COVID-19 PANDEMIC RELATED DENIALISM AND SPREAD OF FALSE INFORMATION

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Master's Thesis

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Abstract

The Covid-19 pandemic that begun in 2020 had a major impact on lives around the world. Vaccines, masks and safe distancing were measures that were required from the vast majority of people. What became apparent during the pandemic was that there was also visible resistance towards the safety measures in some parts of the population, and this phenomenon was recognised by the health officials as a threat on global scale. This resistance included believing in alternative stories that e.g., questioned or even denied the severity – or even the very existence – of coronavirus. This phenomenon manifested itself in the form of denialism and spreading of mis- and disinformation about the Covid-19 pandemic. Researchers in different fields have aimed to understand the ways this false information spreads, and moreover, why people willingly want to believe in - and furthermore, spread – inaccurate information regarding the pandemic.

This master's thesis is an integrative literature review that examines research papers and other scholarly papers around the phenomenon of Covid-19 pandemic related denialism and the spread of false information. The time frame for the papers is set between January 2021 and March 2022. Analysis consists of research papers and other kinds of scholarly papers, that are examined separately. Since the studies have been conducted in different parts of the world and with differing methodologies, the focus of this thesis is on the concepts through which the phenomenon is explained. The studies were predominantly examining macro-level phenomena, and most of the studies were based in US-American and Brazilian societies.

The studies were scattered, and the main findings was that the studies and their results around the phenomenon are always highly context-dependant, even if the phenomenon as highly globalised and unifying features. For future research, scholars need to acknowledge societal discussions on different forums and have tools prepared for moments when societally impactful events take place – especially, when they require large scale adaptation and/or acquiring and internalising information that is distributed by officials. Moreover, transparency and openness from the side of academia is brought up as a major need.

Keywords: Covid-19, denialism, false information, conspiracy beliefs, populism

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Tiivistelmä

Vuonna 2020 alkanut Covid-19-pandemia vaikutti merkittävästi ihmisten elämään ympäri maailmaa. Koronarokotteet, maskit ja turvavälit olivat toimenpiteitä, joita vaadittiin suurimmalta osalta ihmisistä maapallolla. Covid-19-pandemian myötä oli ilmeistä, että osassa väestöä näitä turvatoimia myös vastustettiin, minkä vuoksi terveysviranomaiset tunnustivatkin tämän ilmiön maailmanlaajuiseksi uhaksi. Tämä vastustus tuli näkyväksi eri muodoissa, mukaan lukien vaihtoehtoisiin tarinoihin uskomisena, ja esimerkiksi niin, että koronaviruksen vaarallisuus – tai viruksen koko olemassaolo – kiellettiin. Tämä ilmeni denialistisena suhtautumisena ja käytöksenä sekä Covid-19-pandemiaa koskevan mis- ja disinformaation levittämisenä. Eri alojen tutkijat ovat pyrkineet ymmärtämään kuinka tämä valheellinen tieto leviää, sekä ymmärtämään, miksi ihmiset haluavat uskoa ja lisäksi levittää virheellistä tietoa pandemiasta.

Tämä Pro Gradu -tutkielma on integroiva kirjallisuuskatsaus, joka sisältää tutkimuksia ja muita tieteellisiä artikkeleita. Nämä artikkelit tarkastelevat Covid-19-pandemiaan liittyvää denialismia ja valheellisen tiedon leviämistä ilmiönä. Kirjallisuuden aikaikkuna asettuu tammikuun 2021 ja maaliskuun 2022 välille. Analyysi koostuu tutkimuksista ja muunlaisista tieteellisistä kirjoituksista, joita tarkastellaan erikseen. Koska tutkimuksia on tehty eri puolilla maailmaa ja erilaisilla metodeilla, tässä opinnäytetyössä keskitytään käsitteisiin, joiden kautta ilmiötä selitetään auki. Tutkimuksissa tarkasteltiin pääasiassa makrotason ilmiöitä, ja suurin osa tutkimuksista sijoittui yhdysvaltalais-amerikkalaisiin ja brasilialaisiin yhteiskunnallisiin konteksteihin.

Tutkimukset olivat hajanaisia ja pääasiallisena havaintona olikin, että ilmiöön liittyvät tutkimukset ja niiden tulokset ovat aina erittäin kontekstiriippuvaisia, vaikka ilmiötä värittäisikin globalisoituneisuuteen liittyvät piirteet. Tiedostetut tulevaisuuden tutkimustarpeet osoittavatkin, että tutkijoiden tulee huomioida eri foorumeilla käytävä yhteiskunnallinen keskustelu, ja että esimerkiksi viranomaisilla tulee olla valmiita työkaluja niitä hetkiä varten, jolloin yhteiskunnallisesti merkittäviä ilmiöitä tapahtuu – varsinkin, kun ne vaativat laajamittaista mukautumista ja/tai viranomaisten jakaman tiedon hankkimista ja sisäistämistä. Myös tiedeyhteisön avoimuus nostetaan esiin merkittävänä tulevaisuuden tarpeena.

Asiasanat: Covid-19, denialismi, väärä tieto, salaliittoteoriat, populismi

Säilytyspaikka
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Lisätietoja

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1 INTRODUCTION

This master's thesis aims to shed light on communicational aspects that take place as part of Covid-19 related denialism and the spread of false information about Covid-19. This is done by conducting an integrative literature review. Covid-19 pandemic has affected the whole word in the early 2020's, and it has also forced us globally to adapt to unitary set of practices in terms of safety measures. Viral diseases do not attend to cultural group membership like we humans often do, and the virus and its variants spread between individuals, cities, nations, continents – moreover, between people who represent various lifestyles. Social distancing, staying at home, and using masks in public spaces have been proposed as universally working measures to tackle the spread of Covid-19.

During the pandemic – as well as before it – the spread of mis- and disinformation, including e.g., rumours and denigrating stories, have been acknowledged as harmful (e.g., Rosenberg et al., 2020). As more and more people aim to access relevant and beneficial health information online due to its affordability, professionals need to find strategic ways to tackle false information that might be prevalent within the health-related information online (e.g., Neely et al., 2021). In this thesis, the term "false information" is utilised as an umbrella term to include both 'misinformation' and 'disinformation'. These two terms are often used interchangeably, even if they differ in terms of meaning. According to the Merriam-Webster dictionary (n.d.), misinformation refers to "incorrect or misleading information", while disinformation is defined as "false information deliberately and often covertly spread (as by the planting of rumours) to influence public opinion or obscure the truth" (Merriam-Webster dictionary, n.d.).

As an example of this, Krishna and Thompson (2021) emphasize how various events and subjects throughout the history – including the Ebola epidemic, safety questions related to tobaccos, as well as stigmatisation of HIV-positive individuals – have all become sites where misinformation and denialist beliefs take place. Krishna and Thompson (2021) also point out in their review how significant amount of health-related misinformation stems around food and nutrition information on global scale.

Therefore, one could argue that even if the impact of Covid-19 pandemic has been larger than during previous epidemics/pandemics, Covid-19 can also be seen as singular phase around which false information is being generated. This entails that societies will face the spread of false information during future pandemics and global crises, as well.

Encountering Covid-19 pandemic -related false information is a nearly universal phenomenon, and people encounter such information on the Internet, as well as in person. This thesis offers an analysis of academic approaches and themes surrounding these events. The value of this thesis lies in the analytical approach towards the concepts through which the topic is being addressed. The use of concepts is essential in breaking down academically relevant topics into digestible bits. Simultaneously, utilised concepts entail certain values and ideologies, and scholars need to be aware of them. The value of these concepts can also be seen when they are applicable for other contexts where understanding the spread of false information becomes relevant. Moreover, the salience of this thesis lays in the tools to deal with false disinformation.

Health-information related denialism is not a new phenomenon, even on global scale (e.g., The New York Academy of Sciences, 2018). While it might be fruitful to look directly at data provided by those who are denying the Covid-19 pandemic and/or the severity of the viral infection, accessing this kind of data is complex due to various reasons: not only because entering pandemic denialism -fuelled groups on social media platforms is difficult, but also because majority of the content that is labelled as disinformation is either removed or made non-spreadable online. Moreover, great deal of denialism does not even take place online.

While a review, as such, is mostly a recapitulation of conducted research and academic discussion around a relevant theme, integrative literature review as a method aims to produce new, beneficial information, as well. Integrative literature review is often utilised as a method for new, emerging research topics and themes (Torraco, 2016). Furthermore, integrative literature aims to improve understanding on the examined topic(s), and the deepening of this understanding can be done by including experimental, non-experimental studies, theoretical papers, as well as all possible academic reports that are relevant to the research topic (Russell, 2005).

In the next chapter, I will go through the methodology of this thesis and describe the conducted analysis process. After this I will write open the findings of my analysis, where I am giving special attention to the concepts utilized in the selected articles.

2 METHODOLOGY

2.1 Integrative literature review as a method

There are various forms of literature review techniques. Many of them have similar features – including systematic literature collecting – but also differences, since different methods are being used for different fields and disciplines. Systematic approach towards to the analysis material reduces the likelihood and the risk of bias (Booth et al., 2016). As integrative literature reviews are often examining the most recent literature on an academically relevant research topic, utilising it is especially useful due the nature of the research questions of this thesis: timewise Covid-19 pandemic is recent, although health-information related denialism is not a new phenomenon.

According to Torraco (2005), integrative literature review (ILR) has at least three distinct features. Firstly, ILR "is a form of research that reviews, critiques, and synthesizes representative literature on a topic in an integrated way such that new frameworks and perspectives on the topic are generated" (Torraco, 2005, p. 356). Secondly, it is commonly used for mature research topics, or on the contrary, novel, and recent topic. Thirdly, ILR does not have a distinct, clearly defined form, unlike in many other forms of literature review (Torraco, 2005). Moreover, "[w]hether the literature review addresses a mature or emerging topic, readers expect to see the knowledge from the literature synthesized into a model or conceptual framework that offers a new perspective on the topic" (Torraco, 2005, p. 358).

Leaning on another article by Torraco (2016), it is beneficial to go through some key features and components of the method: ILR is "used to review new emerging topics that generate a growing body of literature that may include contradictions or a

discrepancy between the literature and observations about the issue, which are not addressed in the literature"(Torraco, 2016, p. 404). The ILR of this thesis is constructed conceptually, which means that "literature addressing the same ideas" are reviewed together (Torraco, 2016, p. 405). This also includes *reconceptualization*, which is "a new way of thinking about the topic reviewed in the literature" (Torraco, 2016, p. 412).

In this thesis, the "reconceptualization" is produced by leaning on literature outside of the two literature searches, as well. This allows one to be more critical towards the concepts and findings of the literature, and it might also offer new approaches for the offered findings and insights. By leaning on the article of Torraco (2016), this thesis is structured conceptually, and these concepts are utilised as 'nodes' throughout the thesis text.

