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Exploring expert figures in alien-related UFO conspiracy theories

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This study investigates expert figures' roles in alien-related UFO conspiracy theories, focusing on their impact on public perception through social media analysis. Utilizing a blend of content and trend analysis, we examine the invocation of scientific authority in UFO conspiracy narratives, identifying a reliance on expert endorsement to legitimize claims about extraterrestrial activity and government secrecy. Findings highlight a common use of expert figures, often without empirical backing, to bolster conspiracy theories. The research reveals the challenge of distinguishing credible information from conspiracy in a landscape where expert authority is easily co-opted. This underscores the importance of scientific literacy and critical thinking in combating disinformation. The study's implications extend to educational and policy measures aimed at fostering a skeptical and informed public debate on controversial topics. By exploring the dynamics between authority, belief, and disinformation, this work contributes to understanding the mechanisms behind the spread of conspiracy theories and the complex role of expertise in shaping public discourse in the digital age.

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Introduction

The pervasive belief that covert forces are orchestrating global political and social events is not merely a product of digital folklore, but a reflection of a deeper, conspiratorial mindset that seeks simplistic explanations for the complex machinations of the world. This inclination to attribute intricate scientific phenomena and significant historical events to the machinations of an elusive group finds expression in various theories, ranging from the origins of the COVID-19 pandemic (Kelly 2023) to the motivations behind the 9/11 attacks (Swami et al. 2010). The allure of conspiracy theories is not just in their simplicity (Harambam and Aupers 2015). Despite their often implausible premises, they garner a growing number of followers, driven by an evolutionary predisposition towards such beliefs as a survival mechanism, suggesting a deep-rootedness in human psychology (van Prooijen and van Vugt 2018). The nexus between conspiracy theories and the propagation of misinformation and disinformation is undeniable, primarily due to the lack of verifiable evidence supporting the clandestine occurrences these theories purport (Rubin 2019).

The multifaceted nature of conspiracy theory belief is underscored by a constellation of psychological, cognitive, social, and political factors (Douglas et al. 2017; Dyrendal et al. 2021; Goertzel 1994; Schuster et al. 2023; van Prooijen and van Vugt, 2018). Notably, the quest for uniqueness is identified as a significant motivator behind the embrace of conspiracy theories, offering adherents a distinct perspective on the workings of the world (Bowes et al. 2023). The psychological profile of individuals predisposed to conspiracy beliefs often includes feelings of powerlessness, low self-esteem, social alienation, insecurity in social and employment spheres, skepticism towards authoritative entities, and a sense of disenfranchisement (Abalakina-Paap et al. 1999). This susceptibility is further fueled by epistemic motivations, such as the quest for certainty and control, with conspiracy theories offering seemingly simple explanations for complex occurrences (Douglas and Sutton 2011). Additionally, heightened levels of paranoia and antagonism towards others have been correlated with an increased propensity for conspiratorial thinking.

The role of predispositions in shaping responses to conspiracy-laden information is significant, with Uscinski et al. (2014), noting that individuals devoid of strong partisan biases or pre-existing beliefs about conspiracy theories are particularly influenced by media suggestions of conspiracy. Moreover, conspiracy theories can fulfill social needs by engendering a sense of belonging within groups or communities. This has the potential to unite disparate social factions (Madisson and Ventsel 2020) and facilitate the rapid dissemination of manipulative narratives, as evidenced by the online activities of far-right movements (Marwick et al. 2022). Vulnerabilities to conspiratorial beliefs also intersect with various predispositions, including partisanship (Uscinski and Parent 2014), economic instability (Adam-Troian et al. 2023), and schizotypal personalities (Dyrendal et al. 2021), alongside correlations with paranormal belief and challenges in reality testing (Drinkwater et al. 2012).

