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Debating (In) Echo Chambers: How Culture Shapes Communication In Conspiracy Theory Networks On YouTube

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Abstract

The ubiquity of social media platforms fuels heated discussions about algorithms and selection biases leading people into online "echo chambers". Scholars argue that social media deepen societal polarization and fuel political extremism. However, studies are often focused on what media does to people (media effects), disregarding individual agency and (sub)cultural values that shape these conversations. As a strategic case study, this paper is based on a mixed methods analysis that includes a social network and qualitative analysis of 1199 comments under four conspiracy theory comment sections on YouTube. This article questions whether online conspiracy discussions are insular, resembling echo chambers, and analyzes how people in these networks communicate. We find that the discussions in our strategically sampled comments sections lie between homogenous closed debates and open debates. In other words, the networks in our sample vary in their "echo chamberness." Based on our findings, we contend that variations in the echo-chamberness of the various comment sections can be explained via the lens of conspiratorial (sub)cultures.

Introduction

The internet, once viewed as a medium that strengthens democracies by providing easy access to information (e.g. Berman & Weitzner, 1997), is now often seen as a major catalyst of disinformation and conspiracy theories (McIntyre, 2018). Social media platforms and search engines personalize information based on former online behavior and allegedly capture people in data-driven homogenous spaces called "filter bubbles" (Pariser, 2011). Moreover, like-minded people form online communities in which shared beliefs are consolidated and amplified, while dissenting voices are excluded. Self-enclosed online "echo chambers" cause great concern because, some argue, they lead to societal polarization and political extremism (Sunstein, 2017). Conspiracy theories are a case in point in these societal and academic debates. From QAnon, Flat Earth to theories about the COVID-19 virus being a politically engineered hoax – conspiracy theories circulate widely on social media platforms (Harambam, 2020). They are assumed to be both cause and consequence of online "rabbit holes" leading people into echo chambers (Del Vicario, et al., 2016). Here, people engaged in conspiracy theory groups consolidate their alternative worldviews, simmering in an ecology of homogenous ideas and negating counterfactual information and excluding dissimilar people.

However, is that truly the case? Departing from an audience studies perspective, we investigate how people in online discussions centered around conspiracy theories communicate. We

draw on the assumption that audiences are active and diverse in their readings of media texts and that these different understandings are grounded in subcultural values. Is communication in so-called echo chambers indeed self-confirmatory, homogeneous and, hence, strengthen the group's insular thinking? Or do they negotiate, debate or even oppose alternative information? The underlying theoretical issue at stake is whether conspiracy theory groups online are correctly understood as self-enclosed echo chambers. To answer these questions we chose conspiracy theory discussions on *YouTube* as a theoretically strategic case study. Scholars and journalists pointed at *YouTube* as the "great radicalizer", leading people into "rabbit holes" of increasingly extreme (mis)information and conspiracy theories (Tufecki, 2018; Lewis, 2020). *YouTube's* reputation as an ideal-type "radicalization machine" makes it an excellent case to study how people in echo chambers communicate with one another. We apply Stuart Hall's (1980) encoding/decoding model to a mixed-methods analysis of 1199 *YouTube* comments under four conspiracy videos that were theoretically sampled from four major conspiracy theory domains: politics, mysteries of the universe, culture industry, and science. The paper qualitatively analyzes people's interaction and uses a Social Network Analysis (SNA) to investigate communicative homophily in each community. The following sections outline the theoretical model we base our study on and presents the results of the mixed-methods analysis.

Debating Echo Chambers

The term echo chamber is commonly used in essayistic ways. Conflicting definitions of the concept have been proposed. Some scholars use the term to describe an online environment where people with similar beliefs, political leanings or opinions share and reinforce each other's points of view (Cinelli et al., 2020). Others point to the role of personalized content and selective exposure in shaping self-confirming environments (Sunstein, 2001, Garrett, 2009). Nevertheless, most scholars use the term to refer to pro-attitudinal communication environments (Boullianne et al. 2020). We conceive of echo chambers as online spaces where, driven by similarities among users, similar interpretations of the same media text dominate the conversation.

Echo chambers are characterized by *homophily*, the tendency for people with similar worldviews to form ties with each other (Colleoni et al., 2014). The more alike people and their communications are, the more the network resembles an "echo chamber" (and vice versa). What are the explanatory mechanisms unraveled in the literature for such self-enclosed echo chambers? A number of quantitative studies have used computational methods to demonstrate that content-selective exposure is the primary driver of the formation of echo chambers (Del Vicario et al., 2016). According to Garimella, et al. (2018) *Twitter* users are exposed to opinions similar to their own while those who bridge oppositional "echo chambers" are penalized by lower content appreciation and a

lower degree of network centrality. Shortly put, in such accounts it is held that technology, or platform specific affordances, contributes to the formation of echo chambers.

Other scholars have criticized this focus on the technological affordances facilitating the formation of echo chambers. They shift their attention to contextual factors of online interaction, like users' motivations for consuming mediated content and their group-forming interactions (Guess et al, 2018; Geiß et al., 2021). They argue that most people tend to consume a broad array of information. It is primarily people with *extreme* political views to be more susceptible to the echo chamber effects (Dubois & Blanc, 2018). Taking this critique on technological determinism one step further, Bruns (2019) scrutinizes studies blaming algorithms for political disruptions and calls for studies that go beyond platform-dynamics alone. In a similar vein, Tosoni (2021) critiques the deterministic logic in echo chamber studies observing a problematic "return to a powerful media effects paradigm" – an approach that "conceives messages as unidirectional vectors of persuasion that transform people's behavior in a direct and somewhat mechanistic way" (Tosoni, 2021: 175). The central critique of all these scholars is that common conceptualizations of echo chambers do not adequately capture the social, cultural, and political factors influencing people's behavior in online spaces and beyond. To gain more empirical insight, we must therefore look at what people actually *do* with information on social media platforms where conspiracy theories flower. In doing so, we must turn our focus from whether and how algorithms lead people into these spaces towards a discussion of how and what people discuss in online environments.

Audience Studies: The (Sub)cultural Decoding of YouTube Videos

To contribute to the echo chambers debate, we move away from prevalent techno-determinist ideas and take an audience studies perspective, which highlights the role of agency and culture. In particular, we will discuss the role of active interpretations and subcultural meaning-making of media texts shaping communication.

