Learning from the Ex-Believers: Individuals' Journeys In and Out of Conspiracy Theories Online

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Conspiracy theories in online spaces, such as anti-vaccination or QAnon, present a unique amalgamation of misinformation, disinformation, and propaganda disguised in entertaining, attention-grabbing content that may appeal to peoples' cultural, moral, or social identities. Studies aiming to understand how people may engage with conspiracy theory content online, or how they may lose belief in conspiracy theories often approach research from a purely theoretical or empirical point of view. In this work, through in-depth interviews with former believers of more than 12 conspiracy theories, with experiences across almost two decades and numerous online platforms, we aim to contribute an understanding of how various online and offline factors synergize to shape a user's engagement, tenure, and disengagement in online conspiracy theorizing. We further investigate how some users recover from conspiracy theorizing with the help of online recovery communities. We find how pre-existing biases and predispositions towards conspiracy theorizing often carry over in online spaces where a user's conspiracy theory worldviews further evolve through content recommendations, interactions in online communities, and socially-primed self-reflections. We also find reasons, such as exposure to inconsistencies in theories or toxicity and anti-social attitudes in online spaces, through which users get disillusioned from conspiracy theories. Our work has implications in bringing forward often unobserved impacts of internet-mediated conspiracy theorizing on the believers—the resulting mental health issues such as depression, distrust and anxiety, and social isolation—which is comparable to the indoctrination trauma. Moreover, our interviews reveal an important role played by online communities in helping users recover from conspiracy theory beliefs by finding empathy and solidarity in fellow former believers. We conclude by providing a path forward for how social computing researchers can contribute online community designs that aid existing issues surrounding safety, inclusivity, and lack of resources in existing online conspiracy theory recovery communities.

CCS Concepts: • **Human-centered computing** → Social media; *User studies*; **Empirical studies in collaborative and social computing**.

Additional Key Words and Phrases: conspiracy theories, social media, social networks, ex-believers

1 INTRODUCTION

> *I had this existentially crushing, devouring depression, having to deal with the fact that I was lied to, and that I was lying to others*—former 9/11 truther, false flag, and reptilian conspiracy believer.

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Ali [1], a former believer in the 9/11 truther movement [2] disclosed how their journey in and out of the conspiracy theories in online spaces had severe consequences on their mental health and social connections. Going even further, Blair describes their tenure in Reddit's alt-right subreddits as a toxic, abusive relationship, filled with paranoia and anger. May it be socially divisive theories about Pizzagate or anti-vaccination, or belief in theories prophesying reptilian overlords, the public sphere of social media is inundated with conspiracy theories compromising civility and mental health in online spaces. Conspiracy theories can not only induce panic and distrust but can also facilitate disruptive offline mobilization of online participants, as is evidenced by recent riots at the U.S. Capitol in Washington, D.C. [21], the QAnon splinter JFK resurrectionist cult in Dallas [23], numerous instances of incitement and threats of conspiracy-motivated violence [15, 43, 47, 58], or growing vaccine hesitancy across the globe triggered by rampant anti-vaccination conspiracy theories [74].

On the one hand, prominent theories on conspiratorial belief adoption study individuals isolated from their social media lives. For example, existing research—both, contemporary and from the pre-social media era—theorizing the role of paranoia, emotionality [12, 24], cognitive issues [13], or various personality traits [66] ignores an increasingly evident role of the Internet in conspiracy theorizing. The few studies investigating the role of the Internet either rely on point scale-based survey questionnaires or focus on a single conspiracy theory [2, 46, 79]. On the other hand, empirical research investigating users' online journeys through conspiracy theories [37, 44, 56, 57] misses out on the role of broader offline context, or the unobservable online actions such as lurking or passive content consumption. For example, previous empirical studies investigating social factors and roles in joining conspiracy theory discussions [56, 62], or evolution of conspiracy theory worldviews [37, 57] mostly rely on digital traces of anonymous online accounts focusing on individual social media platforms. In this paper, we first aim to bridge the gap between theoretical and empirical research to provide a joint understanding of how peoples' online and offline circumstances motivate their journey inside the Internet's conspiracy theory world. Specifically, we first ask:

RQ1: How and why do users engage with conspiracy theories online?

- **RQ1a:** What motivates users to engage with conspiracy theories online?
- **RQ1b:** How do users' conspiracy theory worldviews evolve online?
- **RQ1c:** How are users impacted by engaging with conspiracy theories online?

Through in-depth interviews with 15 former conspiracy theory believers, we provide insights about how various factors such as socio-technical systems, individuals' psychological predisposition, their existing cultural and religious context, and occurrences of external world events shape users' tenure in online conspiracy theory discussion spaces. Our interview participants held beliefs across a range of theories such as QAnon, Illuminati, New World Order, flat Earth, 9/11 truther, and anti-vaccination. They also have experiences on a range of platforms—image boards (4chan, 8chan), Reddit, Facebook, YouTube, Voat, Discord, Twitter, Myspace, Telegram, Instagram, TikTok, and other smaller forums—that influenced their conspiracy theorizing. In RQ1, we focus on the participants' joining and continued engagement with conspiracy theory content and communities online. For example, we discuss the participants' cultural and religious backgrounds, financial and social situations, and their engagement with various online spaces at the time of forming the conspiracy theory belief. We also inquire whether (or not) participants experienced changes in their social life and attitudes toward social issues as a result of adopting conspiracy theory beliefs. Our findings document various factors responsible for initial and continued engagement into conspiracy

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[1]Names are anonymized

[2]Please find the description for this and other conspiracy theories in the Appendix Section A.1

theory beliefs (Section 4.1), such as participants' predisposition and vulnerabilities, the effect of tech-enabled content recommendations, social influence, and world events. We further provide insights into the socio-psychological consequences of engagement in conspiracy theories online (Section 4.3).

As important as it is to understand how and why people engage with conspiracy theories online, equally impactful research exploration is to understand what makes them leave. Given how conspiracy theorizing has the potential to radicalize believers [4, 22, 41], it is crucial to understand factors that may be contributing to the loss of belief in extreme ideas. The process of losing belief in conspiracy theories is largely understudied. One interview study by Xiao et al. [79] explores how collective sensemaking may function as a device for rejecting belief in chemtrail conspiracy theory. Another large-scale empirical study observed how disclosures of cognitive dissonance with QAnon are followed by reduced engagement in Reddit QAnon discussions online [55]. In this paper, we build on the existing works to explore the interplay of how offline and online factors affect disengagement across multiple conspiracy theories and social media platforms. Moreover, we also extend our investigation to users' experiences after the loss of conspiracy theory beliefs and ask:

RQ2: How do users disengage and recover from conspiracy theories online?

- **RQ2a:** What motivates users to disengage from conspiracy theories?
- **RQ2b:** How are users impacted by disengaging from conspiracy theories online?
- **RQ2c:** How are users impacted by engaging in recovery spaces online?
- **RQ2d:** What are the challenges for disengagement or recovery from conspiracy theories online?

In RQ2, we explore the specific points of fracture that led participants to disengage from conspiracy theories along with their recovery after disengagement. We inquire about the role of technology, social connections, and personal events that could have affected their disengagement from conspiracy theories. We further investigate the social and psychological consequences of losing the conspiracy theory belief. Finally, given that the process of recovering from extreme views can be mentally taxing and exhausting we investigate various factors that helped or harmed the participants in their process of recovery. We inquire about the role of technology and social support in their recovery process. We find processes through which participants started critically reflecting on their own conspiratorial thinking and outline how they found ways—either through online communities or offline surroundings—out of the conspiracy theory belief (Section 5.1). Our results align with previous theoretical models of group exits such as cognitive dissonance [18] and role exit [17] where users got disillusioned from conspiracy theory beliefs either through counter information or ideological misalignment. As a result of exiting conspiracy theory belief, participants experienced improved mental health despite increased social isolation for some, with increased desires to consume diverse content they produce and consume (Section 5.2). When engaging in online recovery spaces, participants found social support from their community, despite facing online abuse (Section 5.3). We find that online-mediated recovery, particularly in the context of online communities, would benefit from increased investment and assistance (Section 5.4). For example, communities such as r/ReQovery[3], self-described as *"A forum for ex-QAnon believers to vent, receive emotional support, and share news and commentary about QAnon"*, offer space for former conspiracy theory believers to share their stories and support others. Former conspiracy believers are drawn to these communities seeking to both give and gain support, where they experienced improved social interactions, yet faced the threat of targeted abuse.

Our research contributes a crucial insight into how technology and users' offline circumstances together affect their disengagement from conspiracy theory discussions. Our work can further help

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[3]https://www.reddit.com/r/ReQovery/

understand how online spaces could be improved to support recovering users and build inclusive, welcoming communities for those who want to exit their conspiracy theory beliefs. For example, we outline the existing safety and governance problems faced by recovery community members and suggest design considerations that could be invested in creating safe spaces to share trauma and recovery from conspiracy theorizing. Moreover, our research can motivate future explorations highlighting the harms of conspiracy theorizing by drawing parallels between our findings and cognitive, affective, and function issues resulting from indoctrination trauma.

2 BACKGROUND

The current social media landscape presents a complex ecosystem where users' engagement with conspiracy theory content and communities, and later disengagement, could be affected by a combination of various technological, social, cultural, epistemic, or psychological factors. First, we compile existing literature describing the initial participation (Section 2.1.1) and evolution (Section 2.1.2) of conspiracy theory worldviews, along with various empirical studies investigating users' journeys in online conspiracy theory discussion communities (Section 2.1.3). We next discuss the limitations and opportunities provided by prior studies on conspiracy theory engagement and outline how our work enriches the current understanding (Section 2.1.4). Second, we present various research works and theories (Section 2.2.1) on exits from extreme beliefs and describe how online communities have been used increasingly to support users in recovery from extreme ideas (Section 2.2.2), before stating how our work bridges gaps between existing research streams on disengagement from conspiracy theorizing (Section 2.2.3)

2.1 Conspiracy Theory Engagement: Motivations, Worldviews, and Impact

Conspiracy theories are attempts to explain the occurrence of an event as a covert plot orchestrated by secret organizations [5]. What motivates people to engage in online communities that discuss conspiracy theories? How do their conspiracy theory beliefs evolve over time? Below we present existing theoretical models and empirical research investigating users' initial participation and further engagement in online conspiracy theory discussions, before highlighting our work can enrich the understanding from different research streams on conspiracy theorizing.

2.1.1 ***Motivations for Engaging in Conspiracy Theory Discussions (RQ1a)***. Scholarly work has examined the causes and motivations of conspiratorial beliefs across three primary avenues—psycho-pathology, epistemology, and social factors. A common consensus among researchers taking a psycho-pathological perspective is that conspiracy theory belief is associated with feelings of hopelessness, insecurity, anxiety, and lack of trust [12, 24]. Some scholars also argue that people's belief in conspiracy theorizing stems from the irrational need to explain large and socially significant events [49]. Aside from this psycho-pathological perspective, researchers also highlight the role played by epistemological factors in conspiracy theorizing. Specifically, a lack of relevant information can lead people to fixate on certain aspects of conspiracy theories that reaffirm their existing worldviews [69].

While psycho-pathological and epistemological perspectives focus on individuals' adoption of conspiracy theories, isolated from their social environments, another large body of work discusses how conspiracy theories appeal to social identity and may impact group formation. Conspiracy theory narratives mirror the nature and structure of inter-group conflicts [38, 62], and can be used as political weapons to induct an individual into like-minded conspiracy theory believers [75]. Specifically, Sunstein and Vermeule [69] turn to the sociology of conspiracy theorizing, and suggest a categorization of sociological factors—such as emotional cascade or availability of other conspiracists in one's network—in conspiracy theory adoption.