This study conceptualizes conspiracy theories as frameworks of alternative knowledge that challenge established scientific discourse (Marii-Liis Madisson et al. 2021). Illuminating the dangers posed by the scientific community's inadvertent legitimization of such theories. The case of Nikolaas Tinbergen, a Nobel laureate who ventured beyond his expertise to advocate for unfounded autism therapy, exemplifies the peril of scientists lending credibility to unsubstantiated theories (Weigmann 2018). This erosion of trust in scientific authority is further exemplified by the persistence of UFO-related conspiracy theories, a domain marked by the engagement of both scientists and lay investigators. The historical account of James Everell's 1639 sighting and the 1938

radio broadcast of "The War of the Worlds," which incited public hysteria (Anton and Vugrin 2022), underscores the enduring capacity of UFO narratives to instigate widespread panic (Whinthrop 2009).

This refined articulation emphasizes the complexity and diversity of factors contributing to the allure of conspiracy theories, highlighting the intricate interplay between psychological predispositions, societal factors, and the influence of disinformation. It also critically examines the role of the scientific community in inadvertently validating conspiratorial narratives, thus contributing to the broader discourse on the impact of such beliefs on public understanding and trust in scientific institutions. We follow the understanding of conspiracy theories described by Douglas and Sutton (2011), who define them as interpretations of major events or situations that suggest they result from secretive, coordinated actions by two or more individuals.

A report published by the All-domain Anomaly Resolution Office (AARO) in February 2024 (AARO 02.2024), reviewing the record of the United States Government (USG) on unidentified anomalous phenomena (UAP), has proven that there is no evidence of extra-terrestrial intelligence or alien spacecraft hidden by the government. Moreover, the investigators found out that most of the reports confirming UFOs are a result of misidentification and misinterpretation.

AARO found no evidence that any USG investigation, academic-sponsored research, or official review panel has confirmed that any sighting of a UAP represented extra-terrestrial technology. All investigative efforts, at all levels of classification, concluded that most sightings were ordinary objects and phenomena and the result of misidentification (AARO 02.2024).

Moreover, even though the American government investigated many cases of UFOs, there has not been found any evidence of extraterrestrial technology, but there have been some unexplained UAP sightings. A thorough discussion of UAPs should therefore acknowledge two key realities: the absence of definitive evidence and the lack of clear explanations. This balanced perspective helps clarify why these phenomena continue to intrigue both the public and the academic community.

So far, alien conspiracy theories have been studied through the prism of change in UFO discourse (Anton and Vugrin 2022), pop culture and media phenomena, and distrust of authorities in the USA (Ellwood and Dean 1999), interpreting UFO as a contemporary religion (Pasulka 2019) or a myth (Wojcik 2021) and many more. Nevertheless, there is a research gap in the field of online UAP discourses and the role of experts in authenticating aliens' existence.

In this paper, we address UFO-related online narratives in the context of rhetorical structures. We aimed to study the role of experts, interpreted as scientists, self-researchers, and UFO witnesses in creating and justifying the UAP-related conspiracy and disinformation. Moreover, this study was used to examine, how false narratives can be empowered by the invocation of authority.

To achieve this research goal, we stated the following research questions:

RQ1: What is the expert figure in conspiracy theory regarding UFOs?

RQ2: What is the role of experts in authenticating conspiracy theories about aliens?

Characteristics of the conspiracy rhetoric in the UFO discourse

Although fields of conspiracy theories and online disinformation have been getting more attention recently, in the sphere of

rhetoric and narratology exist research gaps regarding how senders build their misleading messages referring to science. Conspiracy rhetoric has been described as *a struggle to define the grounding of discourse* (Goodnight and Poulakos 1981), which can be interpreted as a constant war to win public opinion with manipulative, anti-scientific, and disinforming content.

Nevertheless, van Prooijen and van Vugt (2018) suggest that psychological studies can bring many advantages to the studies about conspiracy theories. The authors also mention, that conspiracy-believing is not necessarily a pathological behavior, but can be present among ordinary citizens. For instance, Bowes et al. (2023) provides a comprehensive meta-analysis of the psychological and motivational factors associated with conspiratorial ideation. It must be stated that, in order to fully understand the characteristic of conspiracy theories, we should address both individual and societal-level factors in mitigating the spread of them, such as, intuitive thinking, weak reasoning skills or perceptions of existential threats.

