Accidental Spreaders: How Different Roles Interact During Misinformation Discussions

Lauren Scott[1], Mark Warner[2], Lynne Coventry[3] and Marta E. Cecchinato[1]

[1] Northumbria University
[2] University College London
[3] Abertay University

lauren8.scott@northumbria.ac.uk

Abstract. The spread and impact of misinformation can be limited through effective misinformation corrections, and social corrections (i.e., corrections from friends and family) can be effective. Most prior research has focused on understanding social corrections within online social media platforms among weak-ties, with close-tie networks being overlooked. Drawing on findings from a survey of UK residents ($n = 61$), we investigated how, where, and why participants discuss misinformation. We find that within family and friend networks, misinformation is often spread through offline channels. We find people drawing on their social network for support, helping them with social corrections. However, we find this support can result in accidental spreading of misinformation. Our findings provide justification for considering legacy communication channels (e.g., talking) when designing to limit misinformation spread, and the need for tools to support people in correcting misinformation that reduce the risk of inadvertent spread.

1 Introduction

Misinformation proliferates through digital ecosystems, in-person conversations, and across print media. It poses risks to health decisions (e.g., (Allington et al., 2021; Bode and Vraga, 2018; Bautista et al., 2021)), disrupts public discourse (e.g., (Van Raemdonck and Meyer, 2022)), and plays a significant role in shaping people's beliefs and identity (Vraga and Bode, 2020a).

Multiple studies have investigated the efficacy of social misinformation corrections on social media platforms (e.g., (Vraga and Bode, 2020a)). These studies show how corrections can help reduce belief in misinformation and can be more effective when made by close ties (Bode and Vraga, 2018; Pasquetto et al., 2022). This aligns with findings showing how digital endorsements and discussions between friends on social media platforms can shape preferences when selecting information to view; personal influence is a more effective heuristic than ideology (Anspach, 2017).

However, much of the research on misinformation spread and the interventions that reduce it, has been conducted within the context of online social media platforms (Altay et al., 2023) which are often seen as barriers to effective conversations about misinformation (Scott et al., 2023a). Other methods of transmission are overlooked. Thus, this work explores the following: *How do offline communications influence misinformation spread?* and *How do different actors interact where misinformation is discussed?*

To help us answer these questions, we conducted a qualitative survey with UK residents ($n = 61$) to investigate previous experiences with misinformation, how it spreads, and how it is discussed (or not) within close-tie networks.

Our work contributes insights into misinformation spread and social corrections within close tie networks (e.g., friend and family networks). While spread is occurring between the misinformation spreader and receiver, we also identify a third actor within the interaction, used by the receiver to support them in socially correcting the misinformation that has been spread. We find this support-seeking behaviour exasperate the spread of misinformation and misinformation beliefs. This raises important questions and considerations for how we design misinformation corrections.

2 Background

Although there are different definitions of misinformation, it can be broadly defined as *"incorrect information shared without harmful intent"* (Madraki et al., 2021) considered false *"based on the opinion of relevant experts at the time"* (Vraga and Bode, 2020b). We use this definition within this work. Although misinformation spreads across public social networking platforms (Mena et al., 2020; Vraga and Bode, 2017) it also spreads within private channels (e.g., friend and family WhatsApp groups (Resende et al., 2019)).

Misinformation poses particular risk where there is low public trust in institutions (Van Raemdonck and Meyer, 2022; Rawlinson, 2020; Vidgen et al., 2021) and can have a significant effect on individuals' health, well-being, and identity (Vraga and Bode, 2020a). Due to its dangers, misinformation correction is an area currently being explored by HCI researchers (McClure Haughey et al., 2022; Scott et al., 2023a; Malhotra, 2020) covering many areas; including preventative and cure-type digital interventions (e.g., (Vraga and Bode, 2021; Roozenbeek and van der Linden, 2019; Aladeen et al., 2023; Bode and Vraga, 2018). However, less is known about how misinformation corrections occur within close tie networks (e.g., friend and family networks). This is especially important as there is an increased expectation for users of private, more intimate and often encrypted messaging spaces to correct misinformed beliefs of friends and family members (Malhotra, 2020), or to correct it within conversations where misinformation is spread offline.