Our analysis of the comments section of YouTube videos is informed by theories in media studies and audience research, popularized by Jenkins (2006) and Hall (1980). These ideas bring agency back into the conversation. Hall argues that media texts are "encoded" with a particular ideology, giving way to its hegemonic understandings of the media product. People "decode" such media texts departing from their distinct socio-cultural positions. He identifies three major "readings" of media texts: *dominant, negotiated and oppositional*. The first aligns with the intended meaning of the producer, the second interrogates it, while the last one negates it. Looking at echo chambers through an encoding/decoding lens means investigating whether people have varying interpretations of conspiratorial media texts within enclosed mediatized spaces. Hall wrote about mass media content like television long before the internet, but his argument of active media consumption applies to people's *online* behavior with media texts, too. On social media platforms, people actively discuss videos, memes, pictures, and narratives leading to countless novel interpretations that, in turn, are

3

shared on the internet (Aupers, 2020). Media texts remain "polysemic" (Morley, 1980). Stuart Hall's conceptual framework complements Jenkins' (2006) conception of "participatory culture" like a glove. Unlike traditional mass media, the internet is a non-hierarchical arena that facilitates the active engagement of audiences. Individuals move beyond being mere consumers by participating, contributing, and co-creating media (Jenkins, 2006).

First of all, we hypothesize that media texts on social media platforms like YouTube do not inevitably lead to *homophily* as the echo chamber-thesis suggests. Rather, people express different readings that may confirm, negotiate or even oppose the conspiracy theory proposed in the text.

Our second theoretical assumption is that such readings are neither individual nor arbitrary since they are always embedded in and guided by the (sub)cultural position of the audience. Taking a sociological position, Hall (1980) and Morley (1980) already demonstrated that different types of readings can be explained by people's socio-economic position and the intersection of variables like education, gender, race and cultural worldview (Abercrombie and Longhurst, 1998: 17). This, then, opens the question what the influence is of the key values, norms and codes of conspiracy (sub)culture(s) in the reading of YouTube video's. In prior studies it is argued that conspiracy theorists in general reinforce echo chambers because of the "self-sealing" quality of their culture: they tend to read contrasting evidence as essentially verifying their adopted and cherished conspiracy theory (Sunstein & Vermeule, 2009; Nguyen, 2020). This notion is problematic as it assumes homogeneity across different conspiracy domains and groups. Indeed, conspiracy theorists in general do consider themselves "outsiders" (Becker, 1963) and consistently resist "mainstream" official institutions, the ruling "power elite" and their knowledge (Aupers, 2012; Barkun, 2006; Knight, 2000). However, recent studies empirically demonstrate that conspiracy culture is no monolithic whole since it consists of distinct subcultures that hold substantially different beliefs, worldviews and practices (Harambam & Aupers, 2017).

Studying the readings and debates in online groups around conspiracy videos, thus, implies considering the different subcultures in the milieu. In other words, different conspiracy topics attract different audiences that vary in interpretation and communication. The flat-earth movement, for instance, has spawned its own subculture with particular symbols, codes and norms: participants may draw from countless epistemic sources (Paolillo, 2018) but profess clear scientific methodologies, and "objective measurements" to make their claims (Dentith, 2017). Individuals engaged with theories about conspiracies of Illuminati in the culture industry, on the other hand, are less interested in "scientific evidence" and openly share interpretations of symbols and signs in media texts (Grusauskaite et al., 2022) while people in the supernatural or anti-vax conspiracy subcultures rely much on intuition, personal experience, or draw the interpretations of ancient knowledge and histories (Harambam & Aupers, 2021). In other words, beyond a general distrust of the official and accepted "truths", conspiracy cultures like Flat Earth or Culture Industry have little to do with tight-knit

4

conspiracy subculture like QAnon, which is more political in nature and is sometimes referred to as a "self-referential universe" (Lighthouse Reports, 2022).

Based on these assumptions we hypothesize that people engaged with conspiracy videos on YouTube are more active and heterogeneous in their interpretations than the echo chamber thesis accounts for. Audiences may confirm the ideological message of the text, however, they may also negotiate or oppose it. These different readings may be understood bearing in mind the different conspiracy (sub)cultures. To explore this theory of (sub)cultural decoding and empirically asses whether there is more heterogeneity *within* online groups and *between* online groups than echo chamber theory assumes, we empirically study the comments under four different conspiracy theory YouTube videos.

Methodology

To address our research question we performed a qualitative and Social Network Analysis of 1199 YouTube comments under four conspiracy videos. Motivated by our theory on (sub)cultural decoding outlined above, these videos were theoretically sampled between May and June 2020 from a larger corpus of initially selected (200) YouTube videos on the sub-reddit r/conspiracy. We looked on this sub-reddit for the most mentioned YouTube links, resulting in 40 YouTube channels and their top 5 videos (equals 200). We used this sampling method for two main reasons. First, *Reddit* is frequently cited as a primary source for the dissemination of conspiracy contents (Klein et al., 2018), and is therefore often used in research on conspiracy cultures (Benkler et al., 2018). Second, sampling on *Reddit* allowed us to collect videos considered as "conspiracy theories" by the *Reddit* community themselves, instead of imposing our own or other external definitions (Harambam, 2020).

The videos were firstly descriptively coded by topic, resulting in eleven conspiracy theory categories[1]. Then, we sampled the four most prominent conspiracy theory domains found in earlier research (Harambam, 2020; Uscinski et al., 2018): contemporary politics, science, the cultural industry and the mysteries of the universe. We then sampled the most popular video from each of the abovementioned categories, excluding videos with <299 comments because they contained too little discussion, insufficient for our analysis. We carried out a qualitative analysis of the first 50 comments of each video (200 comments in total) resulting in a codebook[2] of 39 codes, categorized along Hall's (1980) three major "readings" that form the backbone of our analysis. Some examples of the codes were: expanding theory (dominant), defending theory (dominant); alternative explanation (negotiated), questioning "truthiness" (negotiated);"trolling" producer (oppositional), counter-"facts" (oppositional). The codebook was used to code the entire sample first qualitatively, to distinguish the

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[1] (1) Media; (2) Alternative Media; (3) Culture Industry; (4) Contemporary Government; (5) Geopolitics; (6) Deep State & New World Order; (7) Secret Societies; (8) UFO's And Supernatural; (9) Corporations; (10) Finance; (11) Science.