The book Systematic Approaches to a Successful Literature Review by Booth et al. (2016) was utilised as a hands-on guidebook for a systematic approach for the literature search. By leaning on their list of purposes to conduct a literature review, most relevant points to bring forth are bringing pieces texts from their contexts and assess how they help understanding a subject or a phenomenon to "identify new ways to interpret" (Booth et al., 2016, p. 14), and identify possible gaps in the research, as well as "to signpost the way forward for further research" (Booth et al., 2016, p. 14). Booth et al. (2016) emphasise how "[s]ome research syntheses shed light on the pros and cons of different ways of organising or delivering services or policies" (Booth et al., 2016, p. 11), and how literature review as a method allows as "to learn whether findings are consistent across multiple studies" (Booth et al., 2016, p. 11).

2.2 Formulating the research questions

There is an increasing number of academic literature discussing Covid-19 related pandemic denialism and the spread of false information around Covid-19 pandemic. The purpose of this study is to create a meaningful synthesis of available literature, and through this, new insights regarding the phenomenon.

The three research questions listed below are open-ended and data-driven. These research questions are interested in understanding what kind of a picture scholars are drawing regarding false information and denialism around Covid-19 pandemic.

The research questions (RQs) are:

RQ1) What kinds of methods have been applied the topic of false information in the context of the Covid-19 pandemic?

RQ2) What kind of needs for future research are brought up?

RQ3) What kinds of theoretical tools and concepts have the scholars utilised in handling the research topic?

When asking these three research questions, the initial presumption is that denialism is a set of communicational actions. This thesis is configuring, which means that the research questions are fixed – this allows the process of excluding and including articles to be as clear-cut as possible. Inclusion-exclusion phase is mostly conducted by going through article titles, abstracts, and conclusions. Some of the articles required to be read thoroughly before they could be included or excluded.

2.3 Planning and conducting the literature search

The guidelines behind the data collection of this thesis rely on the book Systematic Approaches to a Successful Literature Review by Andrew Booth, Anthea Sutton, and Diana Papaioannou (2016). What makes literature collecting procedure systematic is related to how reproducible and, most of all, transparent, the conducted search is (Booth et al., 2016).

What is being searched from the data is based on the three research questions (RQs). Formulating explicit and moreover, transparent, inclusion and exclusion criteria for the literature is crucial. Literature search had to be well-narrowed down with limit functions and search filters, while still fulfilling the elements of transparency and unbiasedness.

Search was narrowed down by e.g., publication years, language, peer-reviewed status, as well as what types of texts are being searched. Resources for translation services were limited, and therefore searched articles were only in English. Relevant limit functions are commonly publications year, languages, and research fields (Booth et al., 2016). The utilized search words were *pandemic denialism*. This literature search

utilized the search interface of JYKDOK international e-materials search (n.d.), provided by the University of Jyväskylä.

I ended up conducting the literature search in two stages. The first literature search brought up a limited number of articles, which was entailing the novelty of the research topic. The first search literature search also had a small number of research papers. Therefore, there was a need to reconduct the literature search. Because there is a gap between the two searches, they are written open separately. This was also beneficial because it allows one to examine possibly new, emerging approaches regarding the same topic.

The first literature search included solely full-text, peer-reviewed articles between the years 2020 and 2021. All the articles examined Covid-19 pandemic due to the selected search attribute offered by the interface. Booth et al. (2016) also point out the meaningfulness of appropriate filters: in the case of this thesis, it benefits the field of communication studies and research, even if literature emerging from search would offer results from multiple different fields. Therefore, *communications* was chosen as one of the limiting search tools. Nevertheless, it is debatable if all the findings are strictly coming from the field of communications – this might also entail the interdisciplinary nature of communication studies and research. The search is set to include only articles written in English. The language limitation was set to English due to resource and language-skill limitations.

After conducting the literature search, the databases were the following. These and journals below are listed according to the displayed search tool results in the Jykdok interface.

Ingentaconnect Journals;

Proquest Central;

Eletronische Zeitschriftenbibliothek - Frei Zugängliche E-Journals;

Doaj Directory Of Open Access Journals;

Coronavirus Research Database;

Pubmed Central;

Taylor & Francis:master (3349 titles);

Taylor & Francis Combined Library (Ssh & St);

Single Journals; Free Full-Text Journals In Chemistry;

Wiley Online Library All Journals;

Jstor Archive Collection A-Z listing;

Springerlink Contemporary (1997-Present);

Springer Online Journals Complete;

Abi/Inform Collection;

Wiley Online Library Database Model 2020;

Sage Journals Premier 2021 (Prem2021);

Springer Nature Oa/Free Journals;

Biomedcentral Open Access;

Communication & Mass Media Complete

The search was conducted on July 5th, 2021. It resulted in 52 articles. These articles went through inclusion-exclusion process, which is opened up in detail in the next section. The second literature search is opened up under its own section.

2.4 Description of the process of analysis

After the search results, the process moved on to exclusion-inclusion process. From the 52 initial articles, four (4) articles were directly excluded because they were not in English, despite the setting of the language tool. The remaining 48 articles underwent an inclusion-exclusion process based on their relevance when reflected with the three research questions (RQs). From these articles, 28 articles were excluded from the review. This was done by excluding and including an article first by title, then moving on to excluding by abstract and introductions, and finally conducting the exclusion process based on the whole text and their usability in contrast to the research interests.

The excluded articles were not examining the spread of false information, even if the topic was briefly mentioned in some of the texts. Articles were also excluded if the spread of false information was only part of e.g., discussion and/or findings. Included articles, on the other hand, were explicitly examining Covid-19 pandemic related spread of false information and/or denialism around Covid-19 pandemic. If the usability of an articles remained unclear after browsing through it thoroughly, the article was excluded from the analysis. Even if articles examined Covid-19 pandemic, they had to be offering insights regarding the spread of false information and denialism, too. After this phase, the number of included articles was 19. This seemed too small a number to answer the research questions convincingly. Since at this stage

almost a year had passed from the first search, I decided to conduct a second search with identical parameters to the first one.

The second literature search was conducted March 6th, 2022. Timeframe was set between September 2021 and March 2022. The second literature search came up with 132 new articles, out of which the number of articles included for the analysis was 33. Out of these 33 articles, 19 were research papers and 14 were other kinds of scholarly papers, including editorials, journal articles, essays and opinion papers. While these papers were examining the same phenomenon from various angles and from various academic approaches, research papers were examined as a compilation of their own, just as for the articles in the first literature search. There were no article duplications between the two searches. Those articles that were not accessed without additional payment were not included in the search due to resource limitations. Also, the non-English articles were excluded, similarly to the first literature search.

The final dataset included 52 articles (see Appendix 1): 26 research papers and 26 other scholarly papers. The journals included in the final data set are the following:

International Journal Of Environmental Research And Public Health;

Global Public Health;

Plos One;

Bmc Public Health;

Bmj;

American Journal Of Public Health;

Judgment And Decision Making;

The Bmj;

The Lancet;

Vaccines

Throughout the inclusion-exclusion process after the second literature search, the articles were examined comparatively with the articles of the first literature search. Major differences were not apparent at this stage. However, the number of articles comparing HIV/AIDS pandemic with the Covid-19 pandemic was more distinct in the number of articles. What was also more apparent was that the ratio between research articles and other scholarly papers shifted to being half-and-half.

All the articles comprising the final dataset were analysed with the help of a chart with specified dimensions, including research setting, aims of research, methods/methodology, theories, models & concepts, perspectives, findings, and the interpretive dimension of globalisation processes. This chart was used solely as a tool for the systematic reading process, and therefore the chart is not included as part of this thesis work.

3 FINDINGS

The literature search brought up a set of scholarly texts (other than research papers) that offered insights, criticism, and also recapitulated research data. Many of them could also be seen as "gateways" into relevant pieces of grey literature through cited scholarly material that may offer new perspectives and insights about the research topic. Moreover, even if these kinds of texts cannot be approached as equal to research papers, they still offer us valuable data on the spread of false information in the midst of the Covid-19 pandemic.

This thesis aims to give a general picture of the on-going research around Covid-19 pandemic related denialism and the spread of false information. This thesis should also be recognised as a glimpse of reality of its time. Just as the guidelines of integrative literature review propose, this kind of analysis is conducted in order to find new approaches and directions for research in the future (Torraco, 2005).

Emerging phenomena and utilised concepts of these articles form the core of this thesis. The data of the analysis is summarised in qualitative, integrative manner, which aims to bring together different kinds of data. These findings may also demonstrate possible gaps around this research topic.

3.1 Applied methodologies in the literature

In this chapter some of the articles are gone through briefly. Majority of the research papers in the two literature searches were empirical studies. The studies can be divided into three categories: surveys and interviews (knowledge and data generated by individuals); analyses of pre-existing, user-generated data online; and theoretical and abstract-level approach towards the phenomenon.

The utilised methodologies and research contexts in the studies are diverse. This is why the reviewed studies cannot be put clearly under thematic umbrellas. This complicates drawing unitary image of the phenomenon of false information spreading, as well. Therefore, the focus of this literature review is on the utilised concepts. However, when examining the applied methodologies across the studies, one can recognize similarities between them, and moreover, what kinds of methods have not been applied, yet.

3.1.1 First literature search

In the seven (7) research papers of the first literature review, the utilised methods were online survey, online cross-sectional study, content analysis, discourse analysis, phone interview, and testing game theory modelling of compliance. The studies were conducted in the United States of America, Brazil, South Africa, and Jordan.

As an example of a study utilizing online survey as a method was by Cassese et al. (2020). Their study was set in the context of the USA, and they utilized an online survey to examine people's perception of conspiracy theoretical thinking, and how gender affects engagement to conspirational thinking. The study also evaluated how gendered differences in political stances affect people's compliance of preventative health measures (wearing masks etc.) and engagement to conspiracy theoretical thinking.

The other US-American study by Silva et al. (2021) was an online cross-sectional study examining the prevalence of Covid-19 testing and diagnosis and assessed Covid-19 vaccine acceptance among men who identified themselves as part of the sexual and gender minority community. The perspective of this study was that individuals in the community "are particularly vulnerable to poor COVID-19 outcomes and are more likely to experience stigma and medical mistrust that may impact COVID-19 vaccine acceptance" (Silva et al., 2021, Abstract).

Two studies conducted in Brazil concentrated on the spread of false information on social media platforms. Study by Galhardi et al. (2020) was a quantitative content analysis, where fake news were collected for almost a month. The other Brazilian study was by Monari et al. (2020), and their study aimed "to analyze the pathemic discursive strategies employed by Jair Bolsonaro in his weekly Facebook live streams" (Monari et al., 2020, para. 7).

Phone call interview study by Schmidt et al. (2020) explored South African communities' misconceptions regarding who is the most vulnerable to Covid-19. Qualitative data was coded, after which the data went through thematic analysis.

The study conducted in Jordan by Sallam et al. (2020) aimed to "evaluate the knowledge, attitude and effects of misinformation about COVID-19 on anxiety level among the general public" through a cross-sectional, online questionnaire in April 2020 (Sallam et al., 2020, Abstract).