Moreover, recent empirical works underline the social factors that may motivate people to join online conspiracy theory discussions [8]. Researchers argue that circumstances such as social norms, platform affordances, and various social narrative and information-sharing tactics used in online communities may influence the advancement of conspiracy theory belief [39, 63, 65]. For example, as indicated in the theoretical work by Sunstein [69], empirical works found that users' social interactions and availability of limited information can lead them deeper into conspiracy theory rabbit holes [37, 56]. Several studies piece together a picture of the role played by social media in promoting conspiracy theory beliefs. However, many such works [37, 56, 62] acknowledge that empirically investigating the digital traces of online users leaves out the broader personal context in users' conspiracy theory engagement. In the next subsection, we discuss the need for a deeper qualitative understanding of conspiracy theory engagement and how our present research aims to fulfill this gap.

While initial engagement in conspiracy theorizing may be motivated by a combination of psychological, epistemological, and social factors, how do users' conspiracy theory beliefs evolve over time? The next subsection briefly outlines various theoretical models that study the evolution of individuals' conspiracy theory worldviews.

2.1.2 *Evolution of Conspiracy Worldviews in Individuals (RQ1b)*. Conspiracy worldview evolution refers to the sense-making process by which people come to believe in conspiracy theories [20]. Conspiracy ideation is connected with negative consequences such as distrust in authorities [30] and a decrease in willingness to contribute to societal causes [33]. Hence, it is important to understand the process by which individuals' conspiracy worldviews evolve after their initial engagement with conspiracy theories.

One of the prominent perspectives in research on conspiracy worldviews focuses on the "monological belief system" [24]. The monological perspective describes conspiracy belief as closed in itself in which, each conspiracy belief reinforces another. That is, belief in one conspiracy theory is correlated with belief in others [73]. The monological perspective on conspiracy worldviews is contested by several scholars. Specifically, contradictory to the monological hypothesis, belief in conspiracy theory correlate with the experience of openness [71]. Moreover, researchers argue that some conspiracy theories contradict each other indicating that the conspiracy theory ecosystem does not consist of closed, mutually supporting ideas [70].

Research analyzing technology that furthers conspiracy theory worldviews highlights the role of algorithms and recommendation systems. For example, certain affordances, such as recommendation algorithms and platform governance may actively guide users towards more harmful content [34–36, 39, 53, 67]. What happens after users delve deeper into the conspiracy theory rabbit hole? The next section describes previous work analyzing the impact of engagement in conspiracy theory discussions.

2.1.3 *Impact of conspiracy theory engagement (RQ1c)*. Research investigating the impact of technologically-mediated conspiracy theory engagement is limited. In general, researchers argue that individuals who engage in conspiratorial beliefs later show characteristics of paranoia [25, 27], suspicion towards authoritative sources of information [69], and tendency to believe unsubstantiated or false claims [51]. Empirical research suggests that initial engagement based on dramatic, controversial events—such as mass shootings—can determine users' long-term tenure inside online conspiracy theory discussions [62]. During this tenure, users may take several pathways of engagement that lead them towards radicalized conspiracy worldviews [37, 57]. In this paper, we dig deeper into the impact of conspiracy theorizing on users' personal, social, and professional lives and investigate the resulting harms.

2.1.4 ***Need for Deeper Contextual Understanding of Online Conspiracy Theory Engagement****.* On the one hand, theoretical models observe conspiracy theory belief adoption isolated from the influence of social media, on the other hand, empirical research misses out on the users' broader cultural, offline contexts, and online unobservable processes which are often at play while forming conspiracy theory belief, such as lurking or passive content consumption. Our study aims to bridge these understandings with in-depth interviews of former conspiracy theory believers where we investigate the intersection of cultural, religious, social, and epistemological factors—both, in online and offline spaces—that cause people to invest in conspiracy theory beliefs. Inspired by the work of Xiao et al. [79] investigating sensemaking in chemtrail conspiracy theories, we extend our research to understand what makes people join and engage in a diverse range of conspiracy theories such as QAnon, Illuminati, New World Order, flat Earth, 9/11 truther, and anti-vaccination (described in detail in Appendix Table 2).

2.2 Disengagement from Online Conspiracy Theory Discussions

Research studying the natural processes of disengagement from conspiracy theory discussions is limited. However, some studies provide valuable insights into the role of technology, information, and social psychology in disengagement from problematic content. Below, we summarize the existing research and theories that motivate the research questions in this proposal.

2.2.1 ***Reasons for exiting conspiracy theory communities (RQ2a)****.* The work by Xiao et. al. [79] comes closest to investigating the reasons why users may disengage from conspiracy theory beliefs. In an interview study with 20 current and former chemtrails conspiracy theory believers, Xiao et al. find that accidental exposure to counter-narratives, persuasion by respected colleagues, and social acceptance were key factors in inducing disbelief in chemtrail conspiracy theories [79]. Other works in political science, criminology, and social psychology studying exit from extreme beliefs found that the process of departing from one's belief is greatly affected by disillusionment with the cause [10, 31, 40], getting exposed to socio-cultural diversity [42, 48] and emotional exhaustion [7]. More recently, an empirical study on the Reddit QAnon community [55] and another work by Google Jigsaw interviewing 85 former QAnon conspiracy believers also found that disillusionment with the promises of the conspiracy theory movement led people out of conspiracy theorizing [32]:

> *Failed predictions, particularly within the context of the massive demands many conspiracy theories place on believers' time, can likewise dampen engagement, prompting believers to seek out new, more attainable, sources of purpose.*[4]

While not specific to the context of conspiracy theorizing, several theoretical models describe the reasons why individuals may depart from their ideological groups, which are discussed next.

- **Cognitive dissonance:** The theory of cognitive dissonance is based on Leon Festinger's observations about a UFO religion where the leader had prophesied the end of the world [19] which never happened. According to the theory, dissonance can occur when there is a reward or punishment associated with certain beliefs. A follow-up clinical study of forced compliance revealed that publicly expressing statements that contradict previously held beliefs can induce dissonance; the dissonance can be reduced by reverting the statement. However, even larger dissonance reduction takes place after the individuals follow up with attitude change [26]. This finding is especially relevant in online scenarios where publicly disclosing opinions opposite to their beliefs can make people change their attitudes. Dissonance can also result from voluntary or involuntary exposure to contradictory information. For example, a study

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[4]https://jigsaw.google.com/the-current/conspiracy-theories/#new-perspectives

found that getting exposed to multiple perspectives of chemtrail conspiracy theory induced ambiguity in its interpretation and motivated some users to forgo their belief in chemtrail conspiracy theories [78].

- **Role Exit Theory:** Role exit theory proposed by Ebaugh [17] describes four stages that lead to exit: 1) doubting, 2) searching for alternatives, 3) the turning point, and 4) creating an ex-role. Building on Ebaugh's work, one unique perspective provided by Bubolz and Simi [11] is that they compare the process of recovery from extremist organizations to the process of addiction recovery and rehabilitation. This is especially relevant given the accounts of relapse, guilt and social exclusion experienced by former white supremacists after exiting [42]. As we will outline later in the results, several of our interview participants also compared their journeys into conspiracy theories with debilitating or exhausting depression (Section 4.3)

- **Aho's defection model:** A defection model proposes processes through which one may abandon their ideological group. Aho's defection model [1] first distinguishes between three different types of disengagement: *Expulsion*—where a member is forcibly pushed out of the group, *Extraction*—where a member is forcibly removed from the people outside of the group, and *Exiting*—where a member leaves a group by their own volition.

In the Discussion section, we discuss how our results could extend these existing theories and propose future directions.

2.2.2 *Impact and Challenges in Online Recovery from Conspiracy theories (RQ2c, RQ2d)*.
What happens after users disengage from online conspiracy theory discussions? Recently, several online communities have emerged around supporting users that are recovering from conspiracy theory beliefs. We borrow the term "recovery" in the context of conspiracy theorizing from the r/ReQovery[5] subreddit mentioned in the Introduction, which is designed as a space to emotionally support former QAnon believers. Accounts in the press by former believers have often compared the experiences of engaging in online conspiracy theory discussions with addiction [60]. Online communities designed to foster social support and emotional safety net for former conspiracy theory believers can thus act as spaces for recovery from conspiracy theorizing. While not explicitly studied for conspiracy theory beliefs, the online communities for recovery serve participants through several roles. User recovery is supported through the provisioning of emotional support, where individual experiences can yield individualized feedback, care, and perceptions of acceptance or reinforcement [3, 14, 52, 64]. Further, these online spaces provide a venue for sharing information [14, 28] and collaborative sensemaking [45, 79] of the users' experiences.

In this paper, we examine the largely unexplored role of online communities in participants' life after losing conspiracy theory beliefs. Specifically, by discussing the challenges in governance and participation in these communities we inform how online conspiracy theory recovery spaces could be improved to cater to users' needs.

2.2.3 *Need for Deeper Understanding of Users' Exit from Online Conspiracy Theory Discussion*.
While the existing literature theories describe ways and reasons for departure from extreme beliefs, most of the research works do not study how users' online activities may have affected their disengagement. In this paper, we investigate the exact moments of disillusionment, either induced through online interactions and content or offline events, that sparked the seed of doubt in users' conspiracy theory beliefs (Section 5.1). Moreover, we also explore the largely understudied consequences of internet-mediated conspiracy theorizing on users' mental health and social connections after exiting the conspiracy theory belief (Section 5.2). With the in-depth

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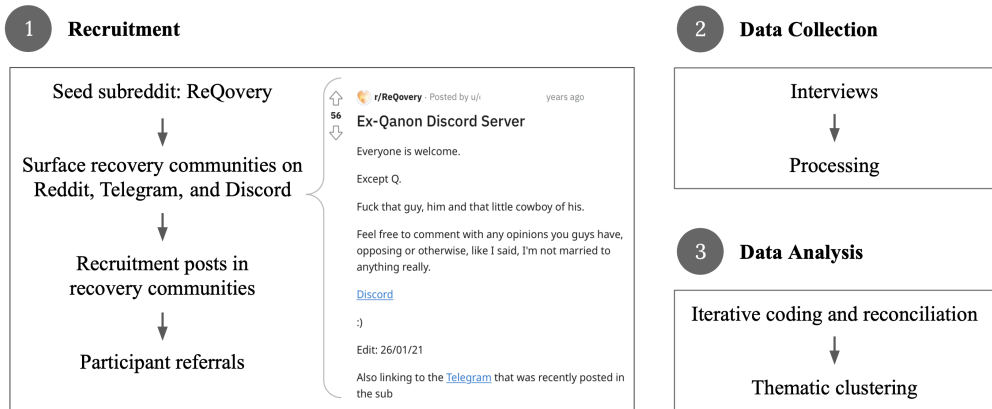[5]https://www.reddit.com/r/ReQovery/

Fig. 1. Research methods. (1) A seed Reddit recovery community was used to detect other communities across platforms. Here we show an example post surfaced from the seed subreddit mentioning online recovery communities on Telegram and Discord. Participants were recruited through recruitment messages in these communities and through participant referrals (2) Data was collected through conducting and transcribing interviews, which were then processed for analysis and to preserve privacy. (3) Data was analyzed through inductive thematic analysis, with themes emerging from a codebook refined through rounds of coding and reconciliation.

interviews, we aim to provide insights into how social media can aid former conspiracy theory believers in their recovery process.

3 METHODS

To explore user experiences with conspiracy theory engagement, disengagement, and recovery online, we conducted in-depth interviews with 15 former conspiracy theory believers. Our participants bring experiences from a range of conspiracy theories and online platforms (see Table 1). Our study is IRB approved. In this section, we detail our research methods process (see Figure 1) and outline our recruitment strategy (Section 3.1), describe interview participants (Section 3.2), and detail interview data collection (Section 3.3) and analysis (Section 3.4). We additionally outline the ethical considerations of our study design (Section 3.5).