[2] The full codebook and a guide to arrive at the data are available in Harvard Dataverse, doi/10.7910/DVN/HSWR2V

type of comments and arguments that surfaced in the discussion, and then quantitatively, where comments were assigned one of the three codes.These codes were then given a value to aid the social network analysis. The "negotiated" code in the codebook was further nuanced into a code for comments that stayed on-topic and those that diverged from the topic/content. The first author carried out the coding of the full sample. Then, second and first author coded a random sample of 50 comments for each video (200 comments, 15% of the total sample) and established inter-coder reliability (Cohen's Kappa = .91[3]).

We then performed a Social Network Analysis (SNA): a quantitatively-driven research method that can reveal relationships and patterns that are not evident *prima facie*. The method has been used to study communication patterns across different contexts (see Leifeld & Haunss, 2012; Meuleman, 2021; Caballero, 2020). *Homophily* and *heterophily* within networks can indicate whether and how echo chambers are present on social media networks (Caballero, 2020). Since this work is interested in understanding not only the content of the comments but also the communicative patterns between users, such as the similarity of their engagement (i.e., homophily), SNA is best positioned to trace these connections and to capture complex relationships between users

In the analysis of the network structure, we employed measures of centralization and density. Freeman's centralization measures the centrality (relative importance) of the most central node in a network in relation to all the other nodes (Freeman, 1979). In order to gauge the connectedness of a whole network, edge density measures the number of connections in a network compared to the number of potential connections between the same nodes (Fortunato, 2010). In relation to YouTube videos, where nodes are users (and the video) and connections are comments, centralization is used to capture the importance of a single node – the video – which is expected to receive, on average, more comments than other single users. A maximally centralized network is one where everyone would only interact with one actor, a minimally centralized network is one where everyone equally interacts with everyone else. If a network is maximally centralized, it means that there is not much exchange among actors.

Density is a measure that better captures how much users interact with each other, defining the fragmentation or/and cohesion of the network. The difference between the two is that while centrality is a measure of nodes, centralization is a measure of a whole network. It defines how important (i.e., central) is the most central node in the network in relation to others.

Further, we have checked whether the same users leave similar or different comments. We will further call users that left one type of comment "homogenous users" and those that have left varying comments "heterogeneous users". Overall, while centralization and edge density refer to patterns of interactions, homo/heterogeneity refers to content of interactions. Considering all these three measures together, we can schematically imagine a high level of echo-chamberness in networks

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[3] Cohen's Kappa: Dominant (.91); Negotiated (.90); Oppositional (.91)

that are highly centralized, with low edge density, and highly homogenous. Instead, we can imagine a low level of echo-chamberness in a network with low centralization, high edge-density, and highly heterogeneous.

The qualitative analysis of the comments is presented alongside the findings of SNA. We choose quotes that best depict the findings of the quantitative analysis, such as highly liked comments, and ideal-typical homogenous/heterogeneous interactions.

Cases

Guided by our theory that assumes both individual agency and (sub) cultural variation, we strategically selected four distinctly different conspiracy videos. In this section, we outline the character of the sampled videos that, in an ideal-typical sense, all represent most popular conspiracy domains (Harambam, 2020).

The first conspiracy domain is contemporary politics. We selected a conspiracy theory that is typical for the current in political conspiracy culture: QAnon (Forberg, 2022; Hannah, 2021). The video is titled "President Saving Our Country" and argues that the former United Stated president Donald Trump is "draining the swamp" of the "deep state" behind closed doors. The theory is critical of the democratic party and offers that there is a secret "cabal" of elites conspiring behind the curtain of social reality. The video is eight minutes and ten seconds of pure Hollywood-like scenes of the earth from great distance, psychedelic-inspired visuals and binaural music followed by the producer's calm voiceover. The video has 27,889 views and received 299 comments. Secondly, the 'mysteries of the universe' case taps into a long-standing current in conspiracy culture (Knight, 2000; Partridge, 2005) – and is exemplified by a video titled "CIA Document Shows Life on Mars Observed in 1984". The video draws on declassified CIA documents from the "Stargate" programme, which tried to harness psychic abilities for military purposes in the 1980s. The video holds a speculative tone, presents a theory of detected alien life forms and questions " how do we know the information in the transcript is accurate? The video has been viewed 150,458 and got 348 comments.

The third case represents the current in conspiracy culture that relates conspiracy theories to popular culture and the entertainment industry (Aupers, 2020). The video is titled "Dave Chappelle's 'Bird' Revelation That Everyone Missed" and draws from clips of comedian Dave Chappelle's Netflix show, where he discloses obstacles brought upon by his career. The producer interprets this as a coded revelation of Illuminati blood sacrifices in Hollywood. The video has 87,218 views and received 429 comments. Lastly, we selected a video that represents the current of alternative science in conspiracy culture and, particularly, the Flat Earth Movement (Paolillo, 2018). It is titled "This 16th Century Map Reveals a Flat Earth Secret". The video presents a map by Cartographer Gerard Mercator, who theorized that the world's center is the meeting the poles in the midst of which stands a giant magnetic rock and uses the theory to build an argument that the earth is flat. The video has 294,832 views and was commented on 1,016 times.

7

Figures 1-4 in the findings section show the resulting networks. The nodes represent individual users: those that commented on the video or each other, as well as the channel owners, some of whom have also written comments or replies. The pie charts in the nodes represent the types of comments they left: red for "oppositional", light orange for "negotiated" on-topic of the video, dark orange for "negotiated", diverging from the topic of the video, and white for "dominant" (to the content of the video). One node in the network represents the video. The size of the slices is directly proportional to the number of each type of comment (i.e., if a user engages mostly with oppositional comments and partly with dominant, the pie will be mostly red with a tiny slice of white).

Even though, as per AoIR ethics for Internet research, informed consent was not required (IRE, 2019), we chose to anonymize the users, as well as the YouTube channels to ensure commenter's anonymity. Some words in video titles and comments were also switched to their synonyms to reduce searchability and ensure anonymity.

Results

In the following, we present the results of our analyses. We ordered the results by the level of echo-chamberness, starting with the most closed community: Q-Anon.