On the other hand, there have been found significant relationships between conspiracy theories and paranoia and trust (Bowes et al. 2023). Moreover, Biddlestone et al. (2025) found out conspiracy beliefs are associated with *cognitive styles that rely on intuition, poor reasoning ability, existential threats (particularly from the world around us and in society), alongside efforts to defend the self-image and the image of the ingroup* (Biddlestone et al. 2025, p.21).

Whereas, UFO-related content is a catalyst of postmodern anxieties, especially in the USA (Ellwood and Dean 1999). Moreover, the spread of abduction stories is linked with the feeling of insecurity and is a continuation of the thought that government is unable to protect the citizens from danger.

On the other hand, UFO conspiracy theories can be interpreted as a form of myth, expressing the need to explain the complexity of the universe. According to Wojcik (Wojcik 2021), UFO cosmologies are etiological knowledge systems that clarify the meaning of human existence. The reason for following such a theory is being overwhelmed by the vastness of the universe.

Conspiracy theories usually rely on rhetorical tactics to persuade their audience with blurred photos and witnesses' testimonies. In light of the strong presence of the alien theme in pop culture, not much has to be made to convince the public that UFOs exist and are not imaginary visions invented by directors and writers. Cognitive errors are significant for conspiracy-believing. Due to heuristics (Kahneman 2011) such as confirmation bias, mere exposure effect, and manipulative messages, people are eager to believe in mystical creatures from the universe. Another cognitive error connected with conspiratorial thinking is my side bias (Weigmann 2018), which, similarly to confirmation bias, is a concept based on favoring arguments that confirm existing beliefs and disregarding anything that raises uncertainty.

Furthermore, Goodnight and Poulakos pointed out that in the first stage of conspiracy-believing individuals share a concern or puzzle, not a clear conclusion (Goodnight and Poulakos 1981). Those suspicions may be empowered by other believers spreading fake news about mystical events. Even if the government provides official testimonies providing rational explanations, suspicions may be continued.

In COMPACT's report, there are distinguished two rhetorical strategies used in conspiracy theories (COMPACT Education Group 2022). The first one is based on providing evidence for ridiculous and misleading events while ignoring all the evidence. The second tactics discredit the officials' explanation of events by finding errors in their messages. It is called the rhetoric of *just asking questions* (COMPACT Education Group 2022). In the UFO discourse, both of these strategies have been used.

However, our main interest in this article is how the figure of authority is used in the message to enhance the conspiratorial narrative. Citing experts and following their judgments are linked to the halo effect. It is a cognitive error that Kahneman (Kahneman 2011) described as *the tendency to like (or dislike) everything about a person—including things you have not observed*. Due to the halo effect, people tend to believe that scientists as authorities provide insightful and research-based views, even if they share opinions outside their research field.

Moreover, experts expressing their opinions from an ex-cathedra create a vision of authority. They are self-confident in citing research and examples, so that public opinion may perceive all of their insights are valuable and well-thought. However, as Weigmann (Weigmann 2018) points out, scientists are also prone to confirmation bias, but they are more persuasive, because of the ability of logical reasoning.

Moreover, conspiracy theorists refer to science authorities and their expertise, to build the audience's trust Marii-Liis Madisson et al. 2021. This was also observed in the context of one of the most prominent conspiratorial theorists, Alex Jones, who invited a "security expert" to provide arguments for the hoax of the Sandy Hook case, in his broadcast.

In the previous discursive analysis, of COVID-19, researchers implemented Diatextual Analysis and Discursive Action Model with a focus on classical Aristotle's rhetoric division of logos, ethos, and pathos (Scardigno et al. 2023). Such an approach is useful to examine the rhetorical structure of analyzed communication (Fig. 1).