While these studies above differ from each other, combining factors can also be recognised: studies were predominantly conducted in countries with large populations, and where economical inequalities are apparent (e.g., Polloni-Silva et al., 2021; CFR, 2022), and majority of them were representing quantitative approach, and the data was collected online or remotely through phone calls. What can also be recognised is how differing approaches were mostly localised: researchers were not examining the views on pandemic as a global, but mostly as a localised phenomenon.

3.1.2 Second literature search

In the 19 research papers of the second literature search, the utilised research methods were the following: cross-sectional online survey; theoretical elaboration; online survey; mixed model survey; random data sampling; software-assisted mixed method of qualitative and quantitative discourse analysis; qualitative coding; reflexive thematic analysis on in-depth phone call interviews; scoping review; computer-assisted content analysis; mixed methodology of statistical methods, social media analysis, language processing, and qualitative content analysis; inductive social media analysis; systematic literature review; and research interview with inductive analysis.

Surveys and interviews (knowledge and data generated by individuals), and analyses of pre-existing, user-generated data online, were predominant among the research articles that emerged from the second literature search. Four studies represented theoretical approach towards understanding the phenomenon. Countries, where the studies were conducted, were the United States, the United Kingdom, Brazil, Romania, Uganda, and Burundi.

Some of the studies were accessing their data through internet, where defining national borders was not essential or meaningful for the findings. What is salient to notice is the countries where the research appears to be apparent: those countries, in both of the literature searches, are the United States and Brazil. This could also be seen in the first set of literature.

Studies representing the category of surveys and interviews were e.g., by Agley and Xiao (2021), Buturoiu et al. (2021), and Challenger et al. (2022). Study samples represented societies of the United States, Romania, and the United Kingdom, respectively. In the study of Agley and Xiao (2021), interviewed individuals were asked about the "believability of five selected COVID-19 narratives, their political

orientation, their religious commitment, and their trust in science (a 21-item scale) along with sociodemographic items" (Agley and Xiao, 2021, Abstract). Study by Buturoiu, et al. (2021), on the other hand, examined the society of Romania in Europe through a national survey. Their focus was on beliefs in conspiracy theories in the country, and on the profiles of those believing in them. Experimental study by Challenger et al. (2022) from the UK compared different myth-busting campaign solutions to fight against false information circulating around Covid-19.

Another predominant category was formed by studies that were analyses on pre-existing, user-generated data online. Two of the following studies examined social media, while one of the studies is a scoping review on scientific literature. Structure-wise, this third research papers represents the nature of this master's thesis. Combining feature between these studies was that they offer insights that are based on relatively large set of data. Study by Criss et al. (2021) "aimed to describe themes of tweets related to COVID-19 vaccines, race, and ethnicity to explore the context of the intersection of these topics on Twitter" (Criss, et al., 2021, p. 1). The focus of their study was on the United States. Scholars utilized Twitter's Streaming Application Programming Interface (API) to collect a random 1% sample of publicly available tweets from October 2020 to January 2021, which consisted of the total number of 1110 tweets. The data set went through a qualitative content analysis, after which scholars conducted thematic analysis to find themes under which the codes could be placed.

Another study from the United States is by Hughes et al. (2021): they examined vaccine hesitancy online, and they aimed to identify emerging narratives and rhetorics that are apparent on anti-vaccine and Covid-19-denialist online platforms. The scope of their study "is intended to create a codebook of online English-language anti-vaccination narratives and rhetoric, so as to support government officials and civil society groups engaged in managing disinformation during the COVID-19 vaccination campaign" (Hughes et al, 2021, p. 12). This was done because earlier data implies that emotions and narratives have shown to be effective in communicating about health-related manners to the public. Their corpora were formed through two separate rounds of coding, which were produced through purposeful sampling methodology. The utilised qualitative coding methodology was to identify important narratives and rhetorical styles antivaccine and Covid-19-denialist media used, after which the final body of codes was assessed in quantitative manner to determine frequency of different codes.

Research literature review by Magarini et al. (2021) aimed "to provide a scoping review of the scientific literature about COVID-19-related misinformation and conspiracy theories, focusing on the construction of a conceptual framework which is useful for the interpretation of the conspiracy theory phenomenon surrounding COVID-19, and its consequences" (Magarini et al., 2021, p. 1). Qualitative and quantitative

empirical research and opinion papers were included in the review. The search was restricted to articles published in English. There were no restrictions on the publication phase status or publication date. Magarini et al. (2021) also included studies focused on Covid-19 CTs' mediatic spread, as papers systematically addressing factors influencing CTs' endorsement and related behaviours were scarce. After the exclusion of off-topic articles, they ended up including 90 full-text papers for their analysis.

Majority of the studies of the second literature search represent macro-level approaches towards the phenomenon of false information spread. However, e.g., studies by Lockyer et al. (2021), and Soto-Vásquez et al. (2021), represent micro-level approach regarding the pandemic-related spread of false information.

Lockyer et al. (2021) conducted their in-depth phone interview study in Bradford, the UK, which aimed to assess and understand unwillingness to take the vaccine, and furthermore, provide this data for local decision-making. Interviews were conducted during Autumn of 2020, and interviewees represented different ethnic groups and areas of the city. The context of the study by Soto-Vásquez et al. (2021), on the other hand, was in Latinx community living at the US-Mexico borderline region in the United States, and their interview data aimed to shed light and understanding on information flows among these communities. Study aimed to answer to two research questions: "What roles have key local leaders played in the proliferation of misinformation about COVID-19 in this Latinx border community?" and "How did the public interpret and react to misinformation on social media in the local community using Latinx frameworks of meaning making?" (Soto-Vásquez et al., 2021, p. 422).

It is salient to recognise diverse set of contexts and societal settings, and how e.g., national or local features affect the study interests, and moreover, become features within the phenomenon of false information spreading. This can be observed in Brazilian context where studies and scholarly papers predominantly assess and examine President Bolsonaro's approach towards the pandemic in Brazil, and how the denialism in his actions has been apparent. Studies like these in the second literature search were by e.g., Burni & Tamaki (2021), Fonseca et al. (2021), and Oliveira et al. (2021).

This attribute in Brazilian research literature may indicate that the spread of false information in Brazil is particularly linked to the leadership of the country, or that the science community in Brazil (or scholars examining Brazil) are particularly interested in understanding the actions of President Jair Bolsonaro during the Covid-19 epidemic in the country, or that both of these notions may be valid.

Majority of the studies represented macro-level, domestically oriented studies. However, when compared to the articles of the first literature search, these papers also addressed the minority status in the studies. While it can be said that conducting research online combines the studies, the study settings do not seem to have many combining themes between them.

3.2 The acknowledged and addressed needs in the future research

This chapter is summarising together the predominant themes and topics that combined addressed needs for future research across research papers, and how these needs are acknowledged in the light of research findings. Due to the nature of the research topic, research articles did not only bring forth needs of future research, but also viewpoints regarding actions that are required to tackle the spread of false information. Since the set of literature and studies is diverse, I hypothesised that the addressed needs in the future research are also diverse, and that it is difficult to recognise combining topics across different research settings.

Galhardi et al. (2020) point out in their findings how the action of sharing information that pleases one's worldview and values to the circle of people around them is linked to the experience of well-being. This is because people experience that they allow this information to affect their close ones in similar manner. Spreading false information forward included mostly information of homemade methods to prevent the spread of the virus, and references to banking scams. In their study they saw that most of the false information circulated via WhatsApp. WHO and UNICEF, which can both be considered as institutionalised and reliable sources, formed only 2 percent of the used information sources, when messaging via WhatsApp about care and measures against the spread of the virus.

By leaning on their findings, Galhardi et al. (2020) point out the importance of institutions themselves increasing trustworthy information, and furthermore, making it accessible to the general audience. They also ponder how "[m]any researchers working in communication emphasize that the temptation to regulate content is a delicate maneuver, as it can flirt with censorship, which is abhorrent. The best regulatory approach is possibly acting directly in the public debate, increasing social awareness about the harmful impacts of fake news" (Galhardi et al., 2020, p. 4208). Research-wise, their stance is that "it is essential to carry out and deepen research that contains hypotheses about the beliefs and values of people who more easily adhere to the narratives broadcast on the networks. It is also essential to seek to understand how mediation takes place between digital platforms and the consumer and content sharing society" (Galhardi et al., 2020, p. 4208).

This notion regarding hypotheses about beliefs and values aligns with other studies and their recognised needs for future research. E.g., study by Silva et al. (2021) examining sexual and gender minority men in the US hypothesised – basing on prior data – that people in this minority group were more vulnerable in front of the

consequences caused by Covid-19. The future research needs they address are also intertwined with the limitations of the study: the level of vaccine acceptance was assessed before the American health officials approved the vaccine to the be released to the public, and therefore they note that "[a]s the public becomes more aware of the efficacy and safety of the COVID-19 vaccine, we may see shifts in SGM vaccine acceptance and intention to use it" (Silva et al., 2021, p. 7). For the future research, scholars encourage "to apply sociobehavioral perspectives to examine how these vaccine-related considerations affect COVID-19 vaccine adoption" (Silva et al. 2021, p. 7).

This notion of sociobehavioral perspective could be seen in the study findings of Buturoiu et al. (2021) in Romanian context: one of the relevant findings of the study – which was also validating one of their hypothesis – was that "frequency of church attendance is associated with a higher tendency to believe in conspiracy theories about vaccines and vaccination" (Buturoiu et al., 2021, p. 10), and how this was "is in line with previous studies that highlight that higher levels of religiosity correlate positively with people's propensity to give credence to false claims about the virus and its treatment" (Buturoiu et al., 2021, p. 10). On the contrary, the results of their study did not demonstrate a significant correlation between people's disposition towards critical/analytic thinking and their tendency to believe in conspiracies related to the Covid-19. However, Buturoiu et al. (2021) "believe that analytic thinking is an important means to counter the widespread acceptance of conspiracy theories as education proved to play an important role" (Buturoiu et al., 2021, p. 8). Therefore, by reflecting on the social reality in the country, Buturoiu et al. (2021) highlight the need to develop literacy skills of Romanians in digital media and information consumption, especially among the younger generation. In Romanian context, the general distrust towards the Romanian officials is brought up as an affecting factor, as well.

When examining the study by Challenger et al. (2022), where their study examined and compared different myth-busting campaign solutions in the UK to fight against false information circulating around Covid-19, their study findings implied "that COVID-19 myths can be effectively corrected using materials and formats typical of health campaigns" (Challenger et al., 2022, p. 1), although different solutions had differing levels of efficiency. Basing on the study results, scholars propose the use of question-answer format in posters for similar health-related campaigns in the future. The two other formats seemed to have similar level of effect when compared with each other. Here, however, the question of general trust towards officials was not discussed nor scrutinised as it was in the Romanian context.