8

Case 1. Contemporary Politics: QAnon
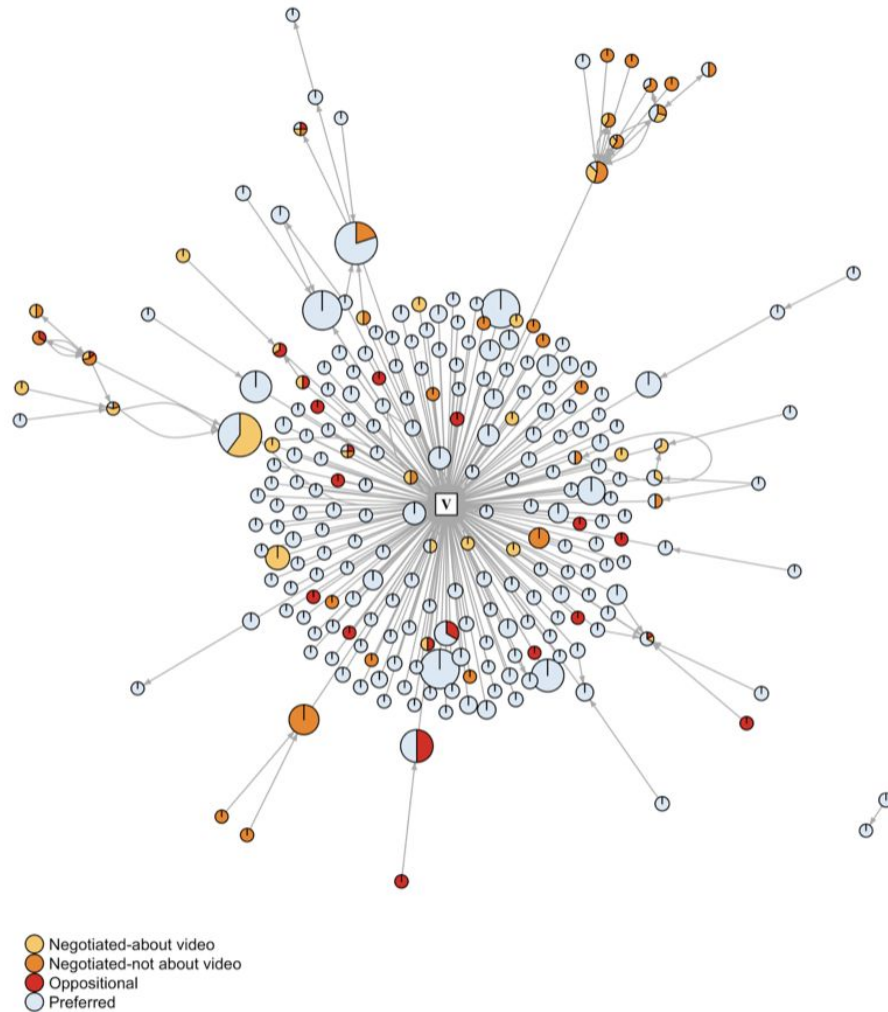
Figure 1. QAnon Network

In our sample, QAnon's network (*figure 1*) was highly centralized and homogeneous. Users rarely interacted with one another. A whooping 74,5% of users commented directly on the video without interacting with other commenters (Centralization= .44). Compared to others, users in this network have a low level of engagement, as indicated by the density score of is .004.

A majority (72%) of responses were "dominant" messages about video. In other words, people agreed, praised or supported the content/producer of the video. This was the largest number in our sample. Further, the network is highly homogenous: 219 users have posted only one type of

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[4] The pie chart represents each type of comments that the node (i.e., a user) has given.

comment, 182 of which were users with "dominant" messages (10 with "negotiated" and 15 with oppositional comments). Only 26 users were heterogeneous and posting more diverse responses.

To illustrate, the second most popular comment of the network, receiving 100 likes and much engagement read "we love Trump and we are behind him in this wwg1wga" (KE). To which other commenters replied in support: "WWG1WGA 🖤" (AS); "We should be protesting in front of all these social media offices" (KK), and "we are tired of the darkness enveloping our world and poisoning our minds. We stand with PQTUS. We will not be silenced" (SB). These comments demonstrate that commenters seldom develop their arguments or views beyond expression of support. Instead, they rely on symbolic expressions of support like achronyms "wwg1wga" and "PQTUS," or emojis of hearts and prayer hands.

Commenters on the video overwhelmingly expressed support for it: "I love President Trump for the man he is. He has done so much and all the fallen angels have tried to do is tear this wonderful man apart." (SS); "Also TRUMP IS WORKING FOR FREE, NOT BEING PAID TO BE PRESIDENT" (WTH). The producer has also gained praise for the video: "Thank You for the beautiful message, that warmed my heart" (DS).

22% of responses were "negotiated": offering other (conspirational) explanations and sharing personal stories. The most "liked" comment addresses other viewers directly: "message for people who dislike this video…go do research not by the news media. Once you knew the truth… u can't unknow it" (IT). The comment received "dominant", "negotiated" and "oppositional" responses. For instance, replying IT, JM writes: "There is evidence through photos that his father was a member of the KKK in earliest times", and "there is evidence that Trump Foundation has never paid taxes". These comments did not go unnoticed: "@JM Maybe it's because most taxes are illegal and there are loopholes for everyone?" (BB) and "@JM Sounding like a supporter of those who throw stones inside their glass houses!" (FVW). The discussion has gone from the content of the video and its producer to issues such as tax evasion and political preferences (this conversation is visually represented in the center top of the graphic).

Only 5% of all comments were "oppositional": they were occasional and compared to the other types were not "liked" as much or interacted with: "Talk is cheap! My eyes are wide open, let's see! I've heard absolutely the same videos about Obama..." (GA). Referring to a message induced with conspirituality, PA commented "No legitimate spiritual message will relay a political affiliation".

In sum, QAnon is the most homogenous of the four network, it fosters fewer interpersonal interactions, and rarely engages oppositional viewpoints. the QAnon network is *highest* on the "echo-chamberness" scale. This aligns with previous research identifying Q-Anon groups as highly insular, while showing a strong (politically-incentivized) group affiliation and homogenous communications (Forberg, 2022). Drawing from its political views, that paints the world in Manichean colors of good

10

and evil, QAnon's (sub)culture imposes a high degree of closure in its communication, and splits the world into its followers, and the evil rest (Hannah, 2021).