2.1 Misinformation and how it spreads

Research into misinformation spread tends to focus on large social media platforms such as Facebook (e.g., (Allington et al., 2021)), Instagram (e.g., (Mena et al., 2020)), and X (e.g., (Vraga and Bode, 2017)). This is due to exposure caused by echo chambers that can be exasperated by algorithmic feed curation systems (Cinelli et al., 2021), which promote identity-relevant content and emulate social consensus on topics (Schwarz and Jalbert, 2020). Platforms differ in their structure and design, but most involve the sending of short messages, typically containing simple language, which are shared with personal connections (e.g., friend, family); making the information appear more credible (Schwarz and Jalbert, 2020). However, not all platforms connect known ties. For example, X often consists of larger weak-tie networks consisting of both high and low-influence users. On this network, misinformation typically originates from high-influence users and is re-shared by low-influence users (Ackland and Gwynn, 2020).

In some countries, those exposed to offline misinformation are more susceptible than those exposed to misinformation online due to limited information literacy and trust of information from circles where it spreads (e.g., family and friends) (Oxford Analytica, 2023). Furthermore, in some age groups, individuals share and engage with misinformation as a means of mirroring views of those within their social circle (Hassoun et al., 2023).

As most prior research on misinformation spread and correction focuses on these platforms, we have limited understand into how misinformation spreads through channels such as one-to-one conversations (Scott et al., 2023a), and how these channels impact both spread and correction (Altay et al., 2023). This lack of understanding means interventions to address misinformation are less able to consider these legacy communications channels within their design. Thus, we pose the following research question:

*(**RQ1:**) How do offline communications influence misinformation spread?*

2.2   Correcting misinformation

Information that aligns with a person's identity is more likely to be believed (Dawson and Oyserman, 2020), and repeat exposure to the same false information can cause it to become part of their identity; at which point the misinformation is significantly harder to correct (Vraga and Bode, 2017). Faster and more effective corrections can help alleviate these risks and these corrections can either be platform-based corrections (e.g., through the use of AI), or social corrections (e.g., someone correcting their friend). Although online platforms make attempts to correct/limit the spread of misinformation online (e.g., (Geeng et al., 2020; Meta, 2023; Saltz et al., 2021; Sharevski et al., 2022a)), as a result of public pressure to curb misinformation spread online (Santos Rutschman, 2020), individuals on and offline often have a role to play in correcting misinformation.

2.2.1   Expert and social misinformation corrections

The role that individuals can play in correcting misinformation has been the focus of research across multiple domains, including HCI. This covers both individuals/online accounts who are representatives of large organisations (e.g., a doctor (Southwick et al., 2021; Kameshwara et al., 2021)), and individuals who share a prior relationship with the misinformed individual (e.g., a friend or family member (Bode and Vraga, 2018)).

Research on the role of corporations and professionals in correcting misinformation spread online has generally utilised a false social media feed with misinformation examples, accompanied by a refuting or challenging message. For example, Vraga and Bode (2017) investigated the role of expert corrections of misinformation, finding them to be more effective than those from unknown ties. Studies have also explored the role that targeted messages from medical professionals can have when correcting misinformed beliefs, showing these messages as being effective when the messenger and recipient share aspects of their identities (Kameshwara et al., 2021).

Although research indicates that algorithmic corrections of misinformation is as efficacious as social corrections from unknown individuals (Bode and Vraga, 2018), prior research has shown how people who share misinformation are better corrected when they share a close tie with the person correcting them (Vraga and Bode, 2020a), supporting the findings from Kameshwara et al. (2021). This is perhaps unsurprising given that prior research shows how those that share a close tie provide heuristics that make information appear more trustworthy, irrespective of political orientation or prior views, whereas unknown individuals have little effect (Anspach, 2017). This puts family members in an ideal position to correct false information and beliefs. However, prior research finds that individuals have a tendency to avoid these conversations; either as a coping mechanism (Scott et al., 2023a), to avoid conflict (Vraga and Bode, 2017), or to avoid offending the

misinformed person (Malhotra, 2020). Research has also shown that, when close ties discuss misinformation on social media, these discussions can result in similar levels of disconnect and conflict as conversations that are of a political nature (Davies, 2021; Leung et al., 2021).

Despite this, people can become motivated to discuss misinformation to educate or change the views of the misinformed person (Scott et al., 2023a). However, conversations do not always occur in the presence of digital misinformation mediators (such as gamified learning tools, or online social media flags) have been built. Instead, they occur within conversations conducted via face-to-face, telephone, and online messaging channels (Scott et al., 2023a; Pearce and Malhotra, 2022; Malhotra and Pearce, 2022).