3.1 Participant Recruitment

While it is difficult to recruit and interview social media users affiliated with conspiracy theory beliefs, researchers have successfully recruited former conspiracists [79]. Xiao et al. mention that being upfront about research aims and open to listening to users' experiences is the best way to approach former conspiracy believers [79]. Moreover, online recovery communities such as Facebook's `Ex Alex Jones Fans` and `Ex Conspiracy Theorists` group[6] or Reddit's `r/ReQovery` subreddit specifically create space for former conspiracy theory believers to share their experiences. For example, the `r/QAnonCasualties`[7] subreddit offers the "Ex-QAnon" and "Ex-QAnon Adjacent"

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[6]https://www.facebook.com/groups/241973439605503
[7]https://www.reddit.com/r/QAnonCasualties/

flair[8] to tag former conspiracy theory believer usernames in addition to highlighting their recovery-focused posts in the community wiki. Some of these communities also allow researchers, journalists, and non-believers to post requests for former conspiracy theory believers.

We first identified various online recovery spaces for former conspiracy theory believers by seeding from r/ReQovery and surfacing mentions of the top 100 social networks [80]. We manually inspected the results, finding references to other online recovery spaces on Reddit, Telegram, and Discord. With the help of community moderators, we posted public recruitment messages in these communities to solicit participants that self-identified as former conspiracists. Even though we recruited from recovery communities associated with the QAnon conspiracy, former believers of other conspiracy theories interact in those spaces and responded to participate in our study. We further followed up on referrals, where participants either directly referred an individual or shared our research call with their networks on Facebook and Twitter.

3.2 Interview Participants

All of our participants are older than 18 years and have signed an interview consent form. While the majority of our participants reside in the United States, we interviewed former believers located in the United Kingdom and Australia as well. 12 participants were recruited from Reddit while the rest were recruited through referrals from other participants. The participants held political views ranging from the United States alt-right to democratic socialism. They identified as recovering from a variety of conspiracy theory beliefs—such as QAnon, Illuminati, New World Order, flat Earth, 9/11 truther, anti-vaccination etc.—with nine of the participants holding beliefs close to QAnon conspiracy theory. Some participants began engaging with the online conspiracy theory content prior to and in the early days of social media, engaging with forums and sites such as Myspace. However, all participants had exposure in the last decade to current social media and online platforms. All participants also reported engaging with recovery communities on social media sites such as Reddit, Facebook, and Twitter. Although some online recovery spaces are dedicated to specific conspiracy theory beliefs such as QAnon, we found they were frequented by former conspiracists across a variety of worldviews. Table 1 includes a breakdown of participants, their former conspiracy theory beliefs, and platforms that facilitated their engagement and disengagement from such beliefs. Given the sensitivity of the interview content and some participants' preference for anonymity, we do not collect or report any specific demographic information.

3.3 Interview Data Collection

We focused on having an open, empathetic discussion with our interview participants, clearly stating our research goals and the intended impact of the study. The interviews were semi-structured and in-depth lasting 60-90 minutes. Given the varying comfort levels of participants, we provided them the option of audio only or chat-based interview as an alternative to a video interview [79].

Guided by our primary RQs, the interviews were based on the questions mentioned in the Appendix Section A.2, with follow-ups probing the responses. We explored the participant's journey chronologically starting from their initial engagement with conspiracy theories up until their current recovery. In the process, we tackled the key cultural, religious, epistemological, social, technical, and other factors that may have influenced or characterized the participant's online conspiracy theory engagement and disengagement. After building a comfortable communication space through warm-up questions, we also investigated the deeper psychological, behavioral, and social impacts of conspiracy theory belief adoption, loss of belief, and subsequent recovery.

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[8]A community-specific tag or icon that can be added to appear with a username on Reddit

ID	Recruitment	Conspiracy Theory Beliefs	Online Engagement	Online Disengagement & Recovery
1	Reddit	alt-right, Pizzagate, Seth Rich	4chan, YouTube	YouTube, forums, Facebook, Instagram, Reddit, Twitter
2	Reddit	QAnon	8chan, forums, Reddit, Voat, YouTube	Discord, Reddit, Telegram
3	Reddit	anti-vaccination, apocalyptic, Bilderberg Group, Ron Paul-associated	conspiracy theory websites, Facebook, podcasts, YouTube	Clubhouse, deprogramming websites, Facebook, Reddit
4	Referral-Twitter	9/11, false flag, reptilian	forums, Facebook, conspiracy theory websites	Youtube
5	Reddit	Pizzagate, QAnon	Instagram, Twitter, YouTube	Reddit, TikTok
6	Reddit	alt-right, QAnon	4chan, Reddit, Twitter	news websites, Reddit
7	Referral-Twitter	Illuminati, New World Order	Facebook, forums, Myspace, YouTube	Facebook, forums, Twitter, YouTube
8	Reddit	New World Order, QAnon	conspiracy theory websites, greatawakening.win, Facebook	Reddit
9	Reddit	9/11, JFK, New World Order	Reddit	deprogramming and science websites, Reddit
10	Reddit	QAnon	blogs, forums, gaming chat, podcasts, YouTube	Reddit, science websites, Twitter
11	Reddit	alt-right, QAnon	4chan, 8chan, conspiracy theory websites, Google,	Reddit, YouTube
12	Referral-Facebook	Bircherism	conspiracy theory websites, forums, Yahoo! Groups	Facebook
13	Reddit	QAnon	Reddit	Reddit
14	Reddit	9/11, flat Earth, QAnon	AnonUp, BitChute, Gab, Telegram, YouTube	Reddit
15	Reddit	anti-vaccination, QAnon	AnonUp, Instagram, podcasts, Telegram, Twitter, YouTube	podcasts, Reddit

Table 1. Study Participants. Five columns illustrate information about each participant's online interactions. 'Recruitment' indicates the platform where and how a participant, designated by a unique 'ID', was recruited into the study. 'Conspiracy Theory Beliefs' indicates the self-identified beliefs from which the participant is recovering. Descriptions for these conspiracy theories can be found in the Appendix Section A.1. Both 'Online Engagement' and 'Online Disengagement and Recovery' list the self-identified sites that contributed to the participant's belief evolution. Note: Some participants used the same platforms to engage, disengage, and recover from their conspiracy theory beliefs.

3.4 Interview Data Analysis

To preserve the participant's anonymity, we removed all mentions of participant names, social media handles, and personally identifiable information from the interview transcripts. Two authors of this

paper conducted an iterative thematic analysis, labeling various interview utterances with short phrases, or codes. For example, one utterance by a participant saying *"I just go there and look at what people are saying, read comments. Never post anything and all."* was coded as "engagement_lurking", as it describes the participants engaging in an online community through lurking. The first two authors independently examined and surfaced codes from several interviews, which were combined and refined through multiple rounds of iterative coding and reconciliation until the codebook was stable. Finally, we aligned the codes to our key research questions mentioned in the Introduction. In the following sections, we present commonly occurring themes describing various factors and impacts of engaging, disengaging and recovering from conspiracy theories online.

3.5 Note on Research Ethics

Our study design was sensitive to the risks associated with documenting the vulnerable and sometimes stigmatized experiences of a recovering population. As a result, we took numerous steps to preserve privacy. When recruiting from online recovery communities, we messaged the moderators prior to posting our research call. We explained our research goals, provided verification when asked, incorporated feedback on how to address the community, and posted our message in proper channels. Participants were able to consent to research with their online handle to preserve anonymity. Interview content were kept on a secure computer and anonymized for analysis. In analyzing and reporting our results, we assigned each participant a unique ID number to replace identifying information. Further, we recognize our position as outsiders to the community of former conspiracists and how that might influence our data collection and analysis. As a result, we endeavored to encourage participant agency during the research process [54]. Participants dictated the interview platform and medium. Interviews were conducted synchronously over Zoom, with participants electing to use either audio or video, and semi-synchronously using Discord and Reddit chat. Zoom and chat transcripts were analyzed together since it has been found there is no significant difference in the number of unique qualitative codes between the mediums [16]. We also engaged with the participants throughout the interview. We made clear that they could stop or withdraw from the study at any time and sought confirmation of researcher interpretations of their narratives. Finally, to ensure the interview questions did not limit our understanding of their experience, we gave space for participants to tell us anything that we did not cover but they wish we had. We recognize the interview participants as a stakeholder group in this research. Hence, we will share our findings with interested participants upon the acceptance of this paper.

4 RQ1: UNDERSTANDING HOW USERS ENGAGE WITH CONSPIRACY THEORIES ONLINE

Through RQ1, we aim to understand how and why do users engage with conspiracy theories online. Specifically, we detail the experiences of our participants around RQ1 themes emerging from the factors that motivate users to engage with conspiracy theories (Section 4.1), how their conspiracy theory worldviews evolve over time (Section 4.2), and how they are impacted by engaging with conspiracy theories (Section 4.3).

Our results show that users were motivated to engage with conspiracy content and communities through exoteric or benign predilections and beliefs. We find that online platforms and communities, self-reflections on role and value, and offline factors play a role evolving conspiracy theory engagement. Finally, we observe negative impacts to mental health, behavior, and social connections that participants attribute to their engagement with conspiracy theories online.

4.1 RQ1a: What motivates users to engage with conspiracy theories online?

We find a variety of motivating factors for engaging in conspiracy theory-related online content and communities, with mainstream common entry points. Some participants were introduced to conspiracy theories online through their immediate offline social connections, while others were discussing and engaging with conspiracy exclusively online. Common benign entry points into extreme beliefs include the allure of engaging with entertaining content, predisposition from existing beliefs with a nexus to conspiracy theory narratives, and a desire to uncover and counter alleged harms propagated by those in power.

*4.1.1 **Engaging with entertaining content**.* Online conspiracy theory content in particular attracted participants due to its appealing presentation and captivating nature. One participant noted how some videos on conspiracy theories had high production values and slick presentations, with another echoing:

> *it feels, like, made for the internet... you just kind of watch the whole thing and, like, engage with people in the comments section*—P-03, former apocalyptic, anti-vaccination, Bilderberg, and Ron Paul-associated conspiracy believer.

From sharing images of the Pentagon on forums in the early 2000s (pertaining to the 9/11 conspiracy theories) to the recent collective sense-making of Q drops (QAnon conspiracy theories), conspiracy theories provided believers with ample opportunity to find exciting and engaging content to answer questions about dramatic world events such as 9/11 or mass shootings. One participant reflected about how engaging in conspiracy theory discussions online made it more entertaining and accessible. *"It's like a fan fiction. You read more about it and it becomes more interesting and you connect with these characters that they've made up and you identify with them"* (P-08, former New World Order and QAnon believer).

Yet, this allure and deepening personal connection to the theories also led to increased engagement with conspiracy theory content and increased investment in the alleged stakes. For example, one participant began by looking at obscure theories for fun, which led them to 4chan, where discussions increased the stakes and indoctrinated them into other theories. They said, *"It went from being about entertainment to being... I don't know more about like the future of this country"* (P-11, former alt-right and QAnon believer). We found that over time many participants were increasingly isolated from other aspects from their lives, devoted to exposing and dissecting any information for which they could get access. What began as casual engagement with an interesting concept evolved towards obsession, monopolizing their time, computer storage space, and conversations.