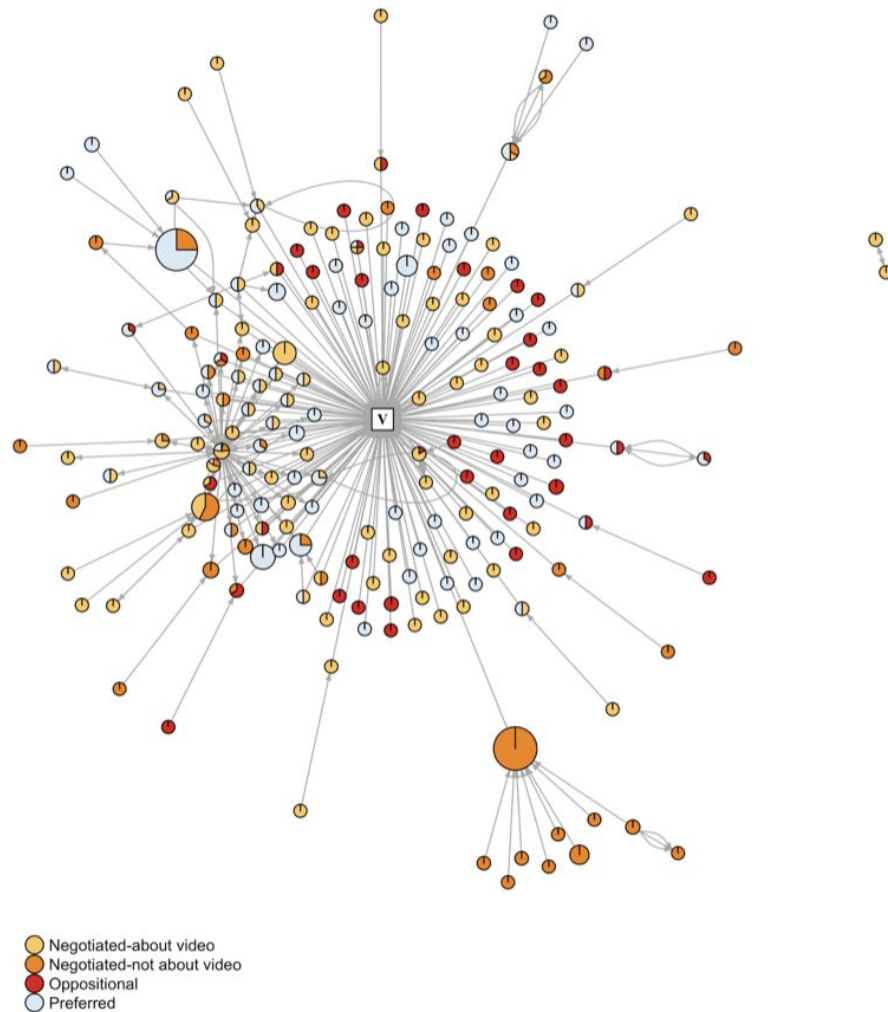**Case 2. Mysteries of the Universe: UFO's**

Figure 2. UFOs Network

The UFO network (*figure 2*) was the second most centralized in our sample. There is little interaction among users, 54.2% percent of all responses are comments on the video itself. With a centralization score of .40, UFOs is the second network with least interaction among users after QAnon. Network density of .007 shows marginally more connections than QAnon and Culture Industry.

53.7% of all comments were "negotiated", followed by "dominant" (33.2%) and "oppositional" (13%). Of the 199 commenters, 46 (23.11%) were heterogeneous, *id est* posted

11

multiple types of comments. This is the second most homogenous network in our sample only after QAnon. Commenters who left homogenous messages (80 out of 153) usually did so in a "negotiated" manner.

The most popular "negotiated" comment on the network sparked a debate when user JP asked "Anybody else see this on worldstar??". In response to it , other users commented: "Here from worldstar 😂. Comments there and here are entertaining." (B); "Yeah I did but I came to YouTube for the comments because Worldstar is unintelligent when it comes to the comments." (A4OG); Though it was common for people in the network to have these types of discussions, they rarely developed into lenghty conversations about the video or topic at hand, staying on an identification level.

The second largest homogenous group of users had "dominant" readings (47 users). An interesting aspect of this network was the participation of the video producer who actively responded to comments (particularly to "dominant" and "negotiated" comments, and rarely to "oppositional" ones). For example, viewer VP responded to the video by sharing their experience with "remote viewing" which is similar to that shown in the video:

> "I woke up in the middle of the night, I could see my girlfriend, bricks behind her (a wall) and her kissing another guy... I called her over the phone. She did not answer. Later a guy told me that my ex was cheating on me with that guy, he was describing the same place where they were, a wall with bricks and he was shocked how it is possible that "I knew"

To which the producer of the channel replies:

> "I believe you — the head of Stargate suggested everyone had this potential skill and a small subset, 1%, were exceptionally skilled in it. have you ever considered honing it?" (IR)

The conversation continued for a few more comments, with VP recounting even more of their experiences. In this way, the channel has a hand in facilitating and enabling "dominant" interactions in the network.

The fewest number of comments fell into the category of "oppositional" readings. Commenting on the video, they proposed that "from the time you say Psychics.. Everything becomes absolute bullshit" (uSF); "lmao so the dude 'psychically' went to mars and walked around...what a joke. you people are beyond stupid" (RT); "The earth is flat and space is fake. This is disinformation news" (A). Yet others criticised the video for being a distraction from the issues of the "real" world:

> "people can't afford their medicine. Hospital stays can bankrupt you and ruin your life. Wealth inequality is criminal. […] That's why this country is fucked and it's gonna stay fucked. Because there's too many idiots worrying about this stupid shit and not caring about the real issues!" (BR)

Overall, the network resembles a *neither a closed nor an open* discussion. It is evident from the network's centralized nature that only few significant interactions between commenters take place. Even though the network lacks an open debate, it displays more openness than the previous, QAnon, network. Moreover, the qualitative data indicates that the interactions were based on detailed accounts of personal experiences and information-sharing. Members of UFO communities use elaborate, scientific-sounding explanations (Cross, 2004), based on intuitive questioning and "research", more than fixed ideas. This may account for the homogeneity of the "negotiated" code in this network.

