

Assessing the impact of echo chambers and their role in the spread of information disorders

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Public discourse is nowadays dominated by growing concerns about the possibility that hybrid media systems in which online platforms are becoming more relevant in news' access and consumption might be contributing to societal polarization. Part of this concerns are connected about how easily seem to spread disinformation disorders in media systems in which news media are becoming more partisan and news' consumption, although still dominated by legacy media, is becoming more and more related to online players. The fact that distrust on news media is also growing in most media markets contributes to a general state of opinion that questions the news diets and quality of the information that is actually consumed by citizens in Western democracies.

A key element central to these concerns is the high-choice nature of current media systems. Last decades have seen how from few choices of media sources citizens have now almost infinite possibilities to access news content. Access to news have also changed as citizens turn to social media and other online platforms as their main source of news. The question is, if citizens have all these possibilities to customize or curate the information they receive, how can we assume that they are going to be challenged by opposite points of view? After all, since the first inceptions of the public sphere concept it is normally considered necessary for a healthy democracy that its citizens make informative political choices basing on the different information they receive. In the ideal habermasian concept of the public sphere citizens are exposed to different points of view and, through public debate and deliberation, form their personal opinion about public issues and political positions. Are we witnessing then a disorder in the public sphere as citizens have it easier nowadays to refuse to be exposed to challenging points of view? How this interrelates with the growing political polarization that we can see in liberal democracies?

The most pessimist theories about the partisan echo chamber hypothesis defend precisely this: within media systems characterized by high choices and easy access to news sources citizens will be more likely to turn to those that reaffirm their core beliefs, rather than engage with those sources that challenge them. Therefore, echo chambers of the hybrid media system will be more likely to reinforce selective exposure while diminishing the chances for incidental exposure, magnifying pre-existent beliefs and isolating citizens from those that may present alternative points of view. As we will see, this effect implies two elements: citizens' personal factors (is easier for citizens to isolate themselves) and platform-related factors (social media and other internet-based platforms used to access news are characterized by technological affordances that precisely reinforce these trends).

It is therefore relevant to analyse more in depth how selective and accidental exposure function if we need to assess the existence, or myth, of echo chambers. Selective exposure theory was developed some decades ago, within the context of a news ecosystem dominated by press and audio-visual formats (Lazarsfeld *et al.*, 1948; Zillmann & Bryant, 1985). It states the preference of citizens to consume information from news media outlets in line with their political positions and core beliefs. Last decades have seen how media ecosystems acquire more diversity: not just from the widespread adoption of the Internet, but even before, with the creation of a higher number of private TV channels or cable and satellite TV. The atomization of audiences has been a topic of discussion by authors such as Sunstein (2018) or Galston (2002), warning about the pernicious effects that such trends may have for life in democracy. The fragmentation of the public sphere is precisely the main point of concern (Prior, 2007; Dahlgren, 2013) with publics lacking common informative reference, especially in countries such as the United States that lacks a strong public service broadcaster. Hence, within a high media choice scenario, selective exposure may lead towards a society based on citizens gathering around media choices that represent small groups of like-minded and non-critical parts of the public, diminishing the representation of common interest, societal goals and even more neutral points of view.

Fears about the substitution of the public sphere by “solo spheres” (Dahlgren, 2013) stress the existence of not just citizens' adoption of an active behaviour aimed at selective exposure, but also the declination or regression of mechanisms that facilitate incidental exposure. As Prior (2007) notices, the broadcast era was characterized, among others, by few media choices. The scarcity of choices implied also more internal pluralism in each one of them. Hence, within an environment with few media choices that are more plural, citizens' exposure to neutral or antagonistic points of view was more common. In the post-broadcast era characterized

by a high-choice media environment part of the academic debate has been focused, last decades, in analysing if Internet and social media were promoting news diets based on selective exposure or if, rather, new patterns of media consumption were producing more possibilities for incidental exposure (Suau, 2015).

Here is key to understand that the current news media environment is not the same for all citizens. As recent research proves, different age cohorts tend to access news through diverse sources (Newman, 2022). While young access news through TikTok or other social media there is still a relevant group of citizens that follow news through radio and TV, like it was common in the broadcast era. Hence, as Chadwick (2013) highlighted, “old” and “new” media coexist in a hybrid media system, rather than substitute each other. Moreover, citizens do not stick to one format, but access news through multiple of them, in patterns of cross-media consumption that are hard to track using surveys and other traditional research methods (Schröder, 2015). Hence, while some citizens follow patterns of media consumption that resemble those of former media environments, other audiences access news through channels and formats that directly challenge our traditional understanding of selective and incidental exposure. As a consequence, research done last decade about the existence, or not, of echo chambers provides sometimes what seems to be contradictory information.