*4.1.2 **Social or ideological priming towards conspiracy theory beliefs**.* Some participants were attracted to the fringe through a predisposition for conspiracy theory worldviews, often due to existing biases or belief systems. These included prior interest in the unknown, fear of perceived threats grounded in existing trauma or current hardships, current political or religious beliefs, and lack of institutional trust. For example, a predilection for the paranormal, a personal history of child abuse, dislike or distrust of a political candidate, or viewing the media as propaganda. One participant, who found their way into and out of conspiracy theories through examination of their faith, said that because they were taught to *"see the world as evil and the people in the Church is good, we're going to believe these conspiracy theories way more easily and we're going to offer it way more easily than people who don't have any religious affiliation like that"* (P-05, former Pizzagate and QAnon believer). A lack of trust in the mainstream led some to look towards alternative sources for information in lieu of established mainstream news outlets, experts, and institutions such as government agencies.

> *After Trump won, I kind of lost faith in a lot of like mainstream media and like you know, because it was out of left field, and I was like how did you not see this coming, come on. And I was looking for alternative news sources*—P-02, former QAnon believer, moderator of a conspiracy recovery community.

Some participants reported that isolating themselves from mainstream information sources resulted in further strengthening of their conspiracy theory beliefs.

*4.1.3 **Desire to counter harms**.* For some participants, engagement was driven by a desire to uncover plots by those who sought to do harm to society. These participants were motivated to serve others, working against alleged plots of global elites by redistributing power or saving children from "blood harvesting".

> *On 4chan, where I was there right at the start of the HTG [9] threads that became Pizzagate, it was like we all were looking to uncover the evidence of something huge and save kids. Of course I wanted to trust and be part of that. And this was a very organic thing. It's not like everyone was there intending it to become what it did*—P-01, former alt-right, Pizzagate, and Seth Rich conspiracy believer.

Participants often channeled their pre-existing political biases and fears into desires to counter harms done by the outsiders. For example, an alt-right supporter explained how they got motivated for following conspiracy theories out of their political biases.

> *The Left was trying to destroy America and that they were trying to you know basically turned us into a third world country to like basically just profit themselves and like I basically saw it as like a descent into hell on Earth and like anything I could do was like helping avoid*—P-11, former alt-right and QAnon believer.

When fellow believers took more extreme positions to counter these perceived harms, reactions varied. Some participants were supportive of violent rhetoric, *"I did not understand how happy I would be to see Hillary Clinton publicly executed, even though she was innocent"* (P-02, former QAnon believer, moderator of a conspiracy recovery community), while others found violence to be the wrong approach yet remained committed to the cause, *"the Pizzagate shooting event itself made me step back a bit but still I thought we were wrong but for a noble cause"* (P-01, former alt-right, Pizzagate, and Seth Rich conspiracy believer) .

4.2 RQ1b: How do users' conspiracy theory worldviews evolve online?

We seek to understand how user engagement in conspiracy theories online evolves by examining the factors that contribute to furthering of participants' beliefs and participation over time. Following initial entry into conspiracy theorizing, we found that participants further engaged in both depth and breadth, through increased involvement, trust, and adoption of additional conspiracy theories. Technology was a key enabler for many, providing accessibility to content and communities of like-minded users. Social aspects, particularly in the online environment, yielded engagement and validation. As participants became more invested in their beliefs, many were driven deeper by their perceived role and self-image emerging from the conspiracy theory narrative. Further, participants found connections to offline circumstances that either left them with uncertainty or confirmation which cultivated further engagement and trust in the conspiracy theories.

*4.2.1 **Role of platforms in furthering conspiracy theory beliefs**.* Platforms served as an amplifier for engagement with conspiracy theories online. Participants reported having social

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[9]HUNTING TRAFFICKERS GENERAL (HTG) discussions on 4chan's /pol/ board for investigating speculated human trafficking networks and enterprises that ultimately yielded no evidence of crimes

media feeds flooded with conspiracy theories either through platform recommendations or posts by their social connections on the site. Participants seeking to further engage with conspiracy theories also directly queried search engines, and sought out discussions surrounding specific hashtags. One participant cited the effect of platform-driven moderation, where due to posting conspiracy theory-related content, they lost access to thousands of friends and over a decade of memories with no warning, further sequestering them from the real world. *"It was awful, like talk about being isolated. I had nothing left, I had no contact with anyone in my community... it was all just erased in a second and it wasn't like a warning or anything like that. It was just gone, and it was nothing I could do about it"* (P-15, former anti-vaccination and QAnon believer). Further, anonymous social interactions encouraged toxic behavior, which participants both exhibited and experienced. Some participants felt an urge to get into arguments online with friends and strangers. As participants began engaging with certain conspiracy theory communities and content, they found relevant information often served unprompted through algorithmic referrals and posts by online contacts.

> It started when I saw several posts about the *"Wayfair conspiracy"* about them trafficking children in wardrobes... Trying to look more into that took me to the #savethechildren hashtag and that opened everything up to QAnon—P-13, former QAnon believer.

Overall, this successive exposure to more content and diverse conspiracy theories contributed significantly in shaping some participants' evolving conspiracy theory worldviews.

4.2.2 **Role of online communities in furthering conspiracy theory beliefs**. Participants found that online communities helped disinformative narratives dominate their information intake unchallenged, and provided access to potential audiences involved in conspiracy theory discussions. Those who felt socially ostracized found kinship in online communities through shared beliefs, where trust in the group further intensified the conspiracy theorizing. One participant highlighted how information was filtered through a combination of personal choice and their echo chamber.

> I mostly just engaged with people in the comments who held the same beliefs as me, and it was kind of, we just validated each other's beliefs and there was no other person to kind of say, hey you know these beliefs are a little wacky. And if there was they'd immediately get down voted to hell and kicked off the platform—P-09, former 9/11 truther, JFK, and New World Order believer.

Those who questioned aspects of the conspiracy theories faced abusive comments and content deletion. Additionally, the provocative, humorous culture within conspiracy communities further opened participants up to more extreme beliefs and conspiracies.

> 4chan was, like, a community I chose to use because of its largely right-wing and edgy board culture and that ironic edgy humor was actually just real alt-right and racist bullshit that I started internalizing by submerging myself in the board culture. 4chan was much more organic and more effective at making me accept extreme stuff and conspiracies—P-01, former alt-right, Pizzagate, and Seth Rich conspiracy believer.

4.2.3 **Self-reflection on role and value**. Conspiracy theorizing provided certain believers with increased self-worth. Some participants described feeling superior and "above-the-sheep" for understanding and being on the inside of the fringe beliefs. Others further committed because to disengage would require admitting they were wrong.

> And all of these people trying to say that I was a bad person for believing them [QAnon theories] and I was just adamant not to let them be right, you know. Because I felt like if they were if it turned out, they were right, then it would mean that I was that bad person—P-15, former anti-vaccination and QAnon believer.

Certain believers also viewed themselves as social activists while engaging in conspiracy theory discussions. *"It was an opportunity to be involved in something that I felt was important. And to be a leader in that community"* (P-10, former QAnon believer). Participants found purpose and social engagement through propagating and unwinding conspiracy theories. They discussed engaging with influencers and using social media to target messaging to convert those on the periphery. These activists evangelized not only to close contacts such as family, but also to strangers found in online wellness, faith, and political groups that might be receptive to conspiracy theory messaging.

> *We were trying to find the right people to share it with through pages and groups. So, if it was something to do with like say a spiritual version of the conspiracy, then I could maybe like search out New Age people, or if it was something to do with the politics then I could search people who were talking about a New World Order. I needed the engagement... Basically I wanted, you know, the click*—P-07, former Illuminati and New World Order believer.

By positively re-evaluating their own role and worth inside the movement, some participants were able to evolve into active propagators of conspiracy theories, either through targeting the right audience or by successfully leveraging affordances of content sharing platforms.

4.2.4 ***Conspiracy theories in the context of offline events****.* Real world engagement and events further strengthened and evolved participants' conspiratorial beliefs. Many knew other believers in their personal and professional lives that validated and encouraged conspiracy theorizing. Sharing links over text messengers, and commentary in person, instigated further research into conspiracy theories. Discrete current events would occur that either further radicalized users, such as public figures using language or gestures interpreted as signals by believers.

> *Something as stupid as, like, Trump making a thumbs up.... Like, other associates also doing a thumbs up, but it's in the shape of a Q in the picture. You know, just vaguely of the shape of a Q. You know, it would like coincide with something else Q said, like, maybe the time of day*—P-11, former alt-right and QAnon believer.

Conspiracy theories can provide alternative [65], and sometimes more comprehensible narratives for dramatic, often incomprehensible events [62, 72]. Beyond providing evidence, conspiracy theories provided escapism for real-world problems.

> *How could you not be captivated by that, when you look around at everything that's happening in the world around you and it's falling apart. And you're like, no, I don't want to believe that this is the real world. I don't want to believe that the pandemic is real and that all of the side effects are real. It's just too sad and too scary*—P-15, former anti-vaccination and QAnon believer.

Alternative realities provided emotional safety nets for those struggling with the state of their lives which helped in the evolution of conspiracy theory worldviews.

> *There was a lot of powerlessness in my life and helplessness and depression... You know it's more comforting even if it's an evil like controlling government or something. It's still more comforting and think, hey, someone's in control*—P-04, former 9/11 truther, false flag, and reptilian conspiracy believer.

Moreover, these beliefs could also provide believers with easily understood and clear answers to tough problems and unexplained events.

4.3 RQ1c: How are users impacted by engaging with conspiracy theories online?

Although, conspiracy theorizing initially provided purpose and sense of community to some participants, it concurrently surfaced new challenges. From a personal toll on mental health and behavior change to the consequences on social networks and social interactions, participants reflected on

the costs associated with their conspiracy theory engagement. For some, these repercussions eventually prompted the need of distancing from the conspiracy theory content and communities and ultimately led to belief disengagement. We present belief disengagement in later sections. Below we outline the impacts of engaging in conspiratorial beliefs.

4.3.1 ***Behavior change and impacts on mental health****.* According to the participants, over time the impact on their behavior and mental health trended negative. Some described becoming more aggressive, singularly focused on proselytizing those both inside and outside of their social circles. Others felt more anxious, concerned about perceived threats and the burden of their position as one of the few who was aware of the "truth". Even those participants who effectively partitioned their conspiracist identity from other parts of their life still noted that some changes couldn't be contained. Engaging with conspiracy theories online desensitized them to hateful beliefs such as racism, homophobia, and misogyny. *"It made those kinds of beliefs not such a disgusting thing to me, at least not like it would have before I was introduced to these conspiracy theories and the sort of online spaces"* (P-09, former 9/11 truther, JFK, and New World Order believer). While some participants recounted how conspiracy theorizing resulted in loss of personal relationships, others suffered through diminishing empathy, escalating biases, and increasingly negative personal interactions. Additionally, as one participant recalled, their beliefs had a tangible impact outside of the time and online spaces they devoted to conspiracy theories.

> *I would feel very depressed because of the dark things I believed were going on. I remember realizing that I couldn't consume this information before I went to work for the day because it would make me feel low and irritable*—P-13, former QAnon believer.

Engaging with conspiracy theories both resurfaced existing immediate trauma, and caused secondary trauma through exposure to certain content. A participant recalled how the negative response their beliefs elicited caused them to become frantic to be understood, ultimately culminating in a mental health crisis. Other participants recalled how the effects of online conspiracy theory engagement precipitated changes not only in mental health, but also in their offline conduct.

> *It got to the point where I was starting to think conspiratorially in my everyday life, so, it almost had this effect of like it starts online but it's like a virus in the sense of, like you know, it kind of spreads to your everyday life and like your way of thinking*—P-03, former apocalyptic, anti-vaccination, Bilderberg, and Ron Paul-associated conspiracy believer.

This shared sentiment of lack of control and lack of containment illustrates the extent to which the lives of participants were impacted by their conspiracy theory engagement.