These conversations are often supported with the use of external sources of information (Vraga and Bode, 2018), and through help from individuals with a higher authority within the family (Scott et al., 2023a). People also use conversational strategies to support then, such as using humour (Vraga et al., 2019), and talking about the ideals behind the misinformation without directly addressing the misinformed person's mistake (Malhotra and Pearce, 2022).

While existing literature has explored how tie-strength impacts conversations about misinformed views (Scott et al., 2023b), this prior work is based on fictional scenarios and so may miss insights into *real world* behaviours. To address this gap we pose the second research question: (***RQ2:***) *How do different actors interact where misinformation is discussed?*

2.3   Terminology Used Within This Paper

Throughout, we discuss the perspectives of individuals who considered themselves to be exposed to misinformation. To further clarify this perspective, we distinguish between three roles, especially when presenting the qualitative results. Firstly, *the spreader*, the individual who exposed our participant to information that our participant considered to be misinformation. Secondly, *the recipient*, the person who received the misinformation from the spreader and who we recruited for our study (thus also referred to as participants). Finally, *third parties* (a novel role found within this study) is someone external to the misinformation discussion, but is either directly or indirectly involved in the conversation to question the credibility of the misinformation, outside of the dyad of spreader and recipient. It is worth noting that we have not assessed which individual in the interaction is actually the misinformed person.

2.4   Survey Design

In the survey, we asked for background information such as how often participants thought they were exposed to misinformation and where (e.g., online, in the home), followed by questions to understand their most recent experience of misinformation exposure. Questions included: who shared the misinformation and

how; whether they perceived the spreader or creator as wanting to cause harm; the topic of the misinformation and how credibility was assessed; and what resources, coping mechanisms, and people were involved in the communication where misinformation was spread. We included a mixture of closed-ended questions (Likert-scale, multiple choice questions) and open-ended questions (text-entry) to explore participants' experiences and views. The full set of questions can be found within the supplementary materials.

2.5   Participant sample

Our participants ($n = 61$) were all UK residents that had previously encountered misinformation. Of the 61 participants recruited, 37 identified as female, 26 as male, and two as non-binary; ages ranged from 18-60+, with the most common age being 30-39 ($n = 27$) (see Table I).

Sample Characteristic		Amount (n=61)
Gender	Male	24
	Female	35
	Non-binary	2
Age	18-29	23
	30-39	25
	40-49	6
	50-59	5
	60+	2
Misinformation exposure in last year	1-5 times	22
	6-10 times	13
	11-20 times	11
	21-30 times	6
	31+ times	8
Discussed misinformation with spreader	Yes	30
	No	31

Table I. Table showing sample characteristics of participants.

2.6   Analysis

We conducted a Reflexive Thematic Analysis (Braun and Clarke, 2021) using a semantic coding approach on the qualitative data, coded by the first author to generate initial codes and themes within Excel. The data was then re-coded by hand offline and compared to the first iteration, before using printed segments to organise the data into groups that would later become candidate themes, reviewed by two co-authors. Following this, the coded data and themes went through a final review to clarify the names of themes, and to refine the scope of the developed sub-themes.
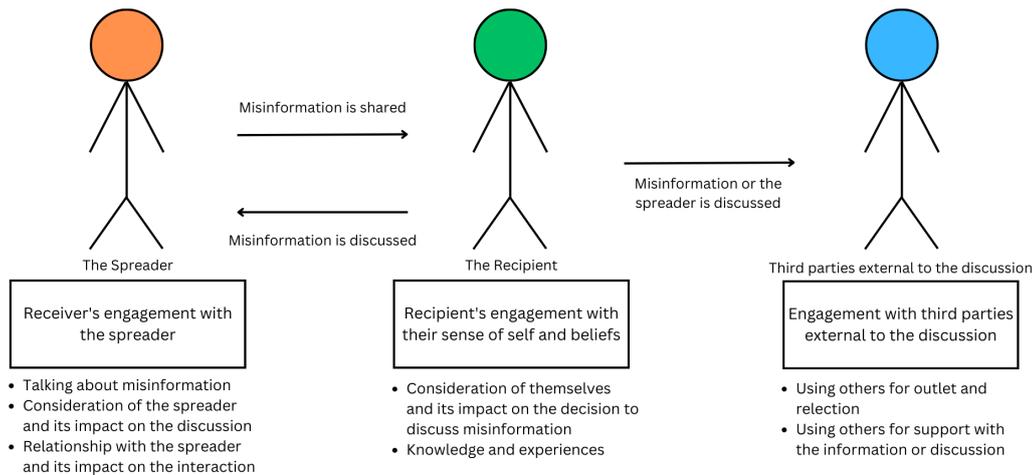
Figure 1. The actors within the interaction with corresponding themes and sub-themes.