Nowadays, we are facing a new challenges related to fake news and disinformation generated with the use of AI, so scientists justifying hoaxes and conspiracy theories are even more dangerous for public debate. Such utilization of the authority figure in fake news may persuade parents not to vaccinate their children because they believe that there is a link between vaccination and autism spectrum disorder. The discourse started after the publication of a fraudulent research paper titled "Ileal-lymphoid-nodular hyperplasia, non-specific colitis, and pervasive developmental disorder in children" (Wakefield et al. 1998). The authors claimed to present a link between the MMR vaccine (a trivalent vaccine against measles, mumps, and rubella) and the onset of non-specific colitis, subsequently leading to autism. The study described 12 cases of children with developmental disorders. It also suggested an alleged link, which the parents of 8 of these children believed to exist, between the MMR vaccination and the observed developmental disorders. The study and its results were retracted by The Lancet and the scientific consensus regarding the relationship between vaccinations and autism is unequivocal

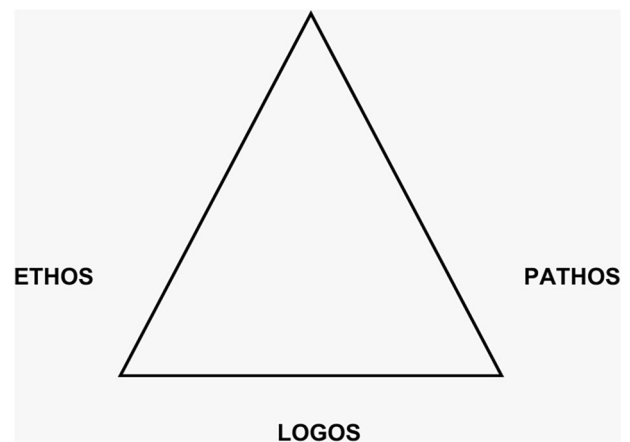


Fig. 1 Aristotle's rhetorical pyramid.

and remains unchanged—there is no link between vaccinations and autism (DeStefano et al. 2013; Gabis et al. 2022; Hviid et al. 2019). However, the anti-vaccination arguments are still used to rationalize the prevalence of children's autism spectrum disorder by their parents (Pivetti et al. 2020). Moreover, the discourse was also visible during the COVID-19 pandemic with tweets containing the hashtag #AstraZeneca, revealing that the most widely shared tweets were those containing negative information about the British-Swedish vaccine (Jemielniak and Krempovich, 2021).

Methods

To better understand the public discourse surrounding UFOs on social media, this study employs a hybrid methodological approach, integrating both qualitative and quantitative analyses of X platform (formerly Twitter) posts. The adoption of computational methods, alongside traditional content analysis, facilitates an exhaustive examination of the voluminous data derived from social media platforms, enabling researchers to distill complex patterns and narratives from the digital chatter (Ducheneaut et al. 2010; Ganczewski and Jemielniak 2022). This dual-pronged strategy aligns with the principles of the Thick Big Data method, which advocates for a depth-oriented approach to the analysis of large-scale digital data sets, ensuring a robust methodological foundation for the study (Jemielniak 2020).

The integration of this methodological framework underscores the study's commitment to harnessing the comprehensive insights that big data analytics can provide, bridging the gap between quantitative breadth and qualitative depth.

To further enrich the research design, the study incorporates an analysis of contemporary media narratives on UFOs, juxtaposed with trend analysis via Google Trends. Google Trends is a tool renowned for its capacity to reflect public interest and attention across various topics (Jun et al. 2018). This component of the study leverages the unprecedented access to public sentiment afforded by digital platforms, echoing the growing recognition of online data sources as invaluable resources for understanding shifts in societal interests and concerns (Nuti et al. 2014). By meticulously tracking search trends related to UFOs and associated phenomena, the research taps into a real-time barometer of public curiosity and engagement, offering a dynamic view of how such interests evolve. This approach is grounded in the methodological rigor suggested by Mellon (2013), who emphasizes the importance of contextual validation in digital data analysis to ensure the accuracy and relevance of the insights gleaned. Specifically, the study scrutinizes search trends for keywords including "UFO," "alien," "NASA," "reptilian," and "extraterrestrial," distinguishing between global and national contexts and correlating these trends with media reports over a specified period (30 October 2022 to 30 October 2023).

This strategic analysis framework is designed to capture the multifaceted nature of public engagement with UFO-related content, providing a comprehensive snapshot of the digital landscape surrounding this phenomenon.

Our research design consisted of the following elements:

- I. Google Trends analysis.
- II. Data scraping & Thick Big Data Method.
- III. Content analysis.