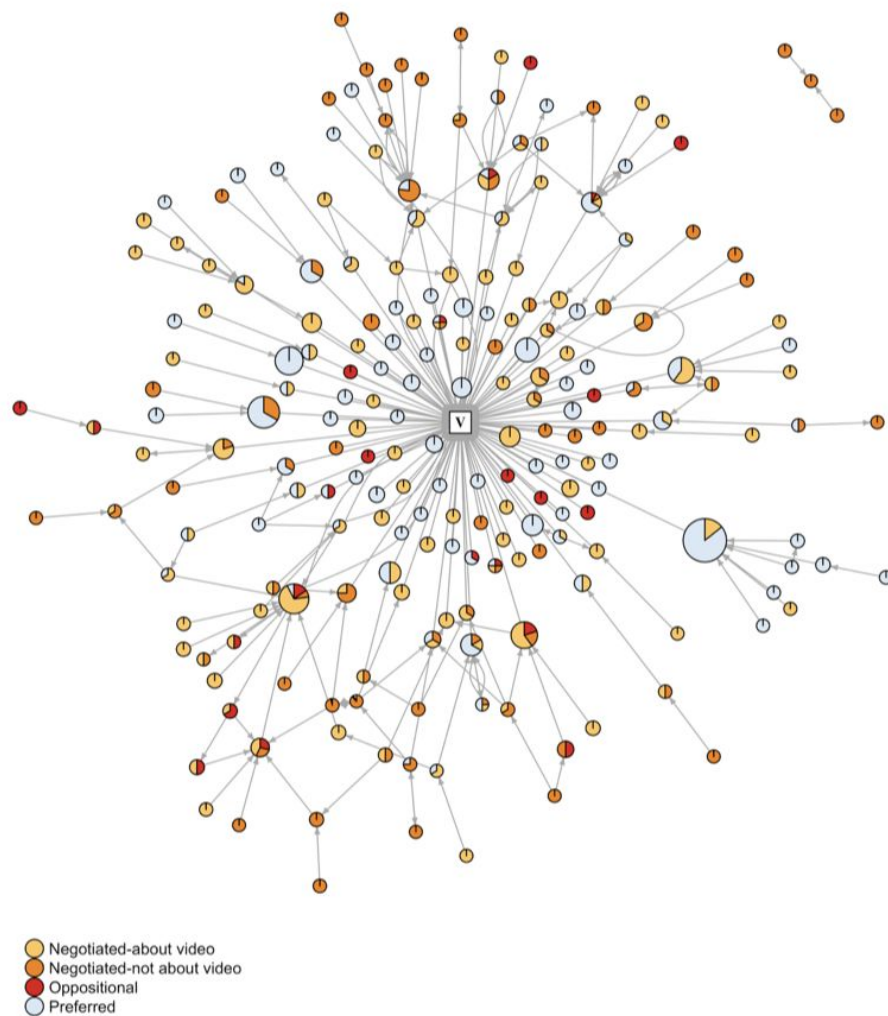**Case 3. The Culture Industry: Hollywood and the Illuminati**

Figure 3. Culture Industry Network

The culture industry network (*figure 3*) shows an interpolated picture, with a core with little interaction, and branching clusters on the periphery. With a centralization score of .272, users tend to comment on each other as well as the video. Compared to Flat Earth and UFOs, the network density of .006 indicates that users engage less on this network.

The video was received in a variety of ways, but the most dominant code was "negotiated" (64.3%, or 189 comments). A popular "negotiated" response offered a different explanation of the events surrounding Dave Chapelle: "He never went to Africa. They killed him an replaced him. […] David Chappell was getting paid the most in comedy, but they was never going to let him leave Hollywood with all that money. He would have became too powerful" (BM).

Dominant comments made up the second most prominent group (30.6% or 90). Commenters praised Chappelle's willingness to "disclose" Hollywood:

"I'm so glad Dave had the courage to bring these things to the light. […] They have constructed such plausible deniability, that people are able to dismiss you offhand when you try to tell others just how they initiate candidates." (DW)

"Oppositional" accounted for the smallest group of comments (5.1%). Some direct comments expressed discontent or laughed off both the video and other commenters by saying: "Y'all be killing me with these conspiracy theories.....shit is hilarious. […] I'll thank you and the illuminati boogie man for that" (MT) or "Ya'll have too much useless time on your hands" (TWF).

The network is the most *heterogeneous* in our sample: 64 out of 213 commenters (30.04%) posted a variety of (kinds of) comments. It is diverse in users posting multiple types of comments instead of sticking to one type of argumentation. Further, most homogenous commenters were those with "negotiated" comments (55 out of 149), which, as was the case with Flat Earth, include varied discussions (including those diverging from the video). The second most homogenous group were commenters with "dominant" readings (49 out of 149), and least- those with "oppositional" readings (36 out of 149; proportionate with the overall presence of "oppositional" comments).

An example of engagement between people with different positions centered on the comment of user K01: "Only hardcore fans notice that something is off", which prompted (T) to say:

"You're a fan so something is off with you anyway, it's called idol worship and is forbidden. […] Only thing different is he put on some muscle so if one of you weirdos try something he can knock your nose off.".

Another replied, questioning: "fan means 'fanatic'. Are you one?"(OLM), while others just guessed that "he's just older now" (roscoe collier). Others confirmed: "facts bro" (IDD)- showing a diversity of responses to the original commenter.

Interestingly, the discussions in this network often turned to a different, new conspiracy: namely, that Dave Chappelle has been replaced by a clone. For instance, a user called ETR wrote:

14

"This person has a TOTALLY different voice. And he has disdain for himself. He is jealous of
himself. He says, I don't enjoy this, I'm too good, no matter what I say its gonna be funny. […]
This new Dave isn't funny and he's envious of the old Dave."

Other users in the comments section tried to debunk this new theory by explaining that "your voice
does go deeper if you smoke 2 packs of cigarettes a day […] He only recently switched to vaping, that
shit kills your voice man" (SG) and "I don't know if I can agree with ppl when they say he is a clone
just because he looks and sounds different. Most men I know became more bulky as they got older."
(KU). Others supported the original commenter saying "I vape hasn't killed my voice. In w other
guy." (SG).