3   Findings

3.1   Qualitative Results

Through a Reflexive Thematic Analysis of the data, we developed three themes. Each relates to an actor involved in the misinformation exposure interaction (see section 2.4 for terminology): (1) recipients' engagement with the spreader, (2) recipients' engagement with their sense of self and beliefs, and (3) recipients' engagement with third parties external to the discussion. Data from these themes is collected from the perspective of recipients (the study participants). Each theme has a variety of sub-themes, described below, and presented in Figure 1. This figure also shows how the actors in this interaction communicated. The spreader shared misinformation, leading to discussions about its credibility with the recipient. Meanwhile, the recipient sought input from others outside the original conversation to talk about the spreader or their misinformation.

3.1.1   Recipients' engagement with the spreader

The interactions between the recipient (our participants) and the spreader are multifaceted and can be affected by relationship characteristics between the two, and how these relationship characteristics interplay with concern that both feel for each other. This theme explores these engagement and the different elements that can affect them.

Talking about misinformation   People's motivations for sharing misinformation can vary. While we did not recruit spreaders of misinformation, we were able to

understand the recipients' perceptions of sharing and found some perceived an intention to cause harm on behalf of the creator/spreader where misinformation was shared. However, others assumed a level of carelessness was the cause, with one participant stating: *"many people are either just trying to look out for each other or sharing something they find interesting"*. Moreover, we found information was sometimes shared simply because the spreader had received it from a person they viewed as credible.

Participants most often experienced misinformation being shared during face-to-face conversations; although it was not documented whether they were aware it was misinformation at that moment. These conversations occurred at different times, with some occurring during mealtimes (e.g., *"we met out for food and drink and it was during a conversation"*), and others during conversations while driving or in the workplace. Misinformation was also discussed at notable events such as birthday parties, and at significant points in time such as hospital visits. However, for others these conversations were simply part of *"casual"* chats at home.

Not all participants reported misinformation being shared via face-to-face communication. For some, misinformation was shared via social media channels such as Twitter (X) and Facebook posts, or through messaging platforms and phone calls. While misinformation was shared via these channels, the same communication channels were not commonly used when discussing the misinformed beliefs. Participants voiced concerns over the public nature of social media platforms; for example, one participant stated: *"I don't really comment actively on social media and when it's shared with so many people"*. Others were concerned over the *"social appropriateness of commenting on Facebook posts"*.

Consideration of the spreader and its impact on the discussion   Despite them spreading misinformation, participants had concerns for the spreader. We found these concerns affecting how and whether participants chose to discuss the spreader's opinions and challenge the credibility of information that they shared.

They reported feeling discouraged to address the misinformation with the spreader because they *"didn't want [the spreader] to feel silly or gullible for believing what they had read. [Participant] also did not want them to feel like [participant] was patronising them"*, and therefore was concerned about how this would come across to the spreader. There were also concerns over how any discussions could potentially devolve into either conflict or be perceived as criticism (*"I knew it would start an argument ... so I decided not to bother"*).

However, there were also concerns for the spreader's well-being; these concerns caused participants to help educate the spreader on why the information they had spread was incorrect, to protect them from harm. Those that did discuss the misinformation, highlighted a desire to maintain respect towards the spreader, and to respect their privacy; this finding is consistent with the prior finding that participants preferred not to discuss it on more public platforms. Moreover, some chose not to discuss the spreader and their actions with others, as they wanted to

keep the conflict *"just between us"*, and not have others judging the spreader as a result of this interaction.

Relationship with the spreader and its impact The type of relationship that participants had with the spreader impacted both how the participant engaged with the misinformation that was shared, and how they believed they would be perceived by the spreader if they were to discuss the credibility of their information with them. Participants utilised their prior knowledge of the spreader as a credibility indicator for the information they were exposed to (*"I knew from this person to have to question their sources of information"*). Sometimes, this was due to personality characteristics that the spreader or recipient held, with the spreader sometimes considered to be less capable of discerning the veracity of information (*"My dad is not that academic so this may have been lost on him")*.

While personality characteristics were used to help participants assess the veracity of information, it was often the nature of the relationship and the perceived knowledge and beliefs of the spreader, that would affect whether the recipient would engage in discussions about credibility of the information. For example, one participant spoke about the strength of their relationship with the spreader, stating "*I don't consider my friendship with them... to be strong enough to necessarily warrant such a discussion with them"*. Participants who perceived the spreader to have deeply rooted beliefs often avoided discussing credibility of shared misinformation, with one participant stating *"it is very hard to correct someone when they have strong personal beliefs about some topics"*.