By methodologically combining content analysis, computational techniques, and trend analysis, the study sets a comprehensive stage for the in-depth examination of UFO discourse on social media. This methodological amalgamation not only underscores the study's innovative approach to digital data analysis but also establishes a solid foundation for the subsequent exploration of public conversations and narratives about UFOs

on platforms like X (formerly Twitter). The meticulous integration of diverse data sources and analytical techniques reflects a commitment to capturing the complexity and dynamism of digital public spheres, positioning the study at the forefront of contemporary research into social media discourse and public interest phenomena.

In the next step, we used Thick Big Data Method, employing our own Python script and scraped posts from the X platform (formerly Twitter) to study the patterns and narrations that occur in communication about UFOs. For scrapping, we have chosen hashtags directly connected with the subject of the analysis: #UFO (117 k of Tweets), #UFOsightings (21 k), #Aliens (79 k), and #UAP (66 k). The collected data were set in the timeframe of March 2022 to November 2023. From each hashtag, we extracted samples of the 25 most liked, English-language Tweets (100 in total) including the keywords: expert(s), and scientist(s).

Thereafter, each Tweet was analyzed in terms of popularity, including content such as pictures, videos, memes, URL links, rhetorical means, main subjects, pro-UFO arguments, main emotions linked to the content, type of expert—UFO-witness, scientist, self-explorer, other, presentation of experts with the visual elements. Each section contained questions and categories, which were later used for a thorough narrative and rhetorical analysis.

In our content analysis—focusing on rhetoric, we followed Aristotle's division of speech (Rapp 2022): logos (arguments in narration), ethos (credibility—subjectivity vs objectivity), and pathos (emotional sphere). This method allows us to closely examine the construction of UFO-related messages. This research method is also followed by the discursive strategies distinguished to develop and construct conspiracy theories (Kou et al. 2017).

Aristotle's works have also been utilized in the analysis of modern political rhetoric (Wróbel 2015). Further, Aristotle's triad serves as a traditional framework for analyzing and crafting persuasive communication, making it highly applicable in rhetorical and narrative analysis. In our study, we have created a coding key, including information about: the type of expert (1. Scientist, 2. UFO-enthusiast, 3. UFO-witness, 4. other), the main subject of the message, emotions, main pro-UFO arguments, rhetorical means used by experts, emotions and visual elements of each tweet, as well as appearance of expert. The category of the main subject was created as a part of inductive coding, thus after the analysis of half of the sample we distinguished six options: 1. media news about aliens, 2. interview with expert / expert's quotation, 3. witnessing UFO, 4. pop culture, 5. discovery in Mexico, 6. other.

Furthermore, we were able to map the narrator's role in creating the UFO-related conspiracy theories. We follow the understanding of Jannidis (Jannidis, 2003), who claims that the narrator is the source of the discourse, one of the *meaningful structures of a narrative*. Thus, experts sharing their views on UAP, either explaining and debunking alien-related conspiracy or justifying them, are sources of this discourse.

Analysis

The evaluation of data gathered from 100 posts from X provides insightful trends and patterns regarding the studied discourse. A key aspect of this study involved categorizing the content types and subjects to understand the nature of these UFO-related conspiracy theories. Out of the 100 posts analyzed, 83 included pro-UFO arguments with "evidence", which is associated with logos, based on pictures or videos/articles with comments from scientists believing in the UFO phenomena.

Our primary topic of interest was expert figures in the UFO discourse. According to the analysis, almost half of the posts

Table 1 Division of persuasive means with examples from content analysis.