By and large, the comments section is largely a semi-centralized, low-density network. When
discussions arise, people with different views engage with one another to a greater extent than in other
networks, fostering an open dialogue. Many commenters shift the conversation to new details and
questions in the story, alluding to the community's in-flux character. New twists and turns surface
fluctuating between the Frankfurt school's suspicion of the culture industry and the distrust of the
'power elites' (Mills, 1956) that run the Illuminati and have abducted their admired popular figures.
This "negotiation" of new meanings and "connecting the dots" positions the culture industry network
in the middle of the echo chamberness spectrum.
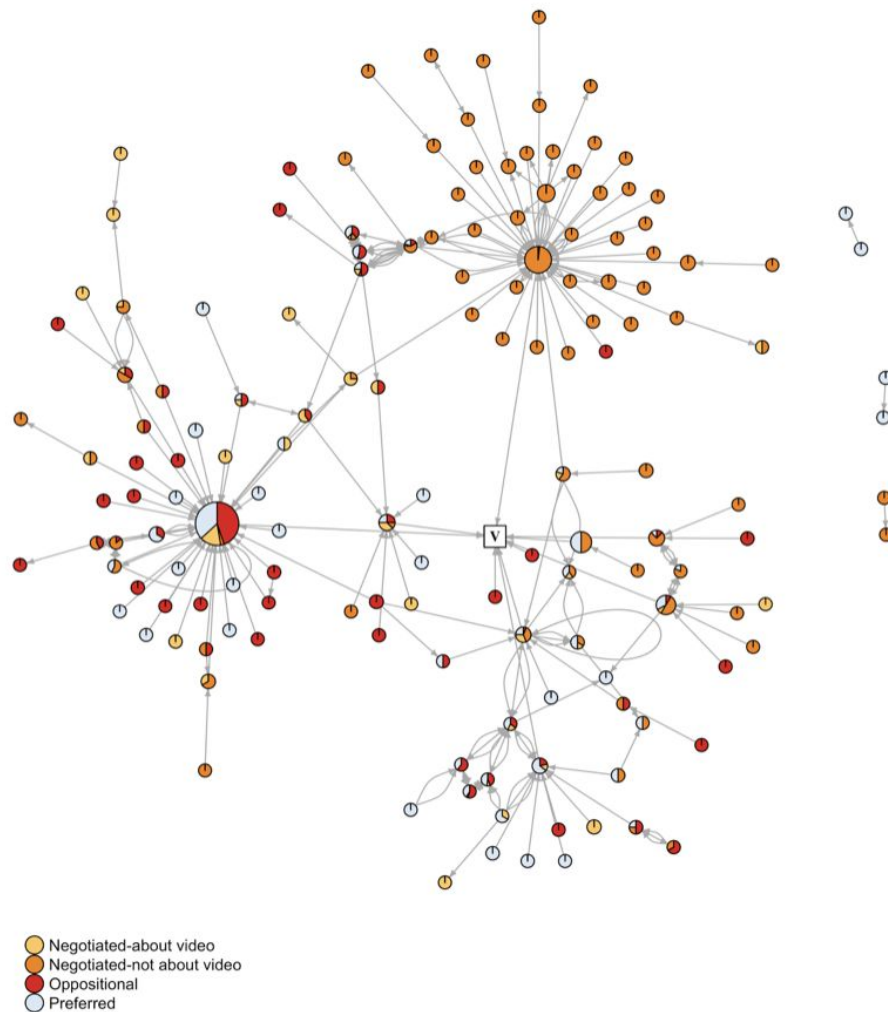
Case 4. Science: Flat Earth

15

Figure 4. Flat Earth Network

The Flat Earth network (*Figure 4*) is a clustered, decentralized network with a high level of interaction and a variety of "readings". The comments section is heavily clustered, and most clusters demonstrate interactions between various points of view, with the exception of a sizeable cluster with "negotiated" remarks. The centralization of the comments section .163 indicates a high engagement between commenters. High interaction is emphasized by the density score of .013, which indicates a higher level of between-user engagement compared to other networks. The Flat Earth, consequently, is the densest network in our study.

23.7% (70) of all comments were "dominant" readings of the video; 53.3% (160) had a "negotiated" and 23.7% (70) an oppositional reading. The network is the most *heterogeneous* in our sample, with 45 out of 152 (29.60%) posting comments with a variety of "readings".

The most popular comment by a user EVC, who reacted to the video, wrote: "Don't ya'll find it quite ironic that only ignorant people believe the world is round and people who are genuinely

intelligent and study and look into everything with an open know the world if flat?". This statement elicited a wide range of replies, starting with a popular backlash comment:

> "@EVC are you not being a bit ignorant yourself right now? So many years ago they did not have the Technology or equipment to get a Real understanding of the World.. Though they did a pretty good job though with what they had. We know a lot today thx to Explorers and science...You might say, but all science is fake? [..]" (K83)

Other users have turned the original argument around: "ironic is claiming other people are closed minded while believing the earth is flat" (MV); others agreed with EVC and said they "noticed the same thing!" (SLE) or posited that it could be so because of the "power of self-delusion and really poor education" (A). As seen by this example, individuals with "dominant" and "opposing" viewpoints openly engage with each other and elaborate on their arguments, which is not present in the QAnon video's echo-chamber-like networks.

Furthermore, "negotiated" readings were the most homogenous in the content (52 users out of 152). Conversations in this network veered substantially from the video, and many individuals spoke about their experiences or even sought personal counsel from others. An illustration of these discussions between two users Fruit Salad and Tony Arena, in which the users go from the video to:

> "Shills gonna shill […] (FS)
> Vaporize all Shills (TA)
> Fruit Salad are you vegan like me? (TA)
> Tony Arena, nope I'm not vegan, why? (FS)
> Fruit Salad cuz I'd like to plot with a vegan woman engineer I feel like we'd get a lot done any tips on where to look? (TA)"