Another addressed need for future research was further understanding on political affiliations and political interests that might affect behind leader-generated spread of false information. These articles were mostly examining the societal reality of Brazil, and the actions of President Jair Bolsonaro. E.g., the research by Burni and Tamaki

(2021) brings forth how "future research could investigate how populists manage to reconcile the paradoxical image of having "exceptional" and "ordinary" qualities" (Burni & Tamaki, 2021, p. 127). Furthermore, they suggest that "studies could assess to what extent populist communication is able to change the perception of a populist leader or even the perception of a crisis" (Burni & Tamaki, 2021, p. 127), and how their research can offer some tools as a basis in the future research on this topic.

Further examination of systemic racism, and within this, medical mistrust that is derived from earlier experiences and mistreatment, is also brought up as a need in the future research; however, these studies represent certain societal contexts, and mostly the society of the United States. In the US-American context, racism and medical mistrust are usually experienced by people of colour and by other minority groups inside American society. Therefore, deepening understanding through research might offer valuable data for communities in a certain geographical area, but not on the other side of the globe where societal settings and demographic features are vastly different. It is also important to notice that systemic racism does not include examining individuals who solely belong into more vulnerable minority groups in their societal context.

The matter of cultural variance is also brought up: study by Hughes et al. (2021), whose study examined anti-vaccine rhetorics and Covid-denialist information online within Francophone sphere, pointed out how foreign false information campaigns (in languages other than French) also target these spheres. For future research, scholars propose exploring if "public health messages countering anti-vaccine and COVID-denialist media should be tailored for the specific regions in which they are broadcast, or if language alone is sufficient to positively influence audiences" (Hughes et al. 2021, p. 23). This need for future research could be applied in a broader sense to discuss if localised adaptation is required more globally, meaning that local health officials could consider the local risks around the spread of false information, and target these features in their campaigns and communication tackling denialism and false information. This notion of localised tactics links to the findings and future research needs brough up by e.g., Fergus et al. (2021), and Challenger et al. (2022).

Fergus et al. (2021), whose study was conducted in Uganda, emphasise the importance of local adaptation of health messaging materials in the tackling of false information and false information -derived methods against Covid-19. These false beliefs included e.g., religious explanations, that drew material from various belief systems and religions. In the societal context of Uganda, health care workers pointed out that disseminating accurate health information through mass media channels was the most effective way. Similarly – by relating to the field of health care – the study by Challenger et al. (2022) from the UK found out that false beliefs could be altered through health campaigns; for the further research needs, they brought up using similar methods in different contexts and formats, and trying this to alter other kinds of

false beliefs, rumours and myths, and examine what kinds of tactics have comparatively the best outcomes in the general public.

Findings of both of these studies connect with the findings of e.g., Bonafe-Pontes et al. (2021), who point out in their conclusion that their study "results underline the importance of a two-pronged approach: promoting knowledge of what constitutes scientific evidence and cultivating the ability to continuously reevaluate beliefs according to new evidence. Future research should focus on developing strategies to effectively achieve both goals" (Bonafe-Pontes et al., 2021, p. 1592).

Within the developing of understanding, the literature, e.g., Agley & Xiao (2021), Travain et al. (2021), and Shobowale (2021), propose how the academic community and scientists needs to work towards opening up research processes to the general audience, as well as how research data accumulates, and through this, paradigms alter and shift as new data emerges, especially around novel research topics, e.g., the Covid-19 pandemic during its first year. In the study findings of Agley and Xiao (2021), trust in science was conceptually less related to what narrative to believe, and more related to what narrative(s) are more appropriate to disbelieve. Salient finding of the study, on a surface level, was to understand how people perceive competing narrative explanations regarding a major event like the Covid-19 pandemic (Agley & Xiao, 2021).

To summarise some of the insights from the reviewed literature, it would be beneficial to examine the following topics in the future research around Covid-19 pandemic and false information linked to it: political affiliations, media literacy, and effective health-information campaigns. These studies cannot be conducted with universally adaptable settings, since societies differ sometimes greatly, and studies are always context-bound. However, utilising commonly used concepts is beneficial for the accumulation of data, and some of the most commonly emerged ones are handled in the next chapter.

3.3 Concepts utilised in research

The concepts handled in this chapter appear in multiple articles within the data set and they have been examined through lenses of different academic disciplines. There were four identified macro-level concepts emerging from the literature. They were 1) *Infodemic,* 2) *Conspiracy beliefs and denialism,* 3) *Populist Rhetorics,* and 4) *Former pandemic of HIV/AIDS*.

Next, I will analyze what these concepts entail, what one could think of them, as well as what these concepts might miss knowledge-wise. They are also closely intertwined with each other: discussing these concepts without overlap is unlikely, and therefore, unnecessary.

In the beginning of the pandemic, the number of scholarly articles (not research papers) appeared to be relatively large: e.g., journal entries, editorials, and notes can be seen academic conversation openings, through which scholars have brought up approaches and insights regarding the unfolding situation. These scholarly entries could also be approached as baseline for the scholarly world to acquire tools for analysing events. Since the number of non-research papers of the whole literature was forming a great portion of the data, their insights are considered here analytically in juxtaposition with the research papers. Generally, the scholarly articles in both literature searches brought forth similar topics as the research articles.

3.3.1 Infodemic

Infodemic is one of the key concepts to understand Covid-19 pandemic denialism from the standpoint of communication research. The term is derived from the combination of two words, 'information' and 'pandemic/epidemic'. ´Infodemic´ is also a concept that is utilised repetitively throughout the articles in both literature searches. The definition of WHO (World Health Organization) is also referred to multiple times.

For example, Logan et al. (2021) define infodemic as "a global crisis of "contagious" misinformation" (Logan et al., 2021, p. 2). Sallam et al. (2020), on the other hand, define infodemic as "an over-abundance of information–some accurate and some not–that makes it hard for people to find trustworthy sources and reliable guidance when they need it" (Sallam et al. 2020, p. 2). They also bring up how "[c]onspiracy theories regarding the origins of COVID-19 might be a way for the public to make sense of this pandemic" (Sallam et al., 2020, p. 2).

Infodemic is similarly defined as "numberless rumors, misleading facts, and fake news regarding the coronavirus situation that have constantly circulated online and that show no sign of halting soon" (Buturoiu et al., 2021, p. 1), and how it is "[r]anging from stories denying the very existence of the virus to narratives claiming that its transmission is associated with the roll-out of 5G or that facemasks can cause hypoxia or hypercapnia" (Buturoiu et al., 2021, p. 1), and how these "toxic narratives have proliferated and continue to be widely shared among internet users around the world and fuel confusion, uncertainty, and concern" (Buturoiu et al., 2021, p. 2).

Magarini et al. (2021) bring up the definition for infodemic as "the spread of too much information—including false or misleading information in the digital and physical environments—during a disease outbreak"(Magarini et al., 2021, p. 1), and how it leads to "confusion and can worsen risk-taking behaviours, with potential harmful results. It also leads to mistrust in health authorities and undermines the public health response" (Magarini et al, 2021, p. 1).

Infodemic as a concept includes the spread of mis- and disinformation: misinformation commonly refers to the spread of information that aims to mislead people, while "[i]n parallel, disinformation may reflect agendas expressing anxiety over socioeconomic instability, unrestrained capitalism and distrust of government"(Looi et al., 2021, p. 23). Since the ways of communicating have become increasingly technologically mediated, the spread of false and biased information has been especially vivid among online platforms; social media has its elevated position in the spread of false information. Before the digitalization era, the spread of information for larger masses used to be in the hands of journalists and other information controlling institutions. This included "gate-keeping", as well as the possibility to separate the verified truth from the "trash". From academic approach, "[t]heories developed in studies of communication and journalism looked primarily at gatekeepers as selectors or human information filters (e.g., editors, gatherers)"(Barzilai-Nahon, 2009, p. 3). Moreover, gatekeeping includes how social reality is being constructed and transmitted by and via the news media, and how this is not simply a process formed of decisions to publish or not publish a piece of news.

Infodemic is also a result of people's social realities, as well as a result of people's humane needs. In their article, Galhardi et al. (2020) write about a BBC News Brasil interview with Cláudio Martins, who is a psychiatrist and director of Brazilian Psychiatric Association. According to Martins, "people who share fake news experience a sense of well-being similar drug users" (Galhardi et al., 2020, p. 4206) since the action of sharing news that please their receiver and forwarder, and how this "drives people to compulsively transmit the same information so that their circle of friends will feel the same" (Galhardi et al., 2020, p. 4206). Martins states to believe that this euphoric experience prevents critical and analytical approach of the receivers, and he refers to this phenomenon as *emotional infantilization*, which means that few people bother to check the original sources or conduct a proper research. Martins states that "it is necessary to understand that the belief in fake news is a sociocultural phenomenon that involves several factors of personal and social life from a behavioral viewpoint" (Galhardi et al., 2020, p. 4207). Therefore, it might not be meaningful to solely examine the platforms and the companies behind them: one should also consider their users. Nevertheless, corporations behind the utilised applications are similarly in charge of their content and how their channels are being used for the spread of (false) information, too.

The findings of Galhdardi et al. (2020) partially align with the study findings of Magarini et al. (2021), who mention factors such socio-environmental conditions, that, include e.g., low educational level and young age. Magarini et al. (2021) also state in their findings that "psychological processes and attitudes (such as low levels of epistemic trust, the avoidance of uncertainty, extraversion, collective narcissism, and a

conspiracy-prone mindset), and contextual factors (e.g., high levels of self-perceived risk and anxiety) seem to underpin the adherence to beliefs that are not solely the domain of paranoids and extremists but a widespread phenomenon that has caused important health, social and political consequences" (Magarini et al., 2021, p. 1).

Directly linking to the realm of social media, communication scholars discuss the problematic phenomenon of *echo chambers*, referring to the so-called "bubbles" in which people communicate, especially in online mediated environment, e.g., on Twitter (e.g., Guo et al., 2020). Additionally, the question of individuality, as well as the desire to achieve individuality and self-control through noncompliance emerge from the literature.

Linking this to the results of the literature searches, study by Stoddard et al. (2021) from the first literature search concludes that "noncompliance is embedded in human nature, as individuals optimizing their own self-interest can justify their actions in terms of their own perceived cost-benefit" (Stoddard et al. 2021, p. 8). They point out that there are various reasons for people to not comply in the midst of Covid-19 pandemic. For example, individuals may see themselves as part of the non-risk group, and that this *optimism bias* causes non-compliance. Leaning on this, they conclude that "[g]lobally, the public health messaging around noncompliance has focused on the low risk of death for younger individuals", since their actions affect the risk groups the most (Stoddard et al. 2021, p. 8).

Meaningful viewpoint of the nature of infodemic is also intertwined with the political reality and political narratives affecting discussion around the spread of Covid-19. Strong individualist truth-telling, as well as representation of power and aggressiveness are interlinked with "contemporary post-truth" politics. This phenomenon is examined more thoroughly under the concept of *Populist rhetorics*.