Aristotle's category	Example
Ethos	Einstein's Student Physicist Robert Sarbacher confirmed that scientists Vannevar Bush, von Neuman & Oppenheimer were involved in UFO re-engineering. #UFOtwitter #UAPtwitter #UAPs #UAP #UFOs #UFOsightings.
Logos	Interdimensional aliens coming from other physical realities... Everything is vibration and frequency, and according to some scientists changing, that can shift you in different reality. #Aliens #UFOs #UFOsightings #UFOHearings #disclosure #uaphearings #UAPs.
Pathos	Respect is a two-way street. The public is not being respected when it comes to the intense government secrecy surrounding #UAP for the past 75 years, and ridiculous, highly-problematic over-classification of the topic. The message it sends to scientists, including young people beginning their careers, when @NASA doesn't even announce the name of the agency's UAP investigator, and this person won't show up for the press conference, or show their face on TV? This is so, so damaging. It says, don't touch this topic with a 50-foot pole. It says that loudly and clearly. You're beating the drum of "transparency" and "defeating the stigma" surrounding UAP, and then sending very different messages. I'm glad the person has been named. Maybe they'll do their job a little better, now that the public knows who our tax dollars are even funding to head this inquiry, and we can hold accountable. US voters, if you're totally frustrated by this, please take 30 seconds of your time and go to DeclassifyUAP.org/action , and tell your elected officials to end government UAP secrecy. Then share and get more people onboard. We need to send a message that enough is enough, and we need to do this in numbers.

($n = 48$) included a figure of reputable scientists sharing pro-UFO arguments. In some cases, scientists were linked with organizations such as NASA where they are hired or used to be hired as space researchers. Some of the scientists were affiliated with the natural science of matter—Physics—or with research of everything in the universe beyond the Earth—Astronomy. However, few of the scientists mentioned were linked with disciplines such as IT, Management, Law, Medicine, etc.

A significant number of the posts incorporated multimedia elements. Out of the 100 posts analyzed, 35 featured videos, and 40 showcased pictures, indicating a strong preference for visual content in the dissemination of UFO-related information. This trend underscores the importance of visual aids in enhancing the persuasiveness and appeal of conspiracy theories.

More remarkably, 72 of these posts included testimonials or statements attributed to scientists confirming the existence of UFOs. This high number highlights the tendency of conspiracy theories to leverage the perceived authority of scientific figures to gain credibility. However, it is critical to note the difference between mere claims of scientific validation and actual scientific consensus. However, it has to be stated that individual testimonies of individual scientists, do not reflect common, scientific findings.

The content of the posts predominantly revolved around six main subjects. The most frequent subject was media news about aliens, accounting for 31 of the posts. This finding suggests that mainstream media plays a significant role in shaping public perception and discourse regarding alien-related conspiracy theories. Interviews with experts or quotations from them were the focus of 39 posts. The prominence of expert figures in these discussions reinforces the notion that authority figures are instrumental in influencing the beliefs and opinions in the realm of UFO conspiracy theories. Only 6 posts were accounts of witnessing UFOs, and another 6 were related to pop culture references. The relatively low frequency of personal encounter stories may imply a reliance on second-hand information and the influence of cultural narratives over direct experiences. Interestingly, only a single post specifically discussed UFOs in Mexico, indicating geographical biases or particular local interests within the conspiracy community. Lastly, 16 posts fell into the “other” category, indicating a diverse range of topics that did not fit neatly into the predefined subjects. This diversity reflects the complex and multifaceted nature of alien-related UFO conspiracy theories.

Surprisingly, in the sample we have found 26 polarized posts, negatively referring to: debunkers or skeptics (*basing their judgments on old knowledge*), the US government (described as: *bad, afraid, lying, hiding secrets*), police, other scientists. The implication is that the researched discourse promotes distrust of authorities—both traditional scientists and governmental bodies.

There were also found several examples of speech for each category of the pyramid (Table 1). We have noticed that the category of ethos was in the majority used to cite experts’ opinions or testimonies on the UFO case. Meanwhile, logos appeared in posts citing data and simple explanations and evidence of the aliens’ existence.

Overall, this analysis sheds light on how expert figures and media are leveraged in UFO conspiracy theories. The reliance on visual content and the invocation of scientific authority are particularly noteworthy, suggesting strategies employed by proponents of these theories to validate and disseminate their beliefs.