4.3.2 ***Social isolation and loss of personal relationships****.* For many participants, the intrinsic costs of conspiracy theory beliefs were tied directly to their social context. A common experience was the damage to relationships, particularly stemming from the believer's demonstrated aggression and compulsion. Some participants found such social isolation to be temporary in nature, repaired following denunciation of their beliefs. Others were unable to restore their social connections, hindered by personal shame or irreparable harm. The majority found themselves to be ostracized by their non-conspiracy communities, although some instigated the fracturing of relationships themselves, pushing away those who disagreed or hurt them with the unexpected reactions to their claims.

> *After forming such beliefs I really started to divide people into boxes. So this meant that if anybody disagreed with one, they were instantly an enemy. It was no debate, they were instantly an enemy*—P-08, former New World Order and QAnon believer.

Overall, majority of our participants reported personal negative consequences of engaging with conspiracy theories, with varying degrees. In the Discussion section, we further elaborate on how our results can provide a new lens of looking at harms caused by conspiracy theories.

5 RQ2: UNDERSTANDING HOW USERS DISENGAGE AND RECOVER FROM CONSPIRACY THEORIES ONLINE

In RQ2, we ask how users disengage and recover from conspiracy theories online. We first examine what motivates users' disengagement from online conspiracy theories (Section 5.1) and the personal impacts of such disengagement (Section 5.2). The 15 participants in this study continued to support their conspiracy theory recovery in online spaces following their disengagement. We characterize the personal impacts on engaging in online recovery spaces (Section 5.3) and conclude by summarizing the challenges to online disengagement and recovery (Section 5.4).

We find that participants were motivated to disengage due to critical exposure to information or events discordant with conspiracy theories and incongruency with online conspiracy groups. Dissociating with conspiracy communities and content and cascading disbelief of conspiracy theories were also common. Our results show that due to conspiracy theory disengagement, participants were impacted by generally positive changes to their social lives and mental health, in addition to the desire to more consciously and responsibly engage with conspiracy theories online. With respect to engagement with recovery spaces online, participants found increased social connection and support as well as increased threats of harassment and abuse. We find that the online disengagement and recovery for participants was challenged by social resistance, such as harassment, and algorithmic resistance, such as automated moderation and recommendations. Further, the majority of participants expressed the need for supportive, safe spaces to foster continued recovery and inclusion, while others further calling for platform-hosted recovery resources for engaging with online content and offline help.

5.1 RQ2a: What motivates users to disengage from conspiracy theories?

For some participants, disengagement occurred over a period of time, through increased questioning of beliefs or a slow dissolving of commitment. For others it was prompted by a watershed moment, either through personal interactions or the context of current events. This was motivated by exposure to information or events inducing critical reflection, emerging incongruency with online conspiracy theory groups, separation from conspiracy theory content and communities, and cascading disbelief.

5.1.1 ***Exposure to information or events inducing critical reflection****.* Critical exposure to contradictions in conspiracy theories, failed prophecies, and alternative perspectives also prompted a loss in belief. Current events were the leading cause of critical exposure for participants. Negative portrayal of problematic takes by other believers related to rallies and protests caused some to start thinking more critically and challenge their beliefs.

> *Charlottesville made me hate the alt right when I realized antifa were the good guys there and realized that I was associating with actual nazis. And then from there I started thinking more critically about my beliefs and really challenging myself on them*—P-01, former alt-right, Pizzagate, and Seth Rich conspiracy believer.

Current events occurred that were misaligned with conspiracy theory narratives, which were framed by other conspiracists as false flags or "part of the plan" but lacked coherent explanation or that contradicted the narrative entirely. For example, one participant cited Brexit as evidence against a New World Order, while others cited President Donald Trump's actions during his presidency as falling short of the promises and genius espoused by Q.

> *Then on top of that coronavirus and the way that Trump handled it from you know beginning to end, it just didn't make any sense whatsoever that like this kind of a genius or whatever would make these stupid decisions like this*—P-11, former alt-right and QAnon believer.

Individual interactions also played a role, with participants citing alternative perspectives presented by friends, therapists, teachers, and debunking information encountered online.

> *Another thing was going back and seeing how every theory that was happening was not being proved right. So they were keeping tabs at Qult Headquarters on all the theories and when they were supposed to come to pass, and they never did and that encouraged me further*—P-08, former New World Order and QAnon believer.

> *My other friend looked at me and she goes I work with a Sandy Hook parent. They lost their child there... and it's someone that I trust, and I believe, and she also has government clearance*—P-04, former 9/11 truther, false flag, and reptilian conspiracy believer.

Participant encounters with information and events that prompted the re-examination of conspiracy beliefs occurred both offline and online. For some participants, the same information pathways that helped them engage with conspiracy theories held the potential to help them disengage. One participant said:

> *...and I told people, all I ever had to do was type in one little word into YouTube and that would have gotten me out sooner. There were times when I was like, something feels wrong about all of this, all I have to do is type in type in the word "debunk"*—P-04, former 9/11 truther, false flag, and reptilian conspiracy believer.

*5.1.2 **Incongruency with social groups**.* Interactions within online conspiracy communities prompted some participants to reduce or eliminate their involvement, usually driven by misalignment of conspiracy theory narratives or negative interactions. Toxic interactions, the sharing of upsetting content, and the adoption of a with-us-or-against-us stance drove some users away from existing conspiracy spaces. In some communities, asking questions or presenting alternative claims caused users to be subjected to verbal abuse or moderation actions.

> *...And I remember one time, I asked the question: "...wait, but didn't like Hillary already die?." And they were like "if you're not paying attention that's on you, don't be stupid" and then cuss me out, so yeah... the tone was aggressive, it was always aggressive, it was never calm*—P-08, former New World Order and QAnon believer.

Continued exposure to community norms that diminished the user experience caused some participants to spend less time in certain conspiracy communities. Participants also cited the loss of credibility of fellow conspiracists, resulting in more critical examination of the content itself.

> *The more people I talked to that had crazier and crazier theories about it, the more I realized I didn't want to be on that team... and the more I realized that was the kind of behavioral characteristics that I would have to have to stay in the community, the less I wanted to be involved in it*—P-10, former QAnon believer.

This occurred when other believers espoused increasingly fringe and decreasingly plausible theories, increased racism and homophobia, and aggressive online interactions. One participant recalled how becoming aware of the hatefulness of ideologies encouraged them to question if the conspiracy even existed at all.

*5.1.3 **Getting distance from online conspiracy-adjacent content and communities**.* A common disengagement pathway described was increased time spent outside of the conspiracy theorizing spaces. Participants most often spoke about "unplugging" from the Internet.

> *I logged off and I didn't speak to anybody... trying to figure out where I was, where I had gone wrong. I started looking at, like, all of the little conspiracy theories I believed in which propped up this big*

conspiracy I believed in. And I started, just like kind of trying to look at every single thing I believed in with new eyes kind of like a deconstruction of my complete beliefs—P-07, former Illuminati and New World Order believer.

Disconnecting was often a conscious choice, prompted by critical exposure or concerns about the negative impacts of their conspiracy beliefs. Distance also occurred due to offline circumstances, such as separation from believers in their social circle and increased engagement with non-conspiracy interests and social systems.

So I think opening myself to other people and, my own stuff that I'd like to do, made me feel connected again in like a more personal way..rather than like, okay I'm gonna, talk to these other conspiracy people and we're just gonna be talking about conspiracy theories all the time—P-03, former apocalyptic, anti-vaccination, Bilderberg, and Ron Paul-associated conspiracy believer.

Participants such as this were able to find connections and resources, both in online and offline spaces, where engagement had a more positive impact on their mental health and where shared interests were less consuming. Additionally, some participants compared their belief disengagement to trying to recover from an addiction or trying to leave an abusive relationship. These analogies gave them a way to express their struggles during conspiracy engagement and their actions during recovery, but most critically helped participants frame how fragile and non-linear they found the process of disengaging from conspiracy theory beliefs. This could mean going "cold-turkey" by cutting off access to conspiracy communities and content. It could also mean having trouble completely cutting ties to a "familiar source of dopamine" despite being aware of the abuse they felt from their beliefs and community. Even on their path to recovery, several participants expressed concerns about potential relapses.

*5.1.4 **Cascading disbelief**.* Similar to how participants' beliefs in some conspiracies led to increased acceptance of other fringe beliefs, loss of beliefs in some conspiracies also led to the questioning and disengagement of others. *"It was like a house of cards. If Sandy Hook was real, then what about the thing that led me to sandy hook, which was 9/11. So, you know, that I was like that needs to be examined also"* (P-04, former 9/11 truther, false flag, and reptilian conspiracy believer). When presented with debunking evidence or a compelling argument, participants could not help but to consider the implications for connected conspiracies. One participant cited how over time they began questioning truths in the conspiracy until at some point it became too much and they reached a point of critical exposure. If enough aspects of their theory didn't seem to make sense, eventually it became a question of whether or not the entire conspiracy theory was a lie.

And I just started to be like "Oh, maybe this isn't true and maybe this isn't true, and so, eventually, it was like well if all that's not true, then maybe the whole thing is just one giant lie"—P-09, former 9/11 truther, JFK, and New World Order believer

5.2 RQ2b: How are users impacted by disengaging from conspiracy theories online?

We further examine user disengagement from conspiracy theories online by assessing participants' personal impacts of losing beliefs and changing behavior. Participants found relief in the absence of conspiracy theorizing, affirmation in critical exposure, and redemption through making amends.

*5.2.1 **Social and psychological impacts**.* Participants in general felt less burdened by the threats and obligations associated with their conspiracy theories. Common sentiments of relief were expressed, from exiting sometimes toxic environments and release from the anxiety they felt in connection to the conspiracies.

> *I got relieved to know the fact that not everything is a lie and that not everyone is trying to take my freedoms away or whatever the next conspiracy is about. I detoxed from it quickly and felt pretty good knowing that... more calm more relaxed*—P-14, former 9/11 truther, flat Earth, and QAnon believer.

Former believers found reprieve from the consuming nature and negative impacts of their engagement. Although, participants in large part expressed positive sentiment in response to belief disengagement, they also experienced negative repercussions. This manifested most often in social isolation, where former believers felt ostracized by the support systems they held prior to and during their conspiracy theory engagement. One participant mentioned losing thousands of online social connections as a result of disavowing their beliefs. Another emphasized the loss of more intimate connections, saying *"I no longer have any contact with any of those friends that I used to have who were very involved in it... it was my friend group, you know"* (P-10, former QAnon believer).

5.2.2 ***Desire for critical exposure****.* Participants discussed the central role of continued engagement in recovery in communities comprised of former believers, the general public, or those impacted by conspiracy believers. Posts disclosing the consequences of conspiracy theorizing were critical for some. *"I think having a sense of humor about it is another thing that helps me heal a little bit cuz I get to look back on how stupid I was and how that impacted how other people would see me"* (P-09, former 9/11 truther, JFK, and New World Order believer). Seeing old behaviors memorialized in memes or mocked was a helpful intervention for some participants who found their way into conspiracy theories through engaging content and edgy humor. Others benefited from more serious exposure to the human toll from those isolated or harmed by their conspiracy beliefs as well as events where the actions of conspiracists led to violence or public reprimand. Within dedicated communities for former believers, reading through comments on recovery posts were cited as a helpful reference point in countering doubts.

5.2.3 ***Making amends****.* Many participants expressed regret for actions taken during their time as believers, from furthering conspiracy theory discussions to promoting content to onboard new believers. One participant directly linked their online recovery to the Alcoholics Anonymous step of making amends. The sentiment of working in opposition to harms furthered as believers was a common one, with participants debunking content by creating their own content, such as videos, or sharing existing debunking resources.

> *I'm trying to get the word out through Twitter to kind of like debunk things and to spread the word about like articles and stuff... I had this thought, I have a personal responsibility*—P-04, former 9/11 truther, false flag, and reptilian conspiracy believer.

