in the post-election period, polarization of narratives, and dissemination of rumors) does not provide virtual spaces as environments in which public debate can take place and consolidate. 11 of the 16 participants prefer to express their opinions offline. The perception of most of the participants is that the online environment distorts and manipulates information, can lead to reputational damage, monitoring, and online hate crimes. Porten-Cheé and Eilders (2015) remind us that public discourse in online environments does not only refer to media exposure, but also includes the way subjects speak in public or on their social media profiles – and this type of content can produce different perceptions of the climate of opinion.

Those who equate the internet with a hostile environment are more likely to trust everyday social spaces, or they follow channels that are more in line with their beliefs and/or ideologies. In terms of consumption and trust in media outlets, most evangelicals in our study refer to channels associated with the Universal Church, particularly Rede Record. Most teachers in our study use alternative portals, such as Revista Fórum, Blog da Cidadania, and Brasil 247. Although we did observe a wide diversity of news sources from the use of platforms, this diversity is based on an accumulation of more polarizing news sources.

Consonance

This is the similar way in which information is produced, not only by journalists but by the subjects themselves, or even influencers (vertical or horizontal). It is also about how this information is disseminated, not only by the press but through channels saturated by filters and machine learning algorithms that help with confirmation bias, such as Facebook, YouTube, Google, and others. Influencers are not always recognized in a given social group, particularly due to the plurality of networks and channels. Regarding the forming of opinions, both vertical and horizontal leaders are important. Vertical leaders, for example, are prominent figures like a president, while horizontal leaders are represented by those whose opinions are considered relevant, but do not assert their power in a broad and homogeneous way over the group.

Digital platforms can effect how subjects perceive and produce meanings about events. Newspapers and social networks were sources that influenced the opinion of evangelical participants on the question of what the main problem in Brazil was. E1, E4, E5, E7 and E8 mentioned that the news was one of the sources that defined their positions, while E1, E4, E5 and E8 share the same vision: corruption. E2 and E3 said family structure was the biggest problem in Brazil, E7 listed education, and E6 said love for others. For teachers, educational institutions were identified as the biggest problem. P1 and P2 listed school and rumours. P4, P5, P6 and P8 mentioned school and politics, and P3 and P7 mentioned school and illiteracy and/or ignorance. In the case of automating the public sphere, Pasquale (2017) believes the negative effects include the impoverishment of cultural diversity and political plurality. This impoverishment can increase the consonance of the discourses and the polarization of the disputed narratives since the most visible groups are prioritized and replicated within each conversation space through algorithmic mediations and accumulation effects.

Ubiquity

This is not just the way the media appears everywhere (on television or mobile devices) but the way in which individuals as propagators and producers, and algorithms as mediating agents, can appear in a number of spaces, times, interfaces and *feeds*.

Couldry and Hepp (2020) state that we need to understand media as being able to focus reflections on technological forms of communication; however, it must be open enough to capture the contemporary variety. A new medium or technology does not immediately replace previous ones. In the group of evangelicals, despite television being mentioned as a means of obtaining information, digital platforms have more of a prevalence in their day-to-day interactions. The three most-used forms of media include television, Facebook (the main social network for most participants), and Google (the main source for obtaining information and accessing news sites). In the case of teachers, television is not an often-used medium, digital platforms, specifically Google and Facebook, play a greater role in their routines. The triumvirate relationship of the media is formed by the two Silicon Valley giants and the traditional and alternative press news sites. The choice of sites is often mentioned, so it becomes important.

The algorithms permeate the triumvirate relationships in both groups, particularly because when respondents access the most popular websites or watch television, they do so using their mobile devices,

which are constantly connected to the internet. As a result, they are constantly using search engines and social networks. That is why digital platforms are increasingly present in a ubiquitous way in culture, politics, and social and collective life. What's more, due to this fragmentation it is possible that several spirals of silence work simultaneously, one for each individual's choice, whether political, social or ideological. These choices are linked to how subjects use perception to observe and interpret the media, their networks, and their social environment.

Anonymity

Bots, trolls, and algorithms (especially machine learning ones) form a layer of content dissemination that is unidentifiable. It is a "faceless crowd", and as a result it works differently from the press, which has an editorial policy, a code of ethics, and journalists who author the news and stories they cover. Therefore, we need to further our understanding of the technical and circulatory aspects of these robotics, or maybe even use methods such as Social Network Analysis or Digital Methods (D'ANDRÉA, 2020; OMENA, 2019; SLOAN; QUAN-HAASE, 2016).

These methodologies, combined with the political-social-cultural context, can give us a broader understanding about the formation and propagation of opinions, about polarization, and about the visibility or invisibility of certain themes in online public debates. These kinds of distributions, collected through analysis software that analyzes digital traces left on the platforms, can be visualized by creating a graphic visualization (graphs) in the form of spread maps, word clouds, bubbles, or heat waves. Although these methods were not applied in this study, we did observe that data analysis from this type of methodology can be important towards understanding the signs of the spiral of silence on digital platforms.