Harsin (2020) writes how infodemics as a concept "signals distinctly cultural aspect of the virus' impact since information implies human relations of mediation (media) and communication" (Harsin, 2020, p. 1061). Important notion is also how "there is nothing particularly unique or specific about the popular political and cultural responses to COVID-19. Rumors and conspiracy theories are prevalent in all pandemics, as well as other major public crises" (Harsin, 2020, p. 1061). While Harsin points out that infodemic as such is no way a new phenomenon, the tools that are used for it have developed greatly throughout times: not only that the production of false information takes much less resources than a couple of decades ago, the number of people producing information like this has also skyrocketed due to the easiness of the provided tools.

As infodemic is the combination of two words, information and epidemic/pandemic, the connotations of the word are generally negative. Peer-reviewed journal article by Scott (2021) from the second literature search brings forth valuable aspects and viewpoints regarding the management of infodemics. Scott notes that the

overabundance of inaccurate and accurate information is not only a concern of science world and policy publications, but also a concern of the journalistic realm and social media. This notion aligns with majority of the other articles emerged from the two literature searches. Scott also addresses the echo chamber effect as part of this equation.

According to Scott (2021), the "core dimensions of rumour, misinformation and disinformation, are the degree of 'facticity' (ie the accuracy of the statement), the intention of the author or source and the role of the audience" (Scott, 2021, p. 377), and how "[i]ndividuals incorporate misleading statements into a mental model that combines new (mis)information with pre-existing assumptions and beliefs, thus creating an integrated scaffolding of ideas" (Scott, 2021, p. 377). In the creation of memorability among the audience, the offered models and explanations are made simple in order for them to be more cognitively attractive, since straightforward and easily understandable models are more likely to be shared forward. In the management of false information spreading, Scott (2021) brings forth a few key factors: ridiculing and judgement are not effective ways to debunk false information, and most likely also create resistance among the targeted audience. Utilizing narratives in the debunking process might be a valuable strategy, and when this is done in a way in which individual are given the initiative for change. Moreover, it is "unrealistic to expect an individual clinician or researcher to convince committed anti-vaxxers to adopt the most accurate or factual model" (Scott, 2021, p. 378).

Notion of the necessity of education aligns with the findings of e.g., Buturoiu et al. (2021), and their findings regarding the importance to teach younger audience about media literacy. Scott's (2021) article works also as a gateway for further literature discussing this phenomenon. One of these quoted pieces of literature is a journal commentary in the *Journal of Medical Internet Research* by Eysenbach (2020).

Eysenbach (2020) has coined three terms: infodemiology, infodemics, and infoveillance. Eysenbach defines infodemiology "as "new emerging research discipline and methodology" (Eysenbach, 2020, p. 1) comprising the "study of the determinants and distribution of health information and misinformation—which may be useful in guiding health professionals and patients to quality health information on the Internet" (Eysenbach, 2020, p. 2).

What can be recognised as valuable pondering from Eysenbach's side is that in the beginning of the Covid-19 pandemic, instead of talking about facts or truths, we should have considered those medical facts as the best evidence at the time (BETs), and how this data also needs to be integrated with economic and political considerations and may be subject to cultural variations and influences. Eysenbach (2020) notes how fighting against infodemics by simply spreading *facts* is relatively complex since, as noted before, we do not know what actual facts are. Eysenbach describes infodemics and its occurrence on four different levels by using a "cake model": "Social Media"

as the bottom layer, and then moving on upwards to "News Media", then to "Policy/Health Care Practice", and above all, "Science" (Eysenbach, 2020, pp. 2-3). The spread of false health information is mostly spread and acquired via the internet, and people are accessing health information from the internet due to its convenience and affordability.

Similar notions were brought up by Kata (2011) nine years earlier in a journal article examining anti-vaccine activists. Kata writes how "[e]vidence shows that individuals turn to the Internet for vaccination advice, and suggests such sources can impact vaccination decisions – therefore it is likely that anti-vaccine websites can influence whether people vaccinate themselves or their children" (Kata, 2011, p. 3778). Kata also writes also about the postmodern medical paradigm, which "questions the legitimacy of science and authority, stressing the need for patients to hold more power" (Kata, 2011, pp. 3778-3779). This notion of power shift is linked to the access to information through internet, which in itself is directly linked to the concept of infodemic.

While Kata (2011) brings forth the benefits of internet-mediated health collaboration, this similarly allows the marginalised denialist groups to connect with like-minded people, despite geographical boundaries. Article presents various argumentation fallacies denialists utilise, e.g., referring to their community as a proof with the statement "[s]o many people can't all be wrong" (Kata, 2011, p. 3781). This statement does not address the reality regarding the number of vaccine-denialists inside their respective communities, which in itself relates directly to the echo-chamber phenomenon.

Other fallacies are e.g., simplistic explanation of not-man-made being good and man-made being inherently bad. Also, the use of *Galileo gambit* is brough up, which refers to stating that even if at the current moment unaccepted/unverified information is seen false, later on this information is proven to be correct. Another acknowledged fallacy is the statement of being an expert regarding one's own child, which directly links to great portion of parents who form a big part of the anti-vaccine communities – online and in person. This argument is often linked to the argument "I don't believe in coincidences" (Kata, 2011, p. 3783), referring to the phenomenon to see causality connection between a vaccine and an emerged health-related issues, such as autism and other illnesses.

Kata (2011) concludes that the "techniques used by the anti-vaccination movement are cunning, for not only are their protests camouflaged in unobjectionable rhetoric such as "informed consent", "health freedom", and "vaccine safety", they take advantage of the current postmodern medical paradigm" (Kata, 2011, p. 3784). Kata (2011) notes how these individuals aim to find so-called common ground with those "who question, fear, or crusade against vaccines" (Kata, 2011, p. 3784) due to the ever-changing arguments and online platforms, which are then exhilarated by the

"postmodern medical paradigm" (Kata, 2011, p. 3784), entailing one's own research and questioning authorities and experts.

When considering these contexts, we also need to consider media literacy and the level of trust towards media and leaders in the general population, which are factors strongly related to Eysenbach's modelling, as well. Moreover, political – and through this, societal and social – realities in different countries have elevated importance in this management. Just as Eysenbach (2020) states in his conclusion, "[p]oorly executed and uncoordinated infodemic management may lead to unintended consequences such as the sidelining and suppression of science in favor of political and commercial interests" (Eysenbach, 2020, p. 4).

3.3.2 Conspiracy beliefs, denialism, and mistrust

These three terms have been brought up in differing ways throughout the searched literature. One could examine these concepts as separate phenomena, but possibly also as different dimensions of one phenomenon that cannot even be separated from each other.

In their review, Magarini et al. (2021) identified features intertwined with conspiracy beliefs, including social media, mistrust towards science community, and educational background. Other identified features were that Covid-19 pandemic related conspirational thinking is closely related to other conspiracy theories, and how individuals believe in multiple different conspiracy theories simultaneously, even if they might be contradictory in relation to each other. Moreover, their study brought forth that there "is extensive literature suggesting that belief in CTs is based on the epistemic need for certainty and control" (Magarini et al., 2021, p. 9).

Feelings of anger, uncertainty, and the overall feeling of helplessness caused "vulnerability to conspiracy narratives that provide handy and captivating answers to the causes of an event of such catastrophic proportions" (Magarini et al., 2021, p. 9). They argue that this phenomenon of wanting to believe in conspirational ideas reflect the reality of humankind around the world, included the humane need to belong, to feel safe, and moreover, feel good about one's social group(s) one belongs into.

To summarise, their literature suggested that those who already face a greater deal of situational uncertainty, are also more likely to be impacted by Covid-19 pandemic related conspiracy theories. Listed socio-demographic element were e.g., low educational level and limited scientific knowledge. Acknowledged personality-related and psychological traits, on the other hand, were e.g., predisposition to reject expert information, avoidance of uncertainty and external blame attitude.

Another insightful approach is by Parmet and Paul (2020): they remind reader how one must understand that Covid-19 pandemic is not the first epidemic during which false information spread among populations. However, they address that the world we are currently living has become different.

> What seems different today is that we confront not simply deceptions and erroneous statements but rather a deep skepticism about the very idea that truth exists. In our posttruth world, the line between fact and opinion fades. Being "caught" in a lie no longer guarantees negative consequences, and the phrase "believing is seeing" has transformed from a psychological insight into an accepted way of life. Although the roots of this epistemic crisis are clearly visible in the antivax movement and climate change denialism, COVID-19 may be our first posttruth pandemic. (Parmet & Paul, 2020, p. 945).

Parmet and Paul (2020) also write that "[u]nless the public trusts that public health measures are grounded in the best available science, even if that science is incomplete and changing, individuals cannot be expected to follow public health recommendations, such as to shelter in place" (Parmet & Paul, 2020, p. 945). While their paper represents US-American society, the notion of how "[r]apid cultural change and widening economic inequality have fueled increases in political polarization that cement loyalty to party over a shared search for truth" (Paul & Parmet, 2020, p. 945) can be seen as a phenomenon that is valuable to understand from global perspective, as well. This concept of 'public trust' (and the lack of it) comes up as an important component of the formation of (medical) trust and mistrust among people. This is handled e.g., in an editorial by Benjamin (2021), and in a research paper by Kalichman et al. (2021).

While the focus of Kalichman et al. (2021) is on HIV-positive individuals, their article functions as a gateway for further literature discussing trust regarding health information sources in US-American context. One of these pieces of literature was by Peterson et al. (2020), who write how during "public health emergencies, such as an influenza outbreak or a bioterrorism attack, individuals who report high trust in government health agencies respond more quickly and are more likely to comply with the health recommendations provided by the agencies"(Peterson et al., 2020, p. 978). What makes trust towards government officials is that it required trust in people and broader organisations one does not know personally. Peterson et al. (2020) bring forth how "[p]erceptions of financial involvement of lobbyist groups, pharmaceutical companies and the tobacco industry may influence how forthcoming or honest individuals perceive health expert systems are being with the current evidence base" (Peterson et al., 2020, p. 979). Furthermore, the "rapid increase of accessibility" (Peterson et al., 2020, p. 979) of information – which is one dimension of infodemic – through different channels has led to state where people are being exposed to misinformation.

This notion of accessibility of data and its effects has been studied in different contexts. Research data indicates that e.g., anti-vaccine communities online have harnessed persuasion techniques (including misuse of scientific knowledge) to pass through their ideologies and agenda (e.g., Moran et al., 2016). Even if the insights by Peterson et al. (2020) regarding medical (mis)trust come from US-American context, these insights can be considered salient for other kinds of settings, too. In their findings, possibly most valuable notion is their concluding suggestion that "it may not be appropriate to assume that trust in health sources generally extend to specific health topics, as perceptions of dimensions underlying trust (e.g., competency, honesty) are likely context-dependent" (Peterson et al., 2020, p. 986).