Results

The exploration of UFO-related discourse on the X platform unveiled nuanced dynamics in how information, authority, and belief intermingle, painting a multifaceted picture of the engagement with unidentified flying objects within digital spaces. Initially, an overarching preference for emotional persuasion (pathos) over logical argumentation (logos) emerged starkly from the data. The discourse frequently leveraged the authority of scientists or experts without grounding claims in concrete evidence or referencing specific scientific publications. This rhetorical strategy emphasizes emotional engagement over critical scrutiny, with mentions of “research” by cited scientists often lacking transparency or detail, reducing the invocation of “scientist” to a mere appeal to ethos devoid of substantial proof (Walton 2010; Toulmin 2003). Thus, it is clear that essential part of the UFO-related conspiracy theories are utilizing the experts’ authority, scientific language, as well as emotional content and questionable evidences of aliens. It should be emphasized that also the strategy of “just asking questions”, which often discredit scientific institutions, can be used to spread skepticism but also erodes public confidence in mainstream science. This strategy can bolster in-group cohesion and lead to confirmation bias by framing believers in UFO theories as part of a “truth-seeking” collective. Previous research has highlighted that learning about the strategies of spreading conspiracy theories and their features can result in campaigns and interventions improving the abilities of spotting untrue and unreliable online content (Basol et al. 2020).

Moreover, the investigation revealed active scientific interest in UFO phenomena, with some scholars acknowledging their existence or expressing a desire to study them further. This engagement has been co-opted by UFO proponents to lend credibility to claims of UFO sightings, often buttressed by visual evidence or self-identified researchers within the community. However, the analysis identified a tendency to exaggerate or misrepresent scientific statements, transforming general observations into

Table 2 Key elements in the UFO-related conspiracy theories.	
Elements of UFO conspiracy theories	Implications
Relying on the expert authority	The analyzed posts reveled, that experts' authority was often used to exaggerate some statements or lend credibility to UFO or alien-related claims. Citing scientific results enhances the credibility and exaggerate the legitimacy of false claims, making them more convincing to the audience.
Emotional language	Use of pathos (emotional language) persuade the receivers and enhance their emotional engagement to the content, leading to increased sharing and virality of conspiracy theories.
"Just asking questions" strategy	Discrediting institutions and spreading distrust in science and authorities. Blurring lines between scientific evidence and anecdotal, unreliable claims.
Utilization of photos and videos - visual content	Multimedia attached to text are enhancing the persuasiveness and credibility of posts.

unfounded confirmations of UFO existence (Barkun 2013; West and Sanders 2003)

A notable rhetorical tactic within the UFO discourse is the employment of a “just asking questions” strategy, designed to erode trust in established scientific principles without overtly espousing conspiracy theories. This method creates a veneer of skepticism while sowing doubt and distrust, effectively challenging the veracity of scientific knowledge under the guise of inquiry (Uscinski and Parent 2014).

The categorization of “experts” in the UFO discourse extends beyond the scientific community to encompass UFO witnesses and journalists, whose testimonies are often treated with a degree of credibility akin to scientific evidence. This expanded notion of expertise encompasses a diverse array of experiences, from civilian encounters to reports by military personnel, each contributing to the narrative’s authenticity and depth (Dean 1998; Peebles 1991).

Additionally, an analysis of the portrayal of experts cited by the UFO community revealed a predominant representation of white males aged between 30 and 60, typically depicted in professional attire or lab coats, suggesting a stereotypical image of authority and expertise. Conversely, female representation was minimal and often relegated to the role of UFO witness, except in rare instances of caricatured or demeaning portrayals. This gendered depiction underscores entrenched stereotypes of scientific authority and professionalism (Flicker 2003).

In sum, the findings illuminate a sophisticated interplay of rhetoric, authority, and belief within the discourse on UFOs, underpinning a complex web of narratives that, despite often lacking convincing empirical backing, wield significant influence within certain segments of the community (Table 2). This intricate relationship between knowledge, belief, and persuasion highlights the pivotal role of rhetoric in shaping public perception and discourse in the digital era, reflecting broader themes of trust, credibility, and the construction of scientific authority (Jasanoff 2011; Latour 1987).