While this participant worked to disengage and support other believers, others found a role helping the relatives of conspiracy theorists understand the perspective and how to help their friends and family. Participating in online communities also allowed for participants to engage on public and private channels to affirm the recovery of others.

5.3 RQ2c: How are users impacted by engaging in recovery spaces online?

Participants interacted with online communities that support recovery from conspiracy theory beliefs, often actively contributing. Given how the role of recovery communities is largely unexplored, we further document how users are impacted by participating in such spaces. While online recovery from conspiracy theories was not constrained to recovery communities, such spaces served a unique role in connecting former believers, serving an important function in providing accessible and centralized resources and support. Echoing results detailed in online disengagement, mental health largely improved, but was sometimes adversely impacted. With respect to the consequences of

online recovery engagement on social networks and interactions, while participants benefited from connecting with other former believers and supportive allies, participation also subjected them to the threat of online harassment and abuse.

5.3.1 **Reflecting on shared experiences**. Some participants were driven to online communities to find other former believers who understood what they were going through and to find support. Recovery could be a long process after the point of losing belief, from deconstructing what went wrong to rebuilding their lives. Yet finding those in a similar position could be difficult . *"There is like so few of us, I mean instantly have so much in common. Like you don't have to explain, I don't have to explain what it feels like or what this means and stuff like that, like they get it, they empathize don't just sympathize"* (P-02, former QAnon believer, moderator of a conspiracy recovery community). Through finding and connecting with others in a similar position, users found an audience that could identify with their experience, allowing their posts to provide help to and elicit feedback from those in a similar position. Even platforms that lacked a concrete gathering point for users were able to connect former believers. One participant described how a platform recommendation algorithm brought them content of others deconstructing their beliefs, personalized to a point where suggested content recovery was prompted by the same disengagement pathway they were grappling with.

5.3.2 **Social aspects of recovery communities**. Connections forged between other believers, often hard to find outside of the Internet, enabled participants to find a community that supported them emotionally and socially. They spoke of experiences where recovery community members helped restore them from feeling broken and shared debunking material to reaffirm their disengagement. For those who were unwilling or unable to discuss their recovery in their offline lives, these communities provided a way to collectively process their experience. Concurrent with the messages of hope and affirmation, positive social media engagement, and expanding social networks for former believers, participants also dealt with the threat and reality of negative online interactions due to denouncing conspiracy beliefs. Several participants documented their experiences with targeted harassment and abuse, usually from current believers of their disavowed beliefs.

> They were relentless. They were creating account, after account, after account to try and you know tell me that I was going the wrong way. Mostly harassment from people from the great awakening. I've only experienced it like once, but I know there are some people within the group who have experienced and more than once—P-08, former New World Order and QAnon believer.

While they found moderation swift in taking down publicly-facing comments in some communities, several participants expressed concerns about being trolled, teased, and disparaged as a result of engaging in online recovery spaces.

5.4 RQ2d: What are the challenges for disengagement or recovery from conspiracy theories online?

We find that even participants whose belief disengagement occurred without a nexus to the Internet eventually returned online to further support their recovery. When reflecting specifically on the role of online platforms in facilitating user disengagement and recovery from conspiracy theories, participants shared challenges and prospective solutions to building and sustaining online spaces supportive of former believers. They detailed how online social pressures and algorithms created resistance to fully extricating from online conspiracy theories, the need for supportive and safe online spaces where those in recovery can share without shame or fear of retribution, and a desire for platform interventions to manage exposure of triggering content and to provide support through moderation action and resources promoting disengagement and community building.

5.4.1 ***Social and algorithmic resistance to disengagement****.* Several participants either directly experienced or indirectly witnessed online abuse and harassment of former believers. One participant recalled how after posting on Facebook about their recovery they began receiving harassing messages of pornography edited to include them and their loved ones. Others cite the implications of moderation on their disengagement. Unrefined algorithmic policing also posed challenges to those former believers who create speaking against their former beliefs. *"We try and make videos, to debunk this stuff and our stuff gets flagged and taken down all the time because we're trying to talk about the conspiracy theory"* (P-07, former Illuminati and New World Order believer). Several participants highlighted how changes to recommendation algorithms could expose more diverse or objective perspectives. One participant commented how conspiracy theory content was often free and visible in recommendation feeds, yet the debunking content was less accessible.

> *The areas where you can find false narratives those are typically areas that are free. You know I can go on Reddit, I can go on Facebook, wherever and anything get fed to me and it's free. It's free media,... I don't have to pay for it. It's easy to consume. But the stuff that is "true"... New York Times, Washington Post, a lot of scientific journals, that kind of thing... that's behind paywalls so it's harder to access—*P-10, former QAnon believer.

5.4.2 ***Lack of supportive spaces****.* Participants found a need for spaces that encouraged positive online social interactions, where former believers could find camaraderie with their peers and acceptance from non-believers. Many former believers were drawn to conspiracy communities due to the social aspects of engagement. Given that many participants expressed shame about their former beliefs or feeling isolated from others on a similar journey, creating and preserving spaces where online users could freely discuss and connect over their recovery was important to them. For some, threats to a safe sharing space inhibited participation, especially for former believers lacking trust or confidence to express themselves publicly to unknown entities. One participant remarked, *"How you going to get these people to talk about it, provide insight, help you with like others, and when they can't even congregate. Like and they're afraid to and they're... Shit, like dude, I get so much fucking abuse"* (P-02, former QAnon believer, moderator of a conspiracy recovery community.).

5.4.3 ***Need for platform-hosted recovery resources****.* Some participants suggested that platforms could provide access to information that countered or debunked problematic points of view. For those who preferred to exclude content that triggered their beliefs, one participant suggested platforms allow users more agency in choosing what type of content they are shown online.

> *A setting where viewing people have political debates of any kind was just optional. Or, just like any things..have to do with politics posted was just optional—*P-05, former Pizzagate and QAnon believer.

Others expressed support towards diminishing access to conspiracy content through deplatforming or through making it more difficult to encounter. Human moderation was seen by some participants as needed to support an environment that encouraged and enabled recovery and to ensure less-discriminatory algorithms wouldn't mistaken self-expression of former conspiracists as content violations. In addition to platforms providing additional content management and moderation resources, participants felt that platforms also had the resources to host and potentially target users with resources for disengagement and recovery pathways.

6 DISCUSSION AND IMPLICATIONS

In this paper, we present findings from in-depth interviews with former conspiracy theory believers exploring their journey in and out of conspiracy theories online. We describe various factors that affect users' engagement (e.g, predisposition, attention-grabbing content, platform recommendations)

and facilitate disengagement (e.g, dissonance with conspiracy theory belief, offline events) from conspiracy theories online. Our results suggest that internet-mediated participation or recovery from conspiracy theories is often a gradual process that leaves a significant impact on the users. In this section, we discuss how our results contribute to the current understanding of the evolution of conspiracy theory beliefs and the process of disengagement, with implications in characterizing trauma of conspiracy theory belief and the design of online recovery communities.

6.1 Engagement into Conspiracy Theories as an Evolving Process

Our results contribute a crucial understanding of how, in many cases, belief in conspiracy theories originates from commonly understood concepts of corruption, manipulation, and influence and slowly evolves towards more extreme and even paranormal ideas.

Such a gradual shift towards extreme narratives is also associated with cult indoctrination [61]. Specifically, at the time of initiation, cults present an official, public doctrine consisting of socially acceptable ideas. Throughout the indoctrination process, however, this narrative can shift towards more radical ideas, inducing believers into a more extreme ideology [61]. For example, new members of the Church of Scientology, while aware of the basic beliefs and requirements to identify with the group, might not be aware of the full extent or implications of the practiced esoterism [50]. This shift can occur from exposure to content once in the community, such as P-03's experience with increasingly conspiratorial information in Ron Paul support groups, or from community pressure, such as P-10's recollection of going along with whatever their QAnon community believed in order to stay in the group. Prior work also documents similar phenomena outside of the online community context, where existing participant interests and beliefs were linked and extended online to conspiracy theories, such as a YouTube video linking genetically modified food with alleged chemtrails plots. They cited how hearing conspiracy theories in the context of familiar content makes it easier to believe [79]. Compounding the issue of conspiracy content already resonating with the beliefs or desires of future believers is the allure of shared community [32].

Understanding this gradual process of conspiracy theorizing can reveal how social media users may come to believe in fantastical, far-fetched versions of reality through seemingly simpler ideas of corruption or political influence. Our results also highlight the need for intervening in the conspiracy theory belief formation process early on. Interventions for increasing participation in online conspiracy theory discussions could be inspired by understanding what makes people lose their conspiracy theory beliefs in the first place. In the next subsection, we discuss the reasons for disengagement in relation to existing theories and how technology can impact the process.

6.2 Extending Belief Disengagement Theory to Online Interactions

In answering RQ2, we recorded several motivations for disengaging from conspiracy theories. For example, participants left conspiracy theory discussions because of experiencing disillusionment with the conspiracy theory ideology or the movement, mental exhaustion, or social conflicts. How do these reasons compare with existing theories of group exit described in the Background section? While the theories of cognitive dissonance [18], role exit [17], or defection [1] were conceptualized outside of the social media context, our results suggest that the relevant social-psychological processes can still be seen in internet-mediated conspiracy theory engagement. For example, P-02, P-08, and P-09 started questioning their QAnon-related belief, and P-11 disengaged from 9/11 theories because of the *dissonance* [18] they experienced through inconsistencies in the conspiracy theories and exposure to counter-information. Moreover, P-06 and P-07 lost their QAnon and Illuminati beliefs by experiencing dissonance through the disinformative narratives on world events such as COVID-19 and mass shootings.

We also see instances of various types of defections—expulsion, extraction—as outlined in Aho's defection model [1]. For example, P-15 was *extracted* out of the QAnon conspiracy theory belief through a mental health treatment. P-08 experienced harassment and anti-social interaction, consistent with what Aho describes as *expulsion* when they publicly questioned their QAnon belief:

Moreover, after exiting the conspiracy belief some participants also created an exit role, or identity, as described in Ebaugh's Role Exit theory [17]. For example, after letting go of extreme belief in QAnon, P-02 became a moderator and an active community member of an online conspiracy recovery community. P-04 and P-06 have also assumed the role of anti-conspiracy theory activists and frequently use Twitter, YouTube, and various broadcasting channels to debunk conspiracy theories. Many of the other participants also see themselves playing the role of a helpful community member in the conspiracy recovery community by sharing their stories and providing empathy and support to others affected by conspiracy theories.

How do these results help in conceptualizing solutions for reducing participation in conspiracy theory discussions online? On the one hand, our results indicate that, may it be induced cognitively or socially, participants experienced dissonance or disillusionment with conspiracy theories in some form. This suggests that technological nudges aiming to instill doubt or critical reflection in conspiracy theory believers could be effective for some users. For example, social media nudges—a choice-preserving technique to steer behavior [9, 68]—contesting contradictions or veracity of conspiracy theory claims could have helped P-02, P-08, and P-09 think more critically. Moreover, in their own words, exposure to counter-information for 9/11 conspiracy theories could have prompted P-04 to come out of their YouTube echo-chamber.

However, we also observe that the actual process of entering and exiting conspiracy theory discussions is affected by a range of factors such as world events and changes in offline circumstances or mental health. Given the significant influence of offline events in peoples' lives, any technological interventions could only make for a partial solution for reducing engagement in online conspiracy theory discussions. For example, in combination with promoting more critical, reflective thinking about conspiracy theory beliefs, it is also important to create online and offline social support spaces and reduce the stigma around conspiracy theory beliefs. We hope that given our findings, future research will take a more intersectional approach toward reducing participation in problematic content online.