Participants also utilised their knowledge of the spreader to determine whether the information they shared was true or not (*"[The spreader] seemed to know this was true and this person doesn't normally lie"*). In this case, the information was seen as truthful due to the trust the participant had in the spreader.

3.1.2   Recipient's engagement with their sense of self and beliefs

Much of the information above has focused on how participants engaged with the spreader. This theme also highlights how participants viewed themselves during the process. As they interacted with the spreader, they reflected on their own role in the discussion and anticipated what they might experience. This theme captures their concerns about how the discussion could affect them, how it influenced their decision to address misinformation with the spreader, and the confidence they had in their own knowledge and experience.

Consideration of themselves and its impact on the decision to discuss misinformation In the aforementioned results, we present findings on how participants' consider the spreader, and potential consequences to the spreader due to the challenge. This sub-theme refers to participants' considerations for their own well-being, the state of their relationship with others, and how the misinformation spread may affect them.

Participants were concerned with preserving the state of their relationship with the spreader post-discussion, and suffered emotionally when they were exposed to the misinformation from someone they cared for; making discussing misinformation less likely.

Participants stated that the misinformation was *"frustrating when it comes from your loved ones"*, *"irritating"*, and that they would avoid discussing the misinformation because they did not want to get *"upset debating the topic"*, they wanted to protect themselves from these negative experiences. As we highlighted above, misinformation discussions can result in conflict, for example: *"The person has many very dedicated followers and I did not want to engage in online conflict"*. Participants' desire to protect their own well-being and preserve existing relationships that mattered to them, was often a driving factor in not discussing the misinformation with the spreader, with participants stating *"often aggression and hostility come into play and make it impossible to discuss misinformation"*.

Knowledge and experiences Prior knowledge and experience was used by participants as a way of assessing the credibility of information; sometimes, this knowledge and experience meant that other resources (e.g., fact checkers) were not used. One participant stated: *"the misinformation was corrected by personal experience"*, and some considered themselves to be *"well read"* and *"well versed in the science"*. In some cases participants provided justification for why their personal experiences would result in them being well suited to discuss the misinformation (*"Because they were telling me their own beliefs (as if it were the truth) on matters that I knew to be incorrect. These matters were relating to assumptions they had made about political refugees staying in the village, but as I'm a member of a group supporting these refugees and my family member wasn't, I knew their assumptions were incorrect as I was aware of the full story!"*). It was rare that participants would doubt their own evaluation regarding veracity of the information, however one participant stated that they chose not to discuss it due to a lack of experience with the subject matter.

3.1.3   Engagement with those external to the discussion

While the previous two themes focused on the recipient and the spreader, we also found a third actor involved in misinformation discussions. These were individuals that were external to the discussion, but with whom the recipient engaged with to support and help them with the discussion.

Using others for outlet and reflection We found participants engaging with people external to the discussion to express their frustrations: *"I told him about the person [sic] views and how stupid they were, I was just venting and knew he would understand as he shares the same views as me"*. Participants wanted to share the opinions of the spreader with someone they considered trustworthy, and with whom they felt their beliefs would be supported (e.g., friends, siblings, partner).

This allowed participants to have some closure and they were able to *"brush it off"*. Participants also reflected on the conversation with their peers, without any particular gain (*"We talked about what had been shared on Facebook, I did not hope to gain anything from this. This was part of our regular chats"*). Some used these conversations to help bolster their own beliefs; for example one participant stated: *"We spoke about how we shouldn't believe old fashioned cultural beliefs on religion, because it's usually not true"*, while others discussed the individual and their personality, stating: *"We talked about the misinformation and how the person spreading it always thinks they're right so it's hard to debate it"*. For others, they engaged with external individuals to discuss the misinformation shared, but were not *"looking to gain anything"* from the conversation.

Using others for support with the information or discussion Participants also used individuals around them as a mechanism for support and reflection, both during and after the conversations themselves. Participants used those around them as a way to process the conversation (*"we spoke about how insane my brother is - I guess we [participant and their dad] wanted to get re-assurance from one another"*), with others using people outside of their immediate network to gain additional information (for example, *"Facebook members group where the situation was relayed in detail, which I knew to be correct"* and *"activist social media pages"*). Additionally, this seeking of support was also seen from the other perspective - the spreader seeking support from the participant.