This interconnectedness of mistrust towards science and conspiracy beliefs is also addressed in a research article by Agley and Xiao (2021). By leaning on former studies examining beliefs that are based on false information and conspiracy theories, Agley and Xiao (2021) bring forth that there is no clear-cut correlation between scalable factors (e.g., individual's level of education), and that "[p]revious research on factors associated with belief in misinformation or conspiracy theories has produced varying, and sometimes inconsistent, findings" (Agley & Xiao, 2021, p. 1). This challenges the review insights of previously mentioned Magarini et al. (2021). Therefore, this might emphasise the context-dependence when aiming to understand reasons behind conspirational thinking and denialist approaches towards government-provided health information.

However, similar findings regarding context-dependence emerged from the study of Agley and Xiao (2021), as well. While data demonstrated that one's demographic attributes such as political orientation and religious commitment did not directly correlate with belonging into any particular false belief subgroup, they also conclude that 'trust in science' might be a "modifiable characteristic" (Agley & Xiao, 2021, p. 9), meaning that at right moment one's trust can be altered and shifted towards mistrust when misinformation intervenes at a fruitful moment. Nevertheless, Agley and Xiao (2021) also conclude that in order to deal with mistrust and conspiracy beliefs, science community should be "taking concrete steps to improve trust in science and scientists, such as building understanding of the scientific process and supporting open science initiatives" (Agley & Xiao, 2021, p. 1).

Through access to the internet and social media platforms, individuals stemming false information might impose a risk on e.g., those who have not acquired sufficient tools to analyse and critically approach new kind of data, or who are not aware of the core attributes required in scientific knowledge accumulation. Moreover, the persuasion tactics used by denialists online are multifaceted, and therefore, even dangerously effective. To lean on some external papers outside of the two literature searches examining this phenomenon, a good example could be e.g., a paper by Hansson (2017).

Hansson brings forth how individuals not wanting to believe in science and scientific knowledge-productions take definable communicational actions. These actions include "fabrication of fake controversies" (Hansson, 2017, p. 39), which refers to the phenomenon where those who have alternative, deviant views on science or societally important events, are not invited to join the public forums to discuss their opinions, and for this reason, they present this as them being silenced. Two other forms of action brought up were building the narrative of enemies, as well as appealing directly to the general public, since the scientific community turns down their publications through peer-reviewing process, or even earlier than that.

This phenomenon of turning to the general public has been visible throughout the Covid-19 pandemic. Also "pretence to have a much larger support in science" (Hansson, 2017, p. 44) through creating institutes and conferences is a communicational technique to create the impression of larger scientific community standing behind a certain reality. Since Hansson's article is from the year 2017, social media platforms such as TikTok had not reached their current status in the spread of information. Social media applications can be a generator in the creation of "hype" of science denialism and spread of anti-science narratives. For example, even if majority of the content on TikTok concentrates on humorous content, in the beginning of the pandemic (first months of the year 2020) a considerable number of videos could have been identified as false or misleading information (e.g., Southwick et al., 2021).

So what makes these websites and online realms so attractive for denialist information to spread? E.g., a study by Moran et al. (2016) offers insights regarding the phenomenon through three theoretical lenses, which were *social judgement theory*, *cognitive dissonance theory*, and *inoculation theory*. Their analysis examined 480 web pages advocating against vaccinations. Basing on their findings, Moran et al. (2016) point out that even when facing research data and other pieces of evidence regarding the benefits of vaccines, the counter reaction is particularly strong from side of those believing in antivaccine stances. The accumulation of this kind of information lays heavily on the Internet, and that it has a salient role in forming hesitancy towards vaccines. According to the introduced *social judgement theory*, the first theoretical lens, attitudes regarding pro-vaccine information from the side of "antivaccers" vary according to the strength of the values they possess. Moran et al. (2016) state that "social judgment theory posits that such strong attitudes can be a function of ego-involvement with a particular topic" (Moran et al., 2016, p. 152).

Another utilised theoretical lens, *cognitive dissonance theory*, on the other hand, "posits that individuals have an innate drive for consistency. When two cognitive elements (attitudes, beliefs, values, etc.) conflict, dissonance is produced. This dissonance is aversive and, as such, individuals should experience a subsequent drive to reduce or avoid it" (Moran et al., 2016, p. 153). Moreover, these websites aim to build

connection between the antivaccine stances and important norms and values. By doing this, for-vaccine attitudes would be seen as a value fighting against the other important values.

Analysis of Moran et al. (2016) highlights how these lifestyle norms and values include e.g., believing in the effectiveness of homeopathic medicine, eating organic food, and breastfeeding one's children. Coded values of the analysis included e.g., individualism, freedom, religion and religiosity, as well as holistic valuation of naturalness. Thirdly introduced inoculation theory worked as theoretical grounding for their study, according to which "a communicator advocating a particular position can engender resistance to a counter-position by 'inoculating' the audience against the opposing side's argument" (Moran et al., 2016, p. 153).

Unequal societal structures have also their part in the formation of mistrust, and through this, denialism and conspirational thinking. In the United States, communities of colour and other vulnerable communities are especially at risk due to people's experiences of racism and stigma in their daily lives, and therefore African Americans are less likely to trust medical professionals compared to their white counterparts (e.g., Armstrong et al., 2013). Even if the study by Armstrong et al. (2013) is examining racial discrimination in the US-American context (which includes the question of e.g., health insurance costs and being uninsured), features such as religiosity, culturally appropriate interaction, and communication training, can certainly be taken in count in e.g., European context, as well. The question of culture and proper communication training cannot be neglected. Former negative experiences within health care services can have a tremendous impact on people's trust regarding professionals and their competence. Therefore, the experience of racism and possible 'othering' should also be considered in broader, universal sense.

Additionally, the increasing economic inequality is a global phenomenon, and strongly related to individuals' experiences regarding their position in society. E.g., Jaiswal et al. (2020), whose *Notes from the field* emerged from the first literature search, brought up the need to address the structural racism and inequality and its connectedness with the spread of mis- and disinformation, and moreover, denialistic stances. In their article, Jaiswal et al. (2020) connect phenomena of medical mistrust and conspiracy beliefs with each other, and the aim of their commentary is to suggest that "understanding the etiologies of disinformation, misinformation, and medical mistrust must be an important component of the public health response to COVID-19" (Jaiswal et al., 2020, p. 2776). Therefore neglecting the experience of mistrust requires especially in-depth examination: article emphasises how the use of terms such as *conspiracy beliefs* may have negative consequences since this "risks obscuring and denying meaningful aspects of people's lived experiences, particularly regarding inequality-driven mistrust, and is an ethical and strategic mistake for public health" (Jaiswal et

al., 2020, pp. 2777-2778). When examining the situation in European context, one could analyse vaccine acceptance rates among e.g., non-European refugee population, and how this has been discussed in the popular journalistic media. For example, European Commission (n.d.) points out in their guidance note how migrants might view accepting vaccine as a risk to be reported, detained, or even deported, and how public messaging should be clear these individuals will not be targeted by immigration enforcement when seeking access to the vaccine.

When moving on from the causes to the consequences of false information spreading, we understand that these actions of relatively small number of individuals might affect larger population. Therefore one could ask, should these actions be examined from legal point of view as well?

E.g., Mills and Sivelä (2021) discuss this dilemma in an editorial, and they both have differing opinions regarding the criminalisation of the (acknowledged) spread of false information: both of them agree that this topic is a grey zone, but Mills points out how "criminalising people who intentionally hurt others through false information should also be considered. The freedom to debate, and to allow the public to raise legitimate vaccine concerns to fill the knowledge void, should not extend to causing malicious harm" (Mills & Sivelä, 2021, pp. 1-2). Sivelä, on the other hand, disagrees with the possibility of criminalisation due to the freedom of speech and other liberties, and how "criminalising anti-vaccine misinformation could make it grow even stronger" (Mills & Sivelä, 2021, pp. 1-2).

In their editorial, Mills and Sivelä (2021) utilised a research article by Basch et al. (2017), whose focus of the study was on YouTube as a medium to spread vaccine-related false information. Even if our current situation has shifted and changed, the seed of mistrust has (in most cases) been planted well before the Covid-19 pandemic. Even if great deal of videos analysed in this study were having a neutral approach towards vaccination, greater number of videos were against vaccinations compared to those advocating for them. Therefore, it could be hypothesised that the filter for this kind of content was not as strict in 2017 as it has been throughout the Covid-19 pandemic. What is similarly salient in their study is the mention of how great audience – in largening matter – searched for health information from YouTube. It is therefore plausible that the soil for vaccine denialism existed many years prior of the Covid-19 pandemic, and the channels utilised for the spreading of information, as well as accessing the information, were already there. One year prior the publishing of the article (in 2016), YouTube stated to be the most popular social media platform for video content (Basch et al., 2017). While YouTube, and above it, Google, has increased monitoring of false information on its platforms, it can be assumed that these policies were much looser before the start of Covid-19 pandemic.

It is complex to create a clear picture of the causes behind conspirational thinking, denialism and (medical) mistrust. Internet has its position as the most influential medium to spread denialist information: there are individuals and communities that skilfully connect positive values with anti-vaccine sentiment, and by this, persuade people to support these denialist realities. However, when examining the reasons behind people's need to believe in these "alternative truths", the reasons are multifaceted.

Addressed reasons by the scholars include e.g., local and global cultural changes, and moreover, experiences of inequality. In some societal contexts, denialism, conspiracy theories, and medical mistrust are intertwined with political polarisation. An important notion of medical mistrust is connected with the lack of openness from the side of scientist, which in itself is a complex matter: even if the accumulation of scientific knowledge was explained transparently to the general public, great portion of people might not have tools to assess or internalise this information. Moreover, those who are already part of the denialist community (e.g., antivaccers) are less likely to accept this kind of knowledge, even if it was offered to them in transparent manner.

3.3.3 Populist rhetorics

When examining the articles – both research papers and journal articles – of the two literature searches, apparent emerging concept combining these is *populist rhetorics*. More precisely, the papers were examining populist rhetorics of President Jair Bolsonaro in Brazil, and President Donald Trump in the United States. One predominant theme combining them was their prioritizing of countries' economies during the Covid-19 crisis. Since great portion of the studies came from Brazil, also the predominant focus of the literature was on President Bolsonaro – nevertheless, parallels were often drawn to President Trump.

Harsin (2020) brings forth the phenomenon of "emo-truth" (emotional truth), which "is a particular form of aggressive masculine performance of trustworthiness, corresponding to a code for recognising it, resulting in a legitimated status of the popular truth-teller, and at odds with more official scientific, institutional truth-tellers" (Harsin, 2020, p. 1062). Harsin also writes how "[t]hese toxic male 'truth'-tellers are often associated with flouting 'political correctness', saying what is on their minds – snowflakes and trigger-warnings be damned. Such speech is 'honest', 'trustworthy' – and therefore deemed to be true. The auratic quality of emo-truth performances is characterised by displays and perceptions of hate, rage, intimidation, insensitivity and violence; bullying, yelling, lurking, trolling, with only scorn for dialogue and listening" (Harsin, 2020, p. 1063). Gonsalves and Yamey (2020), on the other hand, bring up how

populist leaders from bigger and more populated countries (such as the USA and Brazil) turned their narratives against the science community. Gonsalves and Yamey (2020) ponder how these leaders end up "retelling" about the reality, after which they refer to an interview they had with a philosopher Jason Stanley, according to whom "[t]he only authority for these figures is that of the leader. Epistemic authority is seen as a challenge to the one authority they recognise. It's seen as a threat. So, they are inclined from the start to view scientists as their opponents" (Gonsalves & Yamey, 2020, p. 1).