The tools mentioned above, which can be used from a methodological and/or epistemological point of view, show that the press is not the only actor that forms public opinion on the internet. They can appear independently, but generally appear in groups. Another interpretation is that the spirals can be multiple and simultaneous according to the sociocultural conditions of the individual or group under analysis.

Final Considerations

The spiral of silence is a theory pertaining to the field of communication and journalism proposed by Elizabeth Noelle-Neumann nearly 50 years ago. Proposing a reinterpretation of classic works could lead to an error in chronology. This risk increases particularly in the field of communication and journalism, where the advancement of technologies, devices, or even platforms and algorithms change at a rapid pace. This study recognizes that there is a fundamental difference between what Neumann first proposed and its current application. Despite their temporal differences, the context of political changes is common in both studies. Another aspect is the search for concepts that are more attuned to social psychology (a willingness to express opinions) and that approximate the cultural context of the subjects – although Neumann did not approach this her study.

Looking at the relevance of algorithms in defining new cultural patterns of social interaction requires one to investigate the theory while being mindful of algorithmic mediations. In addition to the categorization presented above, we argue that the control with which codes and their filtering protocols operate should not be reduced to bubbles or echo chambers. Algorithms are invisible calculations that are deeply rooted in the daily lives of subjects, appropriating their sociocultural characteristics while creating spirals of silence that form public opinion and assist in decision-making and the construction of social memory.

Describing the relationship between technique and politics and applying it to algorithms and the formation of spirals of silence is particularly important because this connection can help explain the invisibility of technological communication (computing processes) and how it interferes in politics and democracy. According to Silveira (2019, p. 97), mediation and algorithmic control, when used over a long period of time, can “create invisible asymmetries and completely undemocratic performative imbalances”. Platforms focus on social manifestations and forms of social organization, and when people communicate on platforms their information does not only come from subjects or interactions between people, but also from algorithms, which offer an interesting, if not economic, view of the facts. Lastly, based on the results found, we believe it important to think about communicational mediations in consumption and reception, based on algorithmic mediations, as a mediatizing instance of everyday life. In short, it is important to reflect on how the infrastructures of digital platforms connect people's social lives and how these connections/mediations generate feelings and meanings that go beyond the very use of media.

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Abstract

This paper deals with the reconfigurations of Noelle-Neumann's (2010) original theory and presents an analysis categorization for the contemporary spiral of silence, which involves four mechanisms: 1) *accumulation*; 2) *consonance*; 3) *ubiquity*; and 4) *anonymity*. In order to avoid excluding the term social and analyzing meanings and technologies separately, the results in this paper were presented from a sociocultural matrix reception study with eight unionized teachers and eight neo-Pentecostal evangelicals residing in the city of Curitiba (PR). Once determining that algorithms are relevant towards defining new cultural patterns of social interaction, we found the need to investigate consolidated theories in the field of communication and journalism in the light of algorithmic mediations.

Keywords: Journalism. Communication. Spiral of Silence. Algorithms. Reception.

Resumo

O foco deste trabalho é tratar das reconfigurações da teoria original de Noelle-Neumann (2010) e apresentar uma categorização de análise da espiral do silêncio contemporânea, que envolve quatro mecanismos: 1) *acumulação*; 2) *consonância*; 3) *ubiquidade*; e 4) *anonimato*. Com a intenção de não abandonar o termo social e analisar sentidos e tecnologias de forma separada, os resultados apresentados foram construídos a partir de um estudo de recepção de matriz sociocultural com oito professores sindicalizados e oito evangélicos neopentecostais residentes em Curitiba (PR). Ao considerar que os algoritmos assumem relevância na definição de novos padrões culturais de interação social, observa-se a necessidade de investigar teorias consolidadas do campo da comunicação e do jornalismo à luz das mediações algorítmicas.

Palavras-chave: Jornalismo. Comunicação. Espiral do Silêncio. Algoritmos. Recepção.

Resumen

El objetivo de este artículo es abordar las reconfiguraciones de la teoría original de Noelle-Neumann (2010) y presentar una categorización del análisis contemporáneo de la espiral del silencio, que involucra cuatro mecanismos: 1) *acumulación*; 2) *consonancia*; 3) *ubicuidad*; y 4) *anonimato*. Para no abandonar el término social y analizar significados y tecnologías separadamente, los resultados presentados se refieren a un estudio de recepción de matriz sociocultural con ocho docentes sindicalizados y ocho evangélicos neopentecostales residentes en Curitiba, Brasil. La relevancia de las mediaciones algorítmicas en la definición de nuevos patrones de interacción cultural implica la necesidad de investigar teorías consolidadas de la comunicación y el periodismo a la luz de las mediaciones algorítmicas.

Palabras clave: Periodismo. Comunicación. Espiral del silencio. Algoritmos. Recepción.

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