Some participants chose to discuss the misinformed beliefs with those around them to limit the spread and reduce potential harm to their loved ones. One participant warned their peers that *"we should be careful about her because she was very unlikely to get vaccinated"*, an assessment made based on the misinformation they were sharing.

Up until now we have spoken about the spreader, recipient, and those external to the discussion as standalone actors within the interaction. However, an important element to note here is that some participants of this study self-reported their exposure to misinformation when *others* (recipients or third parties) turned to them for support In these cases, the participant themselves became involved when the recipient sought help (i.e., a recipient seeking support from an external person, who in this case was the participant). Multiple participants shared that a recipient of misinformation either used the participant as a means to identify whether information was credible, or that they had encountered the information and wanted to share due to the response they had to said information (*"they had read something on Facebook and they were shocked by it"*). These examples show that at least in some instances where misinformation is shared, recipient look for support from people who had not been involved in the original communication (third parties). In these instances, individuals within the interaction held multiple roles: the individual who was at first the recipient of misinformation, later became the spreader (presumably unintentionally); and the individual who was external to the discussion suddenly becoming the recipient, and in this case considering

themselves to be exposed to misinformation at the point of contact with the previous recipient. This action of looking for support from third parties was considered, by a subset of our participants, as the point at which they became exposed to misinformation (see: Figure 2).
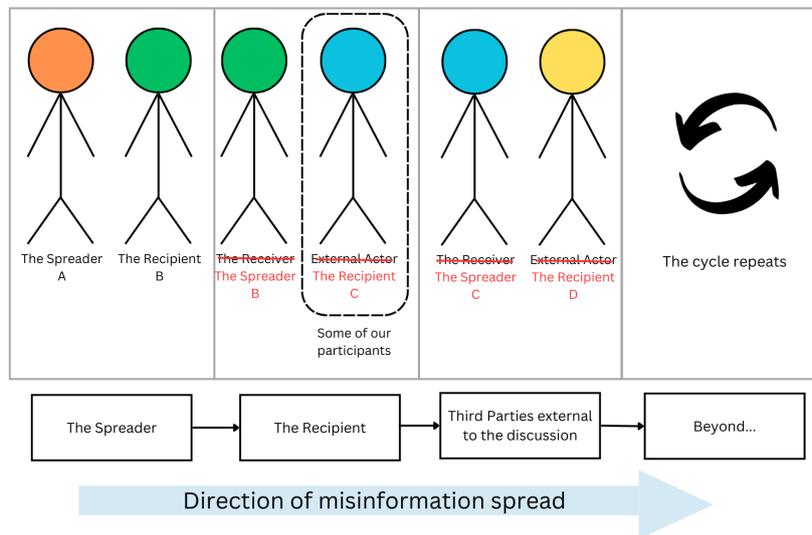

Figure 2. The direction of misinformation spread.

4 Discussion

Findings from this work point to our main novel contribution that builds and extends upon prior work: crucially, this is the first paper to have characterised the role of third parties within interactions involving misinformation spread/discussion, including as part of accidental misinformation spread due to individuals seeking support from others. Our findings also provide insights into how misinformation is spreading within inter-personal networks, an important element to consider when designing or conducting further research in this space, and is often overlooked when researching misinformation spread. In this discussion, our findings are explored within the context of prior literature, building upon existing understanding provided by related literature regarding mediums of misinformation spread, showing that offline spread is occurring within close-tie networks, and how this and subsequent discussions about misinformation take place in a UK context.

4.1 The Third Actor of Misinformation Discussion Interactions

Misinformation research typically focuses on the effect misinformation has on recipients (e.g., (Van Raemdonck and Meyer, 2022)), how to converse about misinformation from both digital and offline perspectives (e.g., (Scott et al.,

2023a)), and how we can inoculate people against misinformation (e.g., (Roozenbeek and van der Linden, 2019)). Our work extends prior research by exploring different roles held within the interaction - including third parties which were previously overlooked.

Related work has already shown the role that family members hold in creating a group narrative to challenge misinformed views, and as a coping mechanism to vent frustrations (Scott et al., 2023a). Research has also explored the use of trusted/credible individuals in pre-bunking/inoculation messages to try and counter misinformation ahead of exposure (e.g., (van der Linden et al., 2020, 2017). However, where pre-bunking is often controlled and typically involves experts creating carefully crafted messages to help reduce misinformation belief (Vraga and Bode, 2017), the use of third parties in our work is uncontrolled, and can potentially lead to more false/misleading information spread being.