6.3 Designing Interventions Around Common Factors in Conspiracy Engagement and Disengagement

Evidence from our results and existing literature show that offline events and online social interactions have the potential to impact both user engagement and disengagement from extreme beliefs [6, 32, 59, 79]. Leveraging insights from these common factors impacting users' conspiracy theory belief journeys can help inform the design of both preventative and prescriptive interventions. Further, incorporating our findings around the user impact of conspiracy theory beliefs (Section 4.3 and Section 5.2) has the potential to optimize interventions to not only counter conspiracy theories online but also to counter the negative toll on believers and their social graph.

We found that conspiracy theories helped users contextualize offline events, providing a more entertaining narrative frame or a more meaningful explanation derived from priming beliefs. Further, conspiracy theories helped users contextualize their own role in offline events through direct participation, providing a way to counter harms from perceived plots or ways to increase self-worth through insider knowledge and activist roles. Prior work echoes the importance of offline phenomena in conspiracy journeys and potential design opportunities. Interventions to provide context and meaning, such as fact-checking and debunking, are difficult to implement at scale and potentially impossible to implement during developing current events [59].

Additionally, the absence of positive social interactions engaging with mainstream society was another constant factor between engagement and disengagement. We affirm prior work in concluding that community culture and supportive connections (or lack thereof) drove users to both engage and disengage with communities impacting their conspiracy beliefs [32, 79]. Multiple participants emphasized how interacting with online users and spaces where they could engage with counter-narrative content and with challenging conversations impacted their assumptions and beliefs. Finding safe spaces to where they could connect and not be ostracized from mainstream society could impact both the journey into and out of the rabbit hole, yet finding such environments for positive social interactions remain a barrier. Much recent literature examines the role of information exposure, through counter-narrative content and echo chambers, and social influence, through persuasive discussions and community-based trust. Online users have found conspiracy information credible based on community trust [6], which we find contributes to both fostering beliefs and having the same impact on disillusionment once trust in the community is broken.

Our findings highlight opportunities to counter conspiracy beliefs during both engagement and disengagement, identifying potential target user cohorts through behaviors and beliefs that could benefit from interventions framed around belief systems or social circumstances. Providing such timely and targeted interventions are important in maintaining the quality of online interactions [39]. Additionally, such interventions could also be adapted to counter the negative impacts of engaging with conspiracy content in these targeted communities. This could be through providing targeted intervention support for mental health and behavior change, or through enhancing counter-conspiracy theory interventions with efforts that redirect users to healthier outlets.

6.4 Implications in Characterizing Trauma and Harm from Conspiracy Theory Belief

Generally, research works on online conspiracy theories highlight the negative consequences of conspiracy theorizing in society and democratic processes. For example, conspiracy theories like QAnon disrupted the democratic process of elections in the United States [21]. Additionally, anti-vaccination theories threatened public immunity towards contagious diseases like COVID-19 or Ebola. Our findings present another less explored side of harm caused by conspiracy theory belief—harm experienced by the believers themselves. The accounts of interview participants provide us a ground to propose that the trauma and harm caused by conspiracy theory belief can be paralleled with the Religious Trauma Syndrome (RTS) proposed by Marlene Winell [77] which is defined as a set of symptoms, ranging in severity, experienced by those who left behind authoritarian, dogmatic, or controlling belief systems. Winell outlines five primary issues—*cognitive, affective, functional, social/cultural, and developmental delays*—some of which have also been reported by our participants.

More specifically, the RTS indicates that *cognitive* issues can manifest as confusion, difficulty with decision-making and critical thinking, dissociation, and identity confusion [77]. Some of our participants reported feeling confused and having difficulty in decision-making. For example, P-07 began questioning the nature of their reality and P-04 expressed feelings of helplessness and decision paralysis. Moreover, we also observe *affective* and *socio-cultural* issues as outlined in RTS where participants reported experiencing extreme anxiety, depression, and rupture in their social surroundings. One participant also reported having *functional* issues as a result of being committed to a mental health institution.

Our work indicates that theories on trauma and harm related to religious indoctrination, such as RTS, can be extended to some types of conspiracy theory beliefs. We hope that future research on conspiracy theories can consider the consequences and harm resulting from conspiracy theory belief, not only from a larger societal perspective but also from the perspective of mental health and social stigmatization of individual believers. Countermeasures proposed to disengage online users from

conspiracy theories often focus on combating the spread of conspiracy theories, using methods such as fact-checking, prebunking, moderation, and redirection [32]. Several of the interview participants indicated that online communities can help in managing recovery from conspiracy theory beliefs. These findings show an additional need for countermeasures to combat the cognitive issues that present barriers to disengagement and continued recovery. Next, we discuss how the research community can help in improving the design of online spaces to better support these additional requirements.

6.5 Implications in Promoting Safety and Inclusivity and Availability of Resources in Online Recovery Communities

Online spaces designed for former conspiracy theory believers allow users to connect with others in recovery, providing empathy and camaraderie where users may gain insight into the information and experiences that resonate with others in their community. Indeed, our participants report benefiting from conspiracy theory recovery communities on multiple platforms such as Reddit, Facebook, and Discord. However, there are also several opportunities for improving safety, inclusivity, and the general availability of resources in online recovery spaces. Our findings provide specific design insights into identifying problems with existing structures of recovery communities. For example, moderators of these communities constantly grapple with the tension between having to keep the community available, accountable, and inclusive while still providing a private and safe place for people to share their experiences.

Moreover, such online recovery spaces are sometimes invaded by current conspiracy theory believers threatening their civility. Our results imply that online recovery communities can be designed to strike a better balance between safety and inclusivity through participatory design and governance [76] and offering users more agency over their interactions [29]. For example, involving users in the governance process can both, distribute the currently overwhelming load faced by the moderators (as mentioned by P-02) and allow volunteer non-moderators to bring in more voices in the community design [76]. Moreover, design modifications such as "sharing hops"—where users can control the visibility of their posts, or "timeboxing"—where users can control the ephemerality of their recovery disclosures—can allow for more privacy and agency in recovery communities while still keeping the communities open for all.

Another important consideration provided by our participants is the accessibility of conspiracy theory debunking resources. Scientifically valid information or conspiracy debunking narratives, either in scientific journals or mainstream news outlets, are often hidden behind paywalls that limit their accessibility compared to the freely available conspiracy theory content. In the future, access to scientific information and fact-checked narratives could be made available inside conspiracy theory recovery communities by collaborating with community moderators.

More generally, investing in designing for inclusive, yet safety-preserving online spaces for former believers of conspiracy theories may be valuable for paving the way out of problematic content in online spaces. Ensuring inclusivity and access to resources in recovery communities can even enable current conspiracy theorists to get exposed to counter-information and the negative impacts of conspiracy theorizing on former believers and their families and friends. In sum, our findings set up a future research space where scholars can explore design solutions that specifically cater to deprogramming and social support for recovering conspiracy theory believers.

7 LIMITATIONS

In this work, our participant pool is limited to internet users who have recovered from their conspiracy theory beliefs. While this makes for an appropriate population to study disengagement and recovery from online conspiracy theories (9/11, alt-right, anti-vaccination, apocalyptic,

Bilderberg Group, Bircherism, false flag, flat Earth, Illuminati, JFK, New World Order, Pizzagate, QAnon, reptilian, Ron Paul-associated, Seth Rich), it also limits our findings around engagement and evolution of conspiracy theory beliefs. In other words, our study could be improved by also interviewing users who currently believe in conspiracy theories. We want to note that recruiting and engaging with current conspiracy theory believers across various conspiracy theories is a challenging process. Therefore, our results only reflect the experiences of those self-attested former believers who were comfortable disclosing their experience on the record. With only three of the participants self-identifying as having the same set of conspiracy theories and over half of the participants subscribing to multiple beliefs, we were unable to isolate trends in user journeys by worldview. Further research could consider measuring such findings at scale.

Additionally, our participant background is influenced by the recruitment seeded primarily from the ex-QAnon communities on Reddit. This has implications for the types of extreme beliefs and conspiracies our participants were exposed to, which tends to bias toward political and conservative conspiracy theories. The implications of this limitation on our findings could have an impact on how participants expressed motivating factors for engagement and disengagement. To account for this, we focused on the common universal themes that spanned user worldviews that manifested in different ways. For example, a common theme in our work was that of social or ideological priming towards conspiracy beliefs. We most commonly saw this as expressed through Christian religious beliefs, which have stronger ties to QAnon theories. Recruitment from a broader range of communities might show additional sources of social or ideological priming we are currently missing. Less prominent sources of social or ideological priming we found, such as interest in the paranormal or lack of trust in the mainstream, might become more common depending on the former conspiracy theory beliefs of the recruited recovery community.

Of note, although the majority of participants were recruited from QAnon conspiracy recovery communities, not all members of these communities ascribed to QAnon or even right-wing beliefs. Several of our participants identified as leaning left politically. Former believers of other conspiracy theories both within and outside of our participant pool still post and lurk in these communities despite not supporting QAnon beliefs or right-wing politics specifically. While we could have increased diversity by recruiting participants associated with more liberal conspiracy communities, such as Twitter and Reddit *r/wheresmelania* users rumoring on the former First Lady's absences from the public eye and alleging body double replacements, we were unaware of online recovery communities from such conspiracy theories. Therefore, to expand access to other communities, we had participants share our recruitment message in their recovery spaces, some of which were inaccessible to outsiders. These and other online recovery spaces are, very understandably, closed off to the researchers and journalists to maintain their privacy. In the future, users from such communities can be recruited by building trust and confidentiality through empathetic research practices, as we have attempted to pursue in this work.

8 CONCLUSION

In this work, we document how online platforms, content, and communities work in concert with offline factors to enable user engagement, disengagement, and recovery from conspiracy theory beliefs. Through in-depth interviews with former conspiracy theory believers, we find that users engaged in conspiracy theories through seemingly benign motives, such as seeking entertainment or desire for social good, and predispositions, such as religious or cultural backgrounds. Our analysis shows that technology played a significant role in the evolution of conspiracy theory worldviews, through both platform affordances and the social aspects of online communities. We identify how although disengagement from online conspiracy theories was in part motivated by online factors, such as debunking or community discordance, it was also motivated by offline

factors, such as current events and "unplugging" from the Internet. Accounts from our interviews demonstrate that participants dealt with personal repercussions of their changing belief systems, and negative impacts on their mental health, behavior, and social interactions. We also unravel how online recovery communities specifically support former conspiracy believers and how online participation generally challenges user disengagement and recovery, highlighting user-generated solutions to help platforms and online communities better support former believers. We reflect on the need for early intervention in the conspiracy engagement process, and how we can leverage our findings to reduce user participation in online conspiratorial discussions. Additionally, we extend existing theoretical frameworks around religious trauma and conspiracy to the social media context. Our work has implications in informing online platform design and community management to better serve former believers in disengaging and recovering from conspiracy theories online. These findings and discussion can be leveraged to inform both further research into the role of technology in changing beliefs and interventions to support belief disengagement and recovery.