Research that stresses the widespread extension of echo chambers highlights the growing importance of social media platforms in news consumption. As news become more “social”, contacts on such spaces acquire more relevance to shape citizens’ news diets (Guallar *et al.* 2016), becoming what has named as “secondary gatekeepers” (Singer, 2013). The more a citizen relies on Facebook, Twitter etc to consume news, the more relevant the nature of contacts on that specific social media will be: if we follow a varied number of people and news media accounts our feed or timeline will be very different than if we just follow high partisan news media and other citizens that share the same political positions and core beliefs. In this way, we can easily fabricate our own echo chambers if we access news mainly through a certain online platform and the contacts there are mostly like-minded individuals. Sunstein (2018) warns against a system of news’ distribution dominated by social media platforms, as it allocates a great power (and responsibility) on citizens, contributing to increase political polarization. However, despite social media platforms are normally mentioned as a homogeneous group, the fact is that each one of them allows for different technological affordances that shape its social use and possibilities for news’ consumption. For example, citizens tend to follow more acquaintances in platforms such as Facebook than in Twitter, while WhatsApp tends to be the platform where shared news are more trusted,

as it is the one with closer ties between contacts. The use of groups and the possibilities to spread messages are also very different depending on the platform (Masip *et al.* 2021). Platform factors and affordances are then relevant in shaping selective and incidental exposure and, as a consequence, the existence of echo chambers.

Fears about the spread of echo chambers sometimes use the concept together with a similar one, filter bubbles. Echo chamber is a concept designed to describe the limited or like-minded media space or media diet that a certain individual inhabits. Filter bubble describes the situation in which our feed or timeline in an online platform adjusts our news consumption according to ranking algorithms aimed at passive personalization (Pariser, 2011). Despite their similarity, the concepts describe situations that produce different outcomes: we may argue that abandoning an echo chamber depends on our own decision, while filter bubbles are harder to detect and, therefore, to abandon. Nevertheless, research sometimes studies them together, as is complicated to methodologically separate one from the other. For example, in survey research testing news from Facebook or Twitter, how can we be sure that the respondent tends to receive more news from that certain media due its selection of contacts or due an algorithm? Even though that, some studies attempted to focus on the personalization effects of algorithms, finding no relevant evidence of filter bubbles in Google or Facebook (Hannak *et al.* 2013; Bakshy *et al.* 2015).

Regarding echo chambers, results point towards a similar conclusion. A first wave of studies was centred in finding if social media were increasing accidental exposure or, rather, reinforcing citizens' strategies for selective exposure. First of all, some research was optimistic in the sense that, understanding social media as basically used for entertainment, the capacity of these platforms to make citizens "find" news while conducting other online participatory practices was celebrated (Mitchell *et al.* 2013; Barbera *et al.* 2015). Apart from "finding" news, research also showed that those content was more plural than some previous studies thought. This was due the fact that people on social media tend to reproduce their offline social networks. Hence, despite we all tend to gather predominantly with like-minded people, for most of us social life implies gathering with others who show ideological discrepancies. Social media, then, are not based on homophily but in more heterophilic networks (Purcell *et al.*, 2010).

Recent studies have focused also on analysing not just news from social media, but the overall media diets of citizens. With most research focused on USA or UK, Fletcher *et al.* (2021) found that citizens informing basically only from hyper partisan right or left wing media were just around 2-10% of the population. Similarly, another study from UK

(Dubois & Blank, 2018) established as around 10% those citizens that are never exposed to opposite points of view in their social media use. Different studies slightly differ about such percentages, but this is partially due to the different definitions used to define those citizens “living in an echo chamber”. While some studies define as inhabiting echo chamber those citizens with media diets of just extremely positioned news media, others focus on studying if citizens were aware of getting in touch with opposite ideas, when watching TV, radio, browsing Internet or through social media. Each methodology has its pros and cons. For example, as Arguedas *et al.* (2022) point out, Fox News is defined by some as a producer of fake news and hyper partisan media, while by a relevant sector of Americans is actually a well trusted news media. Hence, both citizens’ perceptions in self reporting news consumption, as well as researchers’ personal bias in establishing categories may play a role also in analysing the existence of echo chambers.

Despite this methodological issues, what can be argued is that most citizens do not inhabit echo chambers of information that avoid them to enter in touch with non-affine information. It seems, however, that a relevant number (between 2 and 10%, depending on studies and countries) do actually inhabit such media spaces. Even if most research has been focused on USA and UK, Spain shows similar results. For example, using survey research and web-tracking online data Cardenal *et al.* (2019) found that most citizens do consume mainly like-minded sources of news, but their media diets are diverse and news consumption includes (willingly or accidentally) also non like-minded news. Despite their results challenge the hyper partisan echo chamber hypothesis they do find also clues that help to understand which citizens may inhabit in such spaces. As “selective exposure intensifies as news consumption increases” (Cardenal *et al.*, p. 34) we may consider that citizens with more media and political engagement are among those more likely to have restricted media diets. Contributing to the explanation of how selective and accidental exposure work in a hybrid media system, Masip *et al.* (2020) found that social media use can be associated with greater exposure to non like-minded news in Spain. Even without considering for accidental exposure those Spanish citizens that regularly visit news media that they identify as ideologically opposite is around 27%. Researchers also found that the effect of social media in reinforcing accidental exposure differs depending on the platform, being this more restricted by Facebook and more relevant in Twitter, with no significant results for WhatsApp or Instagram. However, at the end the potential for incidental exposure of each online platform is shaped by both its technological affordances and also by the nature of the contacts we have there: the more diverse, the more likely we are to “find” non-like-minded news (Masip *et al.*, 2021).