Our work suggests that, from a recipient's perspective, when faced with an individual discussing others sharing misinformation, they consider themselves exposed to misinformation. Whilst exposure does not necessarily translate into belief change (Altay et al., 2023), information from close ties is more likely to be believed and thus the impact of this exposure may be increased. This can occur where the individual discussing the misinformation is not intending to misinform, but rather merely sharing that others are misinformed (as reported in this work). This suggests that when people seek support from third parties (e.g., to vent frustrations or to validate the information or view), they may become an accidental spreader.

This poses multiple risks when it comes to misinformation spread and correction. Firstly, if during the process of misinformation correction individuals go to others for support, to vent frustrations (Scott et al., 2023a) or ask others to discuss the credibility of the information (Malhotra and Pearce, 2022); they may be inadvertently increasing the spread of the misinformation. Additionally, van der Linden has highlighted that "the more often you hear a statement, the more 'true' it sounds" (van der Linden, 2023), and it is well understood that misinformation can become a part of an individual's identity (Vraga and Bode, 2020a). This potentially furthers the danger that third parties, previously support mechanisms for a receiver, later comes across the same piece of misinformation and subsequently becomes misinformed. This dimension to third parties has so far been missed in misinformation research, and to fully understand the spread and subsequent correction of misinformation, researchers should consider the role of these third parties, and how to prevent misinformation spread to them.

4.2 Further Barriers, Motivations and Resources Associated with Conversations About Misinformation

We know from existing literature that there are a range of barriers that impact conversations about misinformation, including: personality, reaction, communication medium, effort, difference to regular chats, and not knowing they

were misinformed (Scott et al., 2023a), in addition to politeness and the role within the family (Malhotra and Pearce, 2022). Prior research has explored effects of tie-strength on misinformation correction (Scott et al., 2023b), finding tie-strength did affect how individuals choose to act when exposed to spreaders. Within this work, our participants described the strength of their friendship and how it affected their willingness to discuss the misinformation. Our participants also utilised personality as a method of establishing information credibility, turning it into a resource rather than a barrier (as introduced by Scott et al. (2023a)). Our findings also described how considerations for the well-being of the spreader and the recipient, affected the willingness to discuss misinformation - when participants were concerned that discussions might harm either party, they were hesitant to confront them. Most current designs focus on immediate flagging of misinformation, with research focusing on social correction recommending that users play a role in refuting misinformation they encounter (Bode and Vraga, 2018), however our results show that individuals may not be willing to engage with discussions within close-tie networks.

Previous studies found concerns about how conversations aimed at correcting misinformation differ from everyday discussions (Scott et al., 2023a). They also highlight the additional care and attention required when addressing misinformed beliefs within family settings (Scott et al., 2023b; Malhotra and Pearce, 2022; Pearce and Malhotra, 2022). In our work, participants reported misinformation spreading during conversations with peers, often mentioning specific locations, such as at a party or in a hospital. They described how misinformation spreads particularly in offline conversations, outside the reach of systems designed to counter spread. Social corrections are further limited in that standards for assessing and verifying veracity of information can vary between individuals (Venkatagiri et al., 2023). Furthermore, increased time between exposure and discussion can increase the difficulty of discussions about misinformation. Therefore, it is key that recipients are discussing the misinformation soon after exposure. Correcting misinformation requires more time and preparation and feels different from a typical chat (Scott et al., 2023a), meaning that recipients may not feel prepared to discuss misinformation at the point it is shared.

Additionally, research has identified a range of tools and resources to support those who discuss/alter misinformed beliefs; including individuals with a higher authority, humour, group narratives, external sources of information (Scott et al., 2023a), and the use of others that know the misinformed individual better than themselves (Malhotra and Pearce, 2022), some of which may need to be gathered in advance. We have expanded on this, finding that in some cases, individuals feel that their prior experience is sufficient in supporting people discussing/altering beliefs. Where this is not sufficient, people may engage with external sources such as social media. Prior research highlights how individuals use websites that have factual information to assist their discussions (Scott et al., 2023a). We found that people also consult online communities and pages that they found trustworthy/considered themselves to be part of (including activist social media pages). Another strategy

we uncovered was using those around them as a way to measure misinformation credibility, helping them make sense of the information presented to them before addressing the credibility of the misinformation with the spreader.