The flat earth network is a forum for community and conversation, it sparks debates about religion and spirituality, personal worldviews, dating, and other issues. Flat earth is one of the more 'social' conspiracy theories known for their community-building (Paolillo, 2018). As illustrated by the international activity of organizations like 'Flat Earth Society' and new digital tools like the app 'Flat Earth Finder', the collective actively engages their members. The diverging 'social' discussions contributes to the "negotiated" space within it. Furthermore, the theory sparks curiosity and opposition in many people, and the theory is seen as "far-fetched" and "outlandish", as evidenced by the oppositional comments to the video. In sum, the Flat Earth network is the lowest in echo chamberness and closest to what could be considered an open debate.
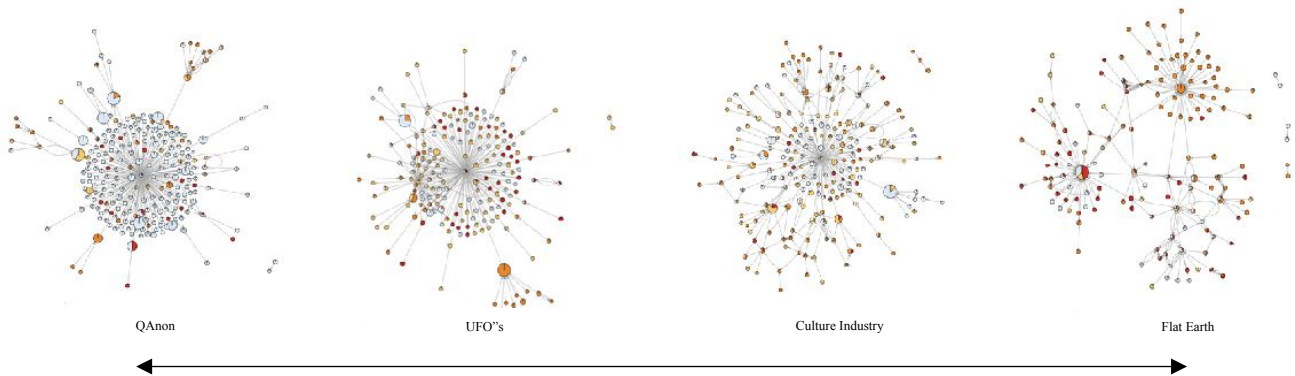
17

Conclusion and discussion

Figure 5. Echo Chamberness across conspiracy (sub)cultures

This article addressed the question whether conspiracy theory groups online are correctly understood as self-enclosed "echo chambers". We chose discussions about conspiracy theories on *YouTube* as a theoretical case study since this platform has been called the "great radicalizer" – leading people into "rabbit holes" of increasingly extreme (mis/dis)information and conspiracy theories (Tufecki, 2018; Lewis, 2020). Guided by audience studies, highlighting agency over determinacy, we empirically studied how people read particular conspiracy video's online (to asses the variation *within a group*) and compared different domains in this respect (to asses the variation *between groups*).

In light of current echo chamber debates, we conclude that participants within a group are not passively 'following' the dominant message and consolidating their collective worldview – a situation of *homophily*. People are actively negotiating, critiquing and opposing the ideological message of the video. Consequently, a debate exists, albeit in various degrees. If we look at the variation *between* our four case studies, we find a spectrum from homogeneous closed debates (QAnon) to more open debates (Flat Earth). In other words, the social networks in our sample show various degrees of echo-chamberness. These findings raise critical questions about the echo chamber thesis as discussed in our theoretical section (Bruns, 2019; Del Vicario, Vivaldo, Bessi et al., 2016; Nguyen, 2019). Our analysis suggests that we should be careful with all-too-bold generalizations about the insularity of conspiracy cultures and, particularly, the self-enclosed and homogeneous echo chambers that they form online.

A central theoretical point of attention is the role of (sub)culture that explains the different degrees of echo-chamberness. Notwithstanding academic theories emphasizing technological infrastructures and platform affordances (Theocharis et al., 2021), cultural values, norms and modes of communication in online environments should be taken more serious. To stick to the extreme cases on our spectrum the question is: why is QAnon online a self-enclosed "echo chamber" displaying homogeneity? And why are people watching the Flat Earth videos engaged in a more open public

18

debate? The answer lies in the distinct subcultural differences: on- and offline. QAnon is more of a "self-referential universe" (Lighthouse Reports, 2022) with strong, or even cult-like social cohesion, while the Flat Earth Society that simulates scientific, open debate based on argumentation (Paolillo, 2018). Indeed, the collective body of cultural knowledge referred to as "subcultural capital" (Thornton, 1995) – the codes, manners, morals and distinct symbolic resources (Murdock, 1974) on which these groups draw – explains the different readings and communication. Conspiracy culture itself consists of different groups, subcultures and codes – even leading to tension and symbolic boundary drawing between these communities (Harambam & Aupers, 2017). From this perspective a "differentiated" approach and "segmented" study of conspiracy culture in online environments is called for. This contextual role of social backgrounds (Hall, 1980) and "subcultural capital" (Thornton, 1995) in the formation of the echo chambers online should further be studied to account for the different variations in insularity of communication.

This paper sheds new light on what are too easily called echo chambers. The findings nuance and contextualize our understanding of communication in supposedly closed spaces that shape and reinforce people's peculiar beliefs. This paper thus contributes to re-conceptualizing echo chambers as sites of negotiation with varying degrees of openness across and within subcultures, rather than their typical sketch as solidified ideas bouncing off insular walls. Further, we think that our mixed-method analysis based on an adaptation and empirical application of Stuart Hall's (1980) model has merit in measuring differences in communication online. Future research could investigate how people's political, religious and (sub)cultural affiliations, as well as their age, sex and gender may be related to varying degrees in "echo chamberness" in different conspiracy subcultures.

Our research is not without its limitations. First of all, our study is not representative of the multi-faced conspiracy community at large nor their online manifestations. By focusing on four strategically selected cases, however, we hope it provides a fruitful theoretical starting point to empirically study the way individuals 'decode' audio-visual media texts and the social and (sub)cultural formation of 'echo chambers' on YouTube. Secondly, the focus on YouTube considers only one of the many platforms that have been previously studied in relation to echo chambers and conspiracy theories, such as Facebook, Twitter or TikTok. To better understand if and how platform-specific affordances (e.g. Theocharis et al., 2021) interact with users' social and cultural positions in enabling or hindering decoding across different users, it is important to study other social media environments. More than that: a systematic cross-platform analysis is called for in this respect. In this way, a qualitatively rich, comparative analysis across platforms can shed light on the way different conspiracy cultures boast various forms of "echo chamberness". These analyses will be pivotal in mapping quick-paced processes of online communication and their real-world impact.

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