However, despite we can dismiss the fact that echo chambers are something affecting overall society, we do have evidence that echo chambers exist in niche social groups. We may discuss if in a certain country or media market this means around 2 or 10% of the overall population, but by focusing on the overall number we might be missing the point. Dahlgren (2013) warned about a public sphere with no central point, atomized or divided into several smaller or “solo” spheres with scarce connection with others. Such spaces foster the spread of disinformation and, therefore, distrust and polarization, as citizens are trapped into a chamber of like-minded information, usually around a limited amount of topics related to conspiracy theories or hyper partisan media (Bakshy *et al.*, 2015; Khaldarova & Pantti, 2016).

The relevance here is to assess the capacity of such societal groups to shape public debate and even to grow and extend, attracting more citizens: rather than exist permanently hidden or in niche groups, echo chambers inhabiting the margins of society may become more relevant if their voices are amplified and their narratives accepted by more mainstream actors. To put an example, QAnon and other far right groups seemed marginal and too extreme to be politically relevant just one decade ago, but they helped to appoint Donald Trump in 2017, and some years later stormed the Capitol, making clear the dangers of niche groups inhabiting echo chambers and promoting political polarization. As a result, some of their beliefs and political positions have jumped from marginal echo chambers to mainstream news media outlets.

To understand this process, we need to consider that, as explained by Han (2021) echo chambers are not just a technological problem, but a societal one, as citizens inhabit them due factors such identity and distrust. Firstly, for far right and extreme left groups, as well as followers of conspiracy theories, their identity is based on a series of extreme attitudes and positions that are part of their life style: they do not merely define core beliefs, but daily life. Their isolation in terms of access to news and divergent opinions is more a personal choice than a technological outcome of the new media environment. In any case, technology reinforces their capacity to limit incidental exposure and reinforce selective one, allowing them to get in touch and exchange content with like-minded people. Furthermore, inhabitants of such spaces are likely to undertake cognitive bias when exposed to divergent opinions. Although most citizens do not avoid counter-attitudinal information and accept and even seek content from non-like-minded sources this do not apply to all societal groups (Guess *et al.*, 2018; Valentino *et al.*, 2008). Hence, for this 2-10% of individuals there is no need for the echo chamber to be fully isolated, as their identity is based on the fact that counter-attitudinal information must be rejected for personal identity reasons. Otherwise, the citizen loses identifi-

cation to the extreme group, loosing also friendship and spaces of interaction, both on and off line.

Secondly, we need to consider that echo chambers and extreme political polarization are fuelled by broader issues of distrust towards traditional actors, such as institutions, media actors and political parties. Increasing distrust is, precisely, the main goal of disinformation content, as it increases political polarization and reinforces extreme echo chambers: disinformation studies normally warn against the pernicious effects of the spread of such content for life in democracy, as disinformation is assumed to increase the crisis of trust on liberal democracies and society as a whole (Granelli, 2020). As it happens with echo chambers, the overall public is not drowned by a myriad of different disinformation content produced by bots and hyper partisan media. Recent research has proven that disinformation is a limited problem with limited reach among most western publics (Jungheer & Schroder, 2021). However, as with echo chambers, we might miss the point if we focus again in assessing its impact in terms of the overall population. To assess the real impact of disinformation we need to better understand which are the targets of disinformation campaigns in terms of societal groups. More specifically, we need to assess if these are likely to inhabit echo chambers, as well as the potential of those groups to spread the message and shape public opinion into a certain direction, always keeping in mind the interrelation between disinformation and spreading distrust.

Hence, we advocate for the need to design methodologies to better understand the impact of disinformation taking all aforementioned issues into account, basing into a two-steps design. The first step here is to analyse the spread of disinformation narratives among its intended or targeted niche group. After all, is hard for a disinformation campaign to create impact (diminish trust) if it does not reach its intended targeted public. To prove that a certain disinformation narrative has reached its target we will need for multidisciplinary and mixed methods approaches: depending on the targeted group and the identified channels of disinformation some methodologies and approaches will be more useful than others. For example, survey research may be interesting to assess how deep disinformation narratives have entered into certain social groups, as far as this can be defined and represented through survey research. However, to study the spread of disinformation narratives does not necessarily mean the same than studying their impact. Spread among the target group is a precondition to societal impact but does not ensure it per se. Research needs to move here into detection of broader impact out of niche target groups, identifying if these have been successful in amplifying the message and get into mainstream news media and broad public opinion therefore diminishing societal trust. This approach implies to move from the study of how

disinformation spreads to the study of its impact, understood as changing attitudes and motivations towards certain topics by different groups of citizens, as well as by its effectiveness in reaching public opinion. To summarize, we argue that disinformation campaigns need to be perceived as aimed at niche groups (likely to inhabit echo chambers), but that its ultimate goal is to affect, indirectly, overall society.

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