As an example of research articles examining populist rhetorics, Monari et al. (2020) aimed to "analyze the pathemic discursive strategies employed by Jair Bolsonaro in his weekly Facebook live streams, known colloquially as 'lives', to convince the population of the usefulness of taking chloroquine and hydroxychloroquine to treat COVID-19, despite studies indicating its inefficacy and the WHO not recommending its therapeutic use" (Monari et al., 2020, p. 3). Their analysis brings forth how President Bolsonaro aimed to question scientific logic and methods of producing scientific knowledge, and furthermore delay this from taking place. Monari et al. (2020) write how "the Brazilian president paints a discursive scenario colored with the hope that "we will beat this wave and we will grow," since, after all, "it seems like God is Brazilian"" (Monari et al, 2020, p. 7). Worth noticing is that religiosity was one predominant theme utilised by Bolsonaro. Emerging from the research literature, similar discursive phenomenon of turning towards divine – the narrative of God protecting the country – was acknowledged by Paviotti (2021) in the country of Burundi.

Findings through conducted analysis of Monari et al. (2020) highlight Bolsonaro's strategic management of people's distrust towards science. Moreover, "[t]he strategic management of most peoples' ignorance of science and desire to affirm their prior beliefs has led, paradoxically, to recognition of the authority of a charismatic leader who seeks to claim for himself the confidence lost in institutions by stimulating and propagating generalized distrust" (Monari et al., 2020, p. 10). In their conclusions Monari et al. (2020) state how "[t]hrough the investigation of Bolsonaro's weekly Facebook live streams, we observed that the new coronavirus pandemic has reinforced right-wing populism in Brazil. The crisis triggered by the federal government was against science, and often in favour of affirming the president's opinion" (p. 14).

Fonseca et al. (2021) describe populist leaders as people "who appeal directly to their constituencies, without formal political intermediation (e.g. parties) and where expedient, without basing their policies or programmes in scientific or expert knowledge" (Fonseca et al., 2020, p. 1253). Discursively, populist leaders claim to address the general public instead of the 'elite', through which they also emphasises values such as family and autonomy, and moreover, wrap these narratives with people's fears, sometimes even by using misinformation. Acknowledged discourses used by

Bolsonaro were "the false dilemma of economic catastrophe, denialism, diminishing the importance of social distancing, misuse of science, and blame" (Fonseca et al., 2021, p. 1262). Fonseca et al. (2021) note how their findings align with earlier study findings of Lasco (2020), who states as a result of an analysis, that "Bolsonaro has invoked the language of conspiracy, forging divisions between the 'people' and dangerous others in the process" (Lasco, 2020, p. 1420), and how there are visible parallels between Bolsonaro and Trump, for example in their way of criticising WHO.

On the other hand, Fonseca et al. (2021) state how "[t]he denial or marginalisation of scientific advice works politically to undermine the legitimacy of scientific expertise and associated institutions – thereby undermining these alternative sources of influence and power" (Fonseca et al. 2020, p. 1262). These findings of Fonseca mostly align with insights of Lautensach (2021), whose editorial entry was included in the second literature search. Lautensach (2021), however, draws parallel between Covid-19 pandemic denialism and climate change denialism, as well, and writes how "[n]ot everybody will be comfortable with the idea of treating the pandemic and climate change as the first examples in a series of predictable transition events. The two events differ in the kinds of challenges they raise. Climate change differs from the pandemic in its slow, gradual increase from imperceptible beginnings, its diverse regional manifestations, its longevity, and its slow responsiveness to mitigation measures" (Lautensach, 2021, p. 2).

Other kinds of reasonings could be considered when aiming to understand populist leaders and their meaning-making, but also the meaning-making of those whose worldviews align with populist leaders and their statements – the question is, why do people want to believe populist, simplified solutions?

Even if the focus in the article by Magarini et al. (2021) is on conspiracy theories (CTs) and the false information, their insight regarding the need behind these CTs could be linked to understanding the audience adapting and believing in populism and its simplified solutions. As they point out that even if "CTs are related to the oversimplification and distortion of information, they quickly provide an explanation for confusing events, assigning the causes of significant social and political events to secret strategies by powerful actors" (Magarini et al., 2021, p. 2). In their review, Magarini et al. (2021) bring forth different theories that aim to explain people's social behaviours: one of the listed theories was *terror management theory*, which explains how people aim to maintain their confidence "in self-esteem and secure attachment" (Magarini et al., 2021, p. 2).

While number of theories explaining actions of people and populist leaders might be correct and beneficial, terror management theory (TMT) sheds meaningful light when examining denialism as a social psychological concept. When searching for more detailed literature examining of TMT within Covid-19 pandemic, one of the

emerged articles was a study by Abulof et al. (2021), whose "mixed-method research on the Covid-19 crisis reveals how pandemic politics cultivates and uses mass existential anxiety" (Abulof et al., 2021, p. 350). Their analysis offers some of food for thought: what if Covid-19 pandemic as a whole has become a global memento mori, symbolic reminder of inevitable death? Abulof et al. (2021) argue that "the Covid-19 pandemic effectively runs a real-life TMT experiment on a global scale"(p. 351), and that their paper's aim is to demonstrate how mortality salience has gone through a noticeable rise globally. One of the main points in their argumentation is that trivialising the threat caused by the virus is a visible action presenting death denial attitude, which does not only take place by populist leaders, but also by the audience that willingly consumes these ideas. Another salient point is the phenomenon of attacking the *other*: when facing the concept of death and mortality, people tend to hold tighter of their inner group, as well as create greater division and bias towards others or other groups (Abulof et al., 2021). This concept of attacking against the *other* links with the notion of Lasco (2020) regarding the creation of *other* within political discourses. Ultimately, through denialist communication, people aim for so-called symbolic immortality by denying the possible threat of death.

While the focus of the study by Abulof et al. (2021) was on the pandemic politics, it might be fruitful to ponder if people's tendency of terror management – and in other words, avoidance of death as a concept – could be behind larger social phenomena such as earlier handled concept of conspirational thinking.

According to the findings of Burni and Tamaki (2021), "[t]he pandemic revealed that in many countries, like Brazil and the USA, beliefs, attitudes and behaviours have been largely driven by political and partisan orientations, further polarising societies" (Burni & Tamaki, 2021, p. 127). They bring forth how similar features combined Bolsonaro and Trump: narrative-wise, actors to be blamed were always those coming from the outside (like China or the WHO), or those who opposed them (including media and journalists). Another tactic was appealing to nationalism. Burni and Tamaki (2021) write that these actions "opened the way for conspiracy and anti-vaccine movements to rise, including in countries where they used to be inexpressive" (p. 127). Therefore, could it be that the driving force behind their communicational actions was the general feeling of anxiety and the need to control it?

Populist rhetorics are – like all phenomena intertwined with denialistic approached towards Covid-19 pandemic – context dependant. When one examines Brazilian society, the local features and people in the political field create their own social reality that is not the same anywhere else. Varying levels of religiosity and religious attitudes can be seen or not seen in the local populist rhetorics. E.g., in the case of President Bolsonaro, he does not only utilise God as part of his rhetorics, but he emphasises the importance of people's personal opinions and experiences in the creation

of knowledge. Generally, the literature – and moreover, scientific community behind it – had similar stances, discussion openings, and research findings regarding President Bolsonaro's actions in the midst of pandemic in Brazil. [E.g., Silva (2020); Burni & Tamaki (2021); Fonseca et al. (2021); and Oliveira et al. (2021).]

In the study by Monari et al. (2020), this phenomenon of knowledge being produced through subjective, personal experience was referred to as *I-pistemology*, where "I" is at the centre of producing knowledge and understanding. This term is coined by van Zoonen (2012). van Zoonen (2012) notes how "[t]he internet is a great multiplier that not only offers easy access to everyone who wants to vent her or his truth, but also enables quicker connections between these truths" (van Zoonen, 2012, p. 64). Therefore, different dimensions of the spreading of false information are (in)directly interconnected: populism-generated denialism includes the concept of echo chamber, since for one's truth to have meaning in and outside the online world, this truth requires others who find this truth pleasing, and further on, suitable to their own worldviews.

While societal contexts differ between places, one conclusion by Magarini et al. (2021) gazes at the larger audiences consuming populist messages: according to them, "[p]articular environmental conditions, social motivations, and psychological processes and predispositions have been proposed to underpin the adherence to beliefs that are not solely the domain of paranoids and extremists, but a widespread phenomenon that cuts across demographic and political differences" (Magarini et al., 2021, p. 2). Therefore, when aiming to understand the features and effects of populist rhetorics, the conditions of receiving audience must be considered, as well.

3.3.4 Former pandemic of HIV/AIDS

The parallels and connections between HIV/AIDS pandemic and Covid-19 pandemic were drawn in emerged articles in both literature searches. However, in the second literature search, this connection was much more apparent across the papers.

Since many pieces of literature were not research papers but journal entries and other scholarly publications, their insights need to be taken as conversation openings or as argumentative opinion papers. These connections included many of the previously handled concepts, due to which this concept in handled much more concisely when compared to them.

As an example, the data produced by the qualitative research based in South Africa by Schmidt et al. (2020) demonstrated that people in the sample were aware of the risks Covid-19 causes to elderly, and to those with compromised immunity to illnesses. However, data also showed that there were misconceptions regarding ways to

protect oneself against the virus, as well as how dangerous the virus is. Above negative emotions (including fear and panic) circulating on the social media platforms, the false data also became a foundation for othering and stigmatization. Research-wise relevant was how participants drew "parallels between HIV-related stigma and stigmatizing responses to Covid-19 as the disease unfolded in South Africa" (Schmidt et al., 2020, p. 12). This stigmatisation targeted especially homosexual individuals. Another important aspect of the stigmatizing narrative in South African context was that it was targeted towards wealthy and white individuals. This was because of their economic capacity to travel abroad, and through this, bring the virus into South Africa from the outside.