Discussion

The exploration of expert figures within UFO-related conspiracy theories highlights a nuanced intersection between authority, credibility, and the propagation of speculative narratives. The pervasive invocation of scientific authority observed in our analysis echoes findings from Douglas et al. (2017), who noted the profound influence of perceived expertise on the endorsement and spread of conspiracy theories. This dynamic underscores a societal tendency to conflate expertise with credibility, a phenomenon starkly visible in the realm of UFO conspiracy theories, where speculative claims frequently gain legitimacy through the association with scientific credentials (Harambam and Aupers 2015; Barkun 2013; West and Sanders 2003). Such practices not only muddy the waters of scientific discourse, but also elevate unfounded narratives to the level of credible theories, posing

challenges to public understanding of science. Our research expands the context of conspiracy theories research with the factor of experts’ role in authorizing such content. Further, we must highlight that there is a need for further exploration of utilizing scientific language, discoveries and authority of science for the propagation and authentication of conspiracy theories in social media.

As Wojcik suggests, UFO-related conspiracy theories can provide answers to questions related with various societal crises and provide a vision of an extraterrestrial experience (Wojcik 2021). Such mythologies are related to the sphere of pathos - emotional aspects contained in the posts. The answer to existential fears may be contained in conspiracy theories that fuel fear or anger at official institutions hiding the truth about the world. This study’s insights into the portrayal and utilization of expert figures in UFO discourse underscore significant challenges in distinguishing legitimate scientific discussion from speculative or misleading narratives, particularly in the digital media landscape. The rapid dissemination of information, irrespective of its accuracy, amplifies the challenge of combating disinformation, which poses significant risks to public health and safety, notably in areas like vaccination and climate change denial (Lewandowsky et al. 2017; Rubin 2019; Neff et al. 2021). It is also significant, that scientific expertise can be used to amplify the existing beliefs and lead to confirmation bias. In the era of a rapid development of AI and deep-fake technologies, we should be aware that it is much easier to create a photo or short video of UFO landing or aliens visit. Such multimedia can be used to lend credibility to the conspiracy theories being spread on social media. The findings highlight the urgent need for enhanced scientific literacy and critical thinking among the public, necessitating concerted efforts from educational institutions and policymakers.

Our methodological approach, marrying content and trend analysis, offers a comprehensive lens through which the influence of expert figures on UFO conspiracy narratives can be understood. This dual-pronged strategy reveals the complex mechanisms through which expertise is wielded to bolster speculative claims, serving as a potential model for future investigations into disinformation across various contexts, and using diverse methods (Ducheneaut et al. 2010; Nuti et al. 2014). However, the study’s focus on a singular social media platform limits the generalizability of our findings. Future research could expand this scope by incorporating a diverse range of digital and traditional media sources, providing a more holistic view of how expertise shapes public discourse around contentious scientific issues (Pamuk 2021; Okruszek et al. 2022). It should be also noted that our observations align with previous studies connected with exploration of authorization of conspiracy theories (Weigmann 2018). Thus, it is another example of reconstructing the figure of experts and institutional distrust in favor of conspiracy theories.

Given the pivotal role of expert figures in conferring legitimacy to UFO conspiracy theories, developing strategies to represent

scientific consensus and expertise in public discourse accurately is paramount. Initiatives aimed at debunking disinformation and enhancing public engagement with science, such as science communication training for researchers and digital literacy programs, could mitigate the influence of unfounded conspiracy theories. Moreover, examining the psychological and social drivers behind the endorsement of conspiracy theories could inform interventions designed to build resilience against disinformation (Swami et al. 2010; van Prooijen and van Vugt 2018). This multifaceted approach not only addresses the immediate challenges posed by UFO conspiracy theories but also contributes to a broader strategy for fostering a well-informed and skeptical public discourse.

Data availability

The datasets generated and/or analyzed during the current study are not publicly available due to the nature of social media data containing potentially sensitive information. Data has been collected through Twitter API's.

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ML: main idea, conceptualization, theoretical framework, writing up, content analysis, and coding. NK: conceptualization, theoretical framework, writing up, content analysis, and coding. DJ: methods design, data gathering, writing up, manuscript revision.

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The authors declare no competing interests.

Ethical approval

Ethical approval was not required as the study did not involve human participants.

Informed consent

Informed consent was not required as the study did not involve human participants.

Additional information

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