9 ACKNOWLEDGEMENTS

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A APPENDIX

A.1 Conspiracy Theory Descriptions

9/11	Theorists allege that al-Qaeda was not responsible for the terrorist attacks in the United States in 2001. Some of the theories about 9/11 are false flag, attributing the attacks to the US Government or insiders seeking to go to war in the Middle East. Others believe the attacks were faked using demolitions or missiles instead of planes.
alt-right	Theories support various conspiracies promoted by the alt-right. This notably includes the idea of the great replacement, where White populations are being replaced culturally and demographically. Other theories pushed by the alt-right include anti-left conspiracies such as Pizzagate, and anti-Semitic conspiracies that blame the Jewish people at the center of covert plots.
anti-vaccination	Theorists allege that vaccines are unsafe. They say that different vaccines cause conditions such as autism, infertility, or paralysis. Some theorists allege that vaccines can be used to surveil and control individuals.
apocalyptism	Theorists allege that the world is going to end, likely imminently. Some theories source doomsday predictions from ancient civilizations, astronomy, or prophets. The Apocalypse could occur due to intervention by God, missteps by mankind, or a natural disaster.
Bilderberg	The Bilderberg Group is an annual conference where influential Western leaders and experts meet privately to informally and off-the-record discuss shared issues. Theorists allege this group is behind a New World Order, is responsible for coordinating harms like economic crises or organized crime, and is withholding the cure to cancer.
Bircherism	Theorists support various conspiracies promoted by the John Birch Society and its followers. Most central to the group is the communist plot to infiltrate the US Government. However, followers also promote a variety of right-wing conspiracies with anti-government and racist sentiments.
false flag	Theorists allege that an entity, usually a government, use deception around an attack. This could be either that the source of the attack was mis-attributed. or the attack was faked altogether. Some examples of false flag conspiracies include Ukranian forces attacking Russian in 2022 and the Sandy Hook shooting in 2012.
flat Earth	Theorists allege that we cannot know for sure that Earth is not flat. They reject expert opinion and demonstrated evidence that the world is a globe. Some do not believe in space. Beliefs in these theories are compounded by institutional distrust and religious beliefs.
New World Order (NWO)	Theorists allege that a group of globalist elites aim to control the world, and states will be replaced with a totalitarian one-world government. Definitions of the elites vary, including socialists, the Illuminati, reptilians, and a satanic cabal. Some believe this will be accomplished slowly through international cooperation, while others believe it will occur quickly through a coup.
Illuminati	Theorists allege that an influential secret society seeks to plot for control of individuals and governance. They allege this group has been active for centuries in media and politics. Some believe this is directly tied to the alleged pursuit of a NWO, while others believe that the Illuminati are targeting individuals for control. These conspiracies are tied to, anti-secularism, and symbology.
JFK	Theorists allege that JJFK's assassin Lee Harvey Oswald did not act alone and refute the official findings of the Warren Commission Report. A variety of co-conspirators are considered, including domestic federal agencies, foreign governments, and organized crime. Some theorists also allege that witnesses and evidence were tampered with.
Pizzagate	Theorists allege that Democratic operatives working for Hillary Clinton ran human-trafficking child-sex trafficking rings. They allege that the trafficking rings and satanic rituals were performed in the basement of a pizza shop in DC. Theorists say that emails from Democratic operatives and politicians contained code words referring to these allegations.
reptilian	Theorists allege that reptilian aliens began interbreeding with humans on Earth to control the human race. They say that as a result some humans have lizard DNA. Some theorists allege that humans in positions of power and influence are possessed by these beings.
Ron Paul-associated	Theorists support various conspiracies connected to former Congressman Ron Paul such as anti-vaccination beliefs, threats of UN overreach, and speculation about US gold reserves. Ron Paul followers also have promoted anti-semitic and homophobic conspiracies. Seth Rich & theorists allege that a Democratic operative was assassinated by agents of Hilary Clinton to prevent him from talking to the FBI about corruption by Bill and Hilary Clinton. They allege there was evidence on his computer that he communicated with WikiLeaks.
QAnon	Theorists allege that a global cabal comprised of powerful industry, political, and media elites are Satanic child-harvesting pedophiles and human traffickers. An online image board poster known as Q claimed high-level government clearance and predicted former President Donald Trump and his allies would counter the cabal through a "storm" of arrests and executions.

Table 2. Table describing various conspiracy theories referenced by participants in this study. The above definitions are not comprehensive and in some cases there is overlap between the theories. For example, Ron Paul is associated with the John Birch Society. Some theories about the New World Order are connected to the Illuminati, reptilians, and the QAnon cabal. However, other threads of these theories may stand alone.

A.2 Interview Protocol

We followed the following interview protocol to loosely structure the interviews.

A.2.1 *Engaging with conspiracy theory beliefs.*

(1) Can you tell us a bit about how you came to get engaged in <theory> (e.g, QAnon)-related topics on the internet?
(2) Where did you find <insert belief> (e.g, 9/11) content online?
  - Probe: How did you find it?
(3) Did you access this content on more than one platform?
  - Probe: Can you tell us about your experience of interacting with such content across different platforms?
  - Probe: Did you get recommended additional platforms and communities on any of these platforms and if so can you tell us about it?
(4) What do you think made you trust the <theory> content online?
(5) Did you increasingly access more topics related to <theory>?
  - Probe: What do you think were the reasons?
(6) Did you experience any personal or professional changes after forming beliefs about such theories?
(7) What role do you think you were playing in this conspiracy belief?
(8) What did you think motivated you for engaging in this belief?

A.2.2 *Disengaging from conspiracy theories and Internet-mediated recovery.*

(1) What made you lose your belief in <theory>?
(2) What were your thoughts or emotions after realizing that you have stopped believing in <theory>?
(3) How did you find online resources or communities, supporting recovery from such beliefs?
  - Probe: Can you provide names of such places?
  - Probe: (if applicable) What made you decide to create such communities?
(4) What led you to interact with these resources or communities?
(5) How did these resources or communities help you stop believing?
(6) What more can these types of communities do to support users better?
  - Probe: (if applicable) Do you have any insights about better platform design as a moderator or creator of these communities?
(7) What more can the internet and social media support users in recovery?
(8) Do you have experience interacting online with other ex-believers or those questioning their beliefs? If so, can you tell us about it.

A.2.3 *The role of online communities in recovery.*

(1) What are some of the challenges when posting in these forums or communities?
  - Probe: Feel free to pick one or two examples when responding to this question.
  - Probe: Why do you think this is?
(2) Do the posts in these communities have any positive or negative impact on you?
(3) Do you have suggestions for how existing recovery resources or communities could be improved for users?
  - Probe: Can you give an example?
(4) Do you have any suggestions on what can be done to promote online disengagement from beliefs in <theory> and other such theories?

A.3 Codebook

Theme	Code	Code Description
engagement	Addiction	referencing addiction language in the context of conspiracy, all cosuming, need fix
engagement	Amends	wanting to counter prior action and apologizing
engagement	Answer seeking	doing their own research, appealing to curiosity
engagement	Anti-establishment	against norms, against institutions, anti-governance
engagement	Attention grabbing	appealing or sensationalized content, attention seeking behavior
engagement	Community identity and culture	sense of solidarity, affiliation, or being connected to or lack thereof with community members or community norms
engagement	Critical exposure	exposure to cross cutting information, views or opinions, debunking, looking at something critically motivating the engagement
engagement	Echo chamber	lack of perspective, seeking or recieving confirmation of already held beliefs, wisdom of the crowd
engagement	Emotional safety net	feeling emotionally safer with conspiracy belief
engagement	Empathy	feeling empathy for other ex-believers, or familty members
engagement	General browsing	through random browsing
engagement	High self regard	motivated by feelings of pride, superiority, exclusivity
engagement	Impotence	feeling unable or unwilling to help a situation, oneself, or others due to lack of capability, situational fatigue, or external locus
engagement	Increasing engagement	wanting more and more content to consume
engagement	Lack of explanation	lack of better alternate to conspiracy theory
engagement	Lack of trust	lack of faith or lack of credibility in content or communities
engagement	Low effort	ease of access and little required
engagement	Low threshold	getting into conspiracies with seemingly harmless, highly acceptable beliefs, more primed for increasing beliefs
engagement	Mental health	mentioning (sometimes self attributed) diagnosis
engagement	Offline circumstances	changes in personal, immediate offline surroundings, workplaces, family, activities
engagement	Online circumstances	changes in online surroundings, such as platform policy enforcement
engagement	Platform affordance	specific platform affordances that contributed to the engagement or disengagement

Theme	Code	Code Description
engagement	Predisposition	predisposition towards conspiratorial thinking, such as fear or religion or biases making content more believable, sense of morality or compatibility of the conspiracy theory with one's values
engagement	Questioning beliefs	expressing doubt
engagement	Service to others	trying to help others
engagement	Snowballing	monologicality, expansion into new beliefs, connections, or communities
engagement	Social aspects	for social acceptance and interactions (opposite social disconnect) or as a result of the social aspects of one's exisitng community/people
engagement	Social disconnect	feeling isolated from one's surroundings or a lack of purpose
engagement	Success stories hope	motivated by stories of recovery
engagement	Targeted browsing	through querying
engagement	Tech pushed referral	through recommendations or suggestions
engagement	Toxic draw	realization of toxicity in conspiracy theory belief, presence of toxic relationship of either an ally or an enemy, fortifying community - online or offline - through growth and isolation, acting to have others make a decision to support and if not then ignoring or fighting against (merged with with us or against us)
engagement	Trust	in community or content
engagement	Under 18 years old	mention exposure to beliefs as a minor
engagement	Unplugging	space from the belief or shut off from the internet
engagement	World events	changes in non-immediate offline - events or with the conspiracy theory leaders
impact	Behavior change	negative change in behavior or beliefs example . NEGATIVE SELF CHANGE
impact	Harassment	experiencing or threatened with targeted retribution for beliefs
impact	Impotence	feeling unable or unwilling to do anything due to lack of capability or situational fatigue or external locus to help a situation, oneself, or others
impact	Negative mental health	sad, depressing, inciting fear
impact	Positive mental health	relief, happy, hopeful
impact	Self correction	deprogrammed or learned helpful information (recollecting not motivating)
impact	Shame regret	expressing feelings of embarressment, shame, and regret over beliefs or actions
impact	Social disconnect	getting socially isolated as a result of belief
participation	Content contribution	participating / commenting posting\n

Theme	Code	Code Description
participation	Intervening	intervening when someone else spreads conspiracy theories or is questioning beliefs
participation	Lack of participation	unsure of how to engage/help, unsure can engage productively for others or self
participation	Lurking	passive participation, no active involvement in a community
participation	Non content contribution	financial, service-moderation, like/dislike engagement
participation	Real world crossover	participating in the real world
participation	Sharing	this should include sharing, recommending, sugegsting, pushing content onto other people in person or online
recovery challenges	Community participation	lack of feeling of community, lack of co-survivors speaking up
recovery challenges	Community resources	moderation and other assistance
recovery challenges	Impotence	feeling unable or unwilling to do anything due to lack of capability or emotional or situational fatigue or external locus to help a situation, oneself, or others
recovery challenges	Lack of trust	do not trust the platform or community
recovery challenges	Mental health	negative mental helth that keeps people from participating in recovery communities
recovery challenges	Moderation	of accounts or content, getting accounts banned after recovery for discussing conspiracy related topics, even for debunking
recovery challenges	QCasualty	having someone in family get into conspiracy theories
recovery challenges	Recovery resources	accessible mental health and deprogramming/recovery information
recovery challenges	Safe space	the need for an environment where privacy, users, and interactions are respected and buffered from threats of reputation damage, social consequences, being outed for beliefs, and harassed
recovery challenges	Tech exposure	getting exposed back to conspiracy content after wanting to get out
recovery solutions	Critical exposure	exposure to cross cutting information, views or opinions, debunking, looking at something critically motivating the engagement
recovery solutions	Low threshold	using the low entry threshold engagement strategy on others
recovery solutions	Mental health	need to provide mental health for anxiety, toxicity of conspiracy belief

Theme	Code	Code Description
recovery solutions	Moderation	online and offline (dealing with consequences), moderation, bans, and deplatforming
recovery solutions	Recovery resources	mental health, information, accessible
recovery solutions	Safe space	need for an environment where privacy, users, and interactions are respected and buffered from threats
recovery solutions	Social acceptance	feeling accepted by other believers, family, friends, society in general\n
recovery solutions	Social interactions	exposed to more people not related to conspiracy belief
recovery solutions	Tech interventions	platform interventions