Emerged research literature offered various connections between HIV/AIDS and Covid-19 pandemic: these were not only connected to the research field this thesis represents, but also to other fields such as medicine and virology. In their study, Kalichman et al. (2021) point out that in the United Kingdom, HIV-positive people were twice as likely to die due to Covid-19 compared to people without HIV. Shobowale (2021), on the other hand, discusses cumulative historical differences in terms of epidemics, and how African continent had HIV and Ebola epidemics around simultaneously with the new coronavirus disease, and how e.g., HIV epidemic had already created its own issue of false information spreading on the continent. Similarly, Agley and Xiao (2021) point out how the HIV/AIDS pandemic demonstrated how the spread of false information, and moreover, not dealing with it, could lead to "avoidable morbidity and mortality" (Agley & Xiao, 2021, p. 3), and therefore, studying the spread of information and reasons behind this phenomenon is salient.

Emerged scholarly, non-research articles had similar discussion openings, and they also drew parallels between HIV/AIDS and Covid-19 pandemic. E.g., Airewele et al. (2021) emphasise how both pandemics hit the most vulnerable the hardest. Nevertheless, in the beginning of HIV/AIDS pandemic, the victims belonging to the gay community did not receive wide-spread recognition from the large public. Moreover, Airewele et al. (2021) utilise the term *historical amnesia*, referring to the people's tendency to forget past health crises and their effects. To this, Quinn (2020) writes how "we can take lessons learned from the HIV epidemic about the spread of public health information and its effects on behavior change apply them to the current pandemic" (Quinn, 2020, p. 3291). Similarly, Caitlin (2021) brings forth how both pandemics, Covid-19 and HIV/AIDS, started with increased amount of false information that spread through populations, and how this phenomenon led to numerous deaths that could have been prevented, and how the use of *other* emerged during both pandemics. Looi et al. (2021) also add to this by stating how "[c]onspiracy beliefs are prominent in misinformation, disinformation and inequality-driven mistrust, which were evident in AIDS denialism and which present similar challenges in dealing with COVID-

19" (Looi et al., 2021, p. 23). Just as in all previous aspects of denialism and spread of false information, also the parallel between HIV/AIDS pandemic and Covid-19 pandemic is context-dependent. However, some unifying features were brought up in the scholarly articles as well: e.g., Mian and Khan (2020) write how "it is important for governments to be transparent and relay clear, honest information to the public. Public confusion leaves citizens unprepared for combatting a public health crisis. Additionally, it is dangerous for politicians to politicise this pandemic. At times like this, the message from government leaders needs to be consistent so that the public can regain trust in civil servants" (Mian & Khan, 2020, p. 2). This aligns with the many of the articles handling transparency and openness from the side of academia.

What can be concluded is that Covid-19 and HIV/AIDS pandemic have both demonstrated the need for global, quick, and efficient manner of sharing data and beneficial information in order to prepare for next pandemic and epidemics. Professionals of different relevant fields must be included in these programs. Here, features such as general trust towards governing institutions and medical history of certain place must be taken in count. Basing on the literature, it can be concluded that effective communicational actions are mandatory everywhere, but how these are executed depends on the local features and cultures.

4 CONCLUSION

4.1 Limitations of the research

Due to the novelty of this research topic, the number of articles was relatively small, which can be seen as a validity threat for the analysis. While the articles in the two literature searches examine communicational aspects of the spread of mis- and disinformation around Covid-19 pandemic, the set of literature ended up being relatively interdisciplinary. One could interpret this as an exemplification of the interdisciplinary nature of communication field, while it also tells us about the overall novelty of the research topic. Emerged papers were scattered, and the formation of clear unifying is complex. The set of literature also indicates how the spread of false information around Covid-19 pandemic is not only a result of multilayered globalisation processes, but also a phenomenon that is linked to a specific societal context, effecting set of values and culture(s), and geographical region. Simultaneously, it is challenging to draw a unified picture of reasons and meaning-makings behind the spread of false information and denialism around Covid-19 pandemic.

What was apparent across the studies was that different places and different kinds of methodologies resulted differing, and even opposing, findings. E.g., religiosity was not seen as an important factor behind the spread of false information, while on the other side of globe, religious communities and places of worship were the forums where false information and denialist messages were being spread. However, as

expected, the societies and societal structures these studies represented were very different. The scarcity of the picture may be seen as a validity threat of this thesis, and therefore, the predominant focus of this thesis was on the four concepts that connected the articles with each other.

While majority of research data is most likely found in English, this does not erase the possibility of that there are studies – and possibly relevant findings – in other languages. When aiming to have as much relevant literature as possible through singular literature search, one must assess possible word choices and how vast or narrow they might be. It is possible that relevant literature existed within the searched timeframe, but it did not end up in the set of analysed set of literature. Therefore, it would be fruitful to see a similar kind of literature search and review on the data taking place. The second literature search was conducted March 6th, 2022. Therefore, this thesis examines scholarly literature until that date, and possible new, relevant findings might not get included in this thesis by the time it is published.

It can be argued that the increasing number of articles on the topic with same literature search attributes indicate that the research topic is a novel one, and that the amount of research is steadily increasing. This matter increases the validity and usability of integrative literature review (ILR) as a form of literature review for this particular thesis topic.

It can be concluded that instead of understanding mistrust and denialism towards science as a combination of factors among the general public, it might also be beneficial to examine these terms as results or as signals of the lack of transparency from the science community. Even if denialistic stances towards scientific knowledge might apply only to a small proportion of a certain society and its population, these individuals are still part of the whole picture of the pandemic, meaning that the viral spread is reaching the population of the whole globe. Among the introduced and applied theoretical models was the Terror Management Theory (TMT), and how it demonstrates as part of e.g., populistic rhetorics. One could argue that TMT allows to include both fears of the leadership side, as well as on the side of the audience that willingly consumes the ideas through populist rhetorics.

When examining the three research questions, the scarcity of the papers cannot be ignored. When asking what kinds of methods have been applied in understanding the spread of false information and denialism around Covid-19 pandemic, the following can be concluded: scholars have aimed to understand the phenomena around the spread of false information and Covid-19 pandemic related denialism through various different methods, and there was no clear, unifying attributes between them. Nevertheless, the methods were utilized so that enough data could have been acquired through online platforms. However, collecting data remotely is not a major feature

among the studies since the collection of data was collected predominantly during the time of lockdowns around the globe.

When examining the addressed needs for future research by the scholars, major themes included were at least the following: further developing understanding on connections between populism and the spread of false information; further developing understanding on the lack of transparency from the side of academia and researchers, and how this might lead to questioning and denialistic stances among those who – in their societal context – possess attributes that link to the possibility of contradicting scientifically produced knowledge and data; and further understanding how experience of e.g. neglect and possible systemic racism from the side of (health) officials may generate mistrust among people.

When looking at the third research question, it can be said that the brought-up concepts are more or less examining different dimensions and aspects of one phenomenon. Context-dependency applies to majority of the studies. When examining the emerged concepts, e.g., HIV/AIDS pandemic as a concept was directly linked to the phenomenon of infodemics, and therefore it could be seen as one dimension of the same concept. Furthermore, in Brazilian context, the populistic rhetorics of President Bolsonaro included predominantly features demonstrating denialistic approaches towards science community.

4.2 Recommendations for future research

As one of the conclusions of this study, it is important to be aware of that the spread of mis- and disinformation is simultaneously a globalised issue, as well as a localised issue with features generated by globalisation processes. Therefore, it is salient to examine and study the spread of false information in a localised context, and within it, examine how globalisation affects this phenomenon. Nothing happens in a vacuum, disconnected from other social realms, but because we are vastly interconnected through internet and social media platform, the focus of these social realms must be extended to e.g., local community versus the whole region, the nation, or even the whole continent. It can be argued that all societal phenomena require interdisciplinary approach. Therefore, future studies and literature reviews should address this feature already at the literature search planning stage.

Based on the findings of reviewed studies and scholarly papers, it is likely that one can expect false information to be generated in certain socials realms whenever at least one of features can be recognised: a) when health-related matter affects majority of the population and they require large-scale actions, b) when correlation between

actions and results required knowledge and understanding by individuals who do not possess them, and c) when information questions and/or challenges one's already existing beliefs and ideologies.

Recommendations for future research would be to acknowledge societal discussions on different forums and have tools prepared for moments when societally impactful events take place – especially, when situations like these affect majority of population in a country or even within a certain continent, and when these situations require large scale adaptation and/or acquiring and internalising information that is distributed by officials.

4.3 Value in the research

This literature review does not offer clear-cut answers nor solutions for tackling the spread of false information. However, it brings forth different aspects and dimensions of the pandemic that might not be clear or predominant in everyday societal discussion: e.g., when examining the connection between medical mistrust (existing before Covid-19 pandemic) and denialism (towards the vaccine, for example), it becomes elusive who is to be blamed for acting against the greater good for the society. Who are the culprits, and on the contrary, who are the victims? Furthermore, reviewed papers indicate that there is a growing need for transparency and popularization of research processes from the side of academia. Patronizing or ridiculing stances towards individuals only increase the possible denialistic reactions towards research community.

Integrative literature review as a method aims to bring forth and produce new data regarding a research topic. In the case of this thesis process, reaching this goal included diving into formerly used texts that were utilized by the scholars of the literature selected for the two literature reviews. What the literature highlights while examining the connection between populism and denialism is that polarization and simplified divisions into groups of right and wrong are not functioning answers to tackle false information nor discontent within societies. The creation of 'other' (or otherisation) is ultimately a situation that creates more negative effects, dissatisfaction, and in long term, even grudge among people. Also, to be critical towards the findings themselves, the four concepts brought up as the focus of this thesis are loaded with pre-existing ideas and ideologies, and therefore, the concepts need to be handled with care when discussing people's experiences. Moreover, tackling false information has to be done in a manner where people do not feel like they are forced to internalize information and beliefs, but more of offered tools to search and acquire beneficial information themselves. Literature also brings forth how the spread of false information is also highly humane: one's experience of well-being when encountering information

that pleases their view of the world, and the wish to share this knowledge forward, cannot inherently been seen as good or bad.

This thesis works also as a signpost for looking at people's behavior around this research topic from more humane standpoint. E.g., interlinking the matter of the spread of mis- and disinformation to terror management theory can be considered insightful. Therefore we can ponder, could there be a universally applicable theory connecting all of these, even if conducted pieces of research propose differing answers? Could it be so that one of the offered theories could explain even more efficiently the phenomena around the spread of false information and denialist attitudes? While this thesis emphasizes the context-dependency of the phenomenon, interdisciplinary research with e.g., professionals from the field of psychology might offer findings that are able to find more unifying findings, despite societal and cultural circumstances.

To conclude this thesis, it essential to mention that this literature review should be approachable not only by those working and influencing in the academic, but also the general public. The use of English, the *lingua franca*, broadens up possible audience over state lines and even continents. This aligns with the notions of Torraco (2016) regarding the use of language. What can be said about the research topic is that it is novel, and due to this, the amount of research is still growing, and that we might have not achieved saturation of data, neither have we achieved consensus regrading understanding and knowing the reasons behind the spread of false information spreading around Covid-19 pandemic.

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APPENDICES

APPENDIX 1: FIRST LITERATURE SEARCH

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APPENDIX 2: SECOND LITERATURE SEARCH

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