4.3 Considerations when designing for misinformation correction

Our work highlights several challenges that impact people's ability to challenge misinformation. Yet, we know that people develop different strategies to help them manage these sometimes difficult to have conversation about misinformation. For example, when discussing conspiracy theory beliefs, Pappas (2023) advise against appealing to emotions and having debates about facts and instead focus on prevention, and supporting the affected individual by helping them to develop an evaluative mindset. By advising individuals in how they can combat misinformed beliefs, platforms could help people develop knowledge and skills to more confidently and effectively correct misinformation offline. We suggest that this type of advice could be built into platforms, or provided by relevant organisations, providing online support for offline misinformation correction conversations.

Platforms already have a role in combating beliefs in false information. Our work highlights the increased exposure to misinformation that is occurring as a result of discussions regarding misinformation credibility with third actors, something that has not been previously identified. When designing to both prevent misinformation spread and support those engaging in these discussions, we need to consider how third actors can be responsibly integrated into misinformation discussions, whilst still allowing receivers access to support they need. To prevent those external to an immediate discussion from adopting misinformed beliefs when being used as a support mechanism, the integration of some sort of indicator when conversations about common topics of misinformation are taking place, could assist with these third parties spotting that the information shared is misinformation. This may involve adding flags to messages where any potential misinformation is spread, similar to how WhatsApp shows users how many times a message has been forwarded (de Freitas Melo et al., 2020). Alternatively, providing some form of visualisation showing the likelihood of information being misinformation, similar to Kavaz et al.'s suggestion for message toxicity (Kavaz et al., 2021), to try and highlight the likelihood that misinformation has been shared, could potentially lead to less adoption.

Both researchers and designers should also consider the location of misinformation sharing when designing to support people with these discussions. We find individuals preferring misinformation conversations being either face-to-face or in online synchronous channels, as opposed to online asynchronous channels. Related work suggests that this may be due to a lack of personal, emotional, and non-verbal cues available within online asynchronous platforms (Scott et al., 2023a). This may be due to the location in which misinformation is spreading, and how people perceive the social norms present within these channels, making them less hospitable locations to converse about

difficult topics; prior research shows how individuals do not consider digital platforms as the ideal means to converse about misinformed beliefs (Scott et al., 2023a).

We should also consider how technology is used to intervene on spread offline, to support offline discussions about misinformation and misinformed views. One way this could be conducted would be to add obtrusive interventions to alert users when they may be spreading misinformation, even when this spread is unintentional. Platforms already utilise obtrusive interruptions to accessing misinformation, with these interventions being the most successful of those used in platforms (Sharevski et al., 2022a); but these approaches could be replicated in an offline environment in an effort to limit offline spread. One method to address this in a face to face conversation could be via the use of voice activated technologies to detect misinformation spread and potentially provide a contested viewpoint. A similar approach has been explored by Feltwell et al. around news polarisation (Feltwell et al., 2020) where they developed a smart speaker that pushed different viewpoints on current affairs into the home.

5   Limitations and Future Work

This work has a variety of limitations, including survey respondents being skewed towards younger individuals, and the small sample size. Additionally, no pre-understanding was established about participants' folk models of misinformation (Sharevski et al., 2022b); this was mostly due to our study focusing on the interaction, rather than the information.

Future work could investigate effects that misinformation correction has on those not directly part of the spreading interaction (spreader and recipient) and how recipients can subsequently become spreaders. Researchers investigating misinformation spread could examine how individuals define themselves as exposed to misinformation. Related works such as Altay et al. (2023), have raised vital concerns about how we are categorising the impact of exposure, and at which point we consider an individual to be holding misinformed beliefs. Our findings have determined that, although we may not consider the recipient discussing misinformation with a peer as misinformation spread, the peer does consider it to be misinformation exposure. As there is an increased chance of misinformation belief due to repeated misinformation exposure (Pennycook et al., 2021), future work could investigate the role that third parties hold in misinformation corrections; to prevent further inadvertent spread. This includes the role that seeking support during misinformation correction has on misinformation spread, how this influences offline spread, and how this compares to spread via digital platforms (which do hold a role, but are not the sole contributors).

6 Conclusions

In this paper, we identify the role of three main actors in misinformation discussions within close-tie networks - the spreader, the recipient, and third parties external to the discussion. In doing so, we highlight the risks of involving additional individuals in conversations surrounding misinformation. Our findings highlight that although recommending receivers to discuss/challenge misinformed beliefs that their peers hold can be effective in reducing misinformation spread/belief, this may impact the receiver negatively. Therefore, we need to consider how to support receivers placed in this position, and methods to limit inadvertent spread when receivers use third parties as outlets to cope, or methods to determine information credibility. We also provide insights into how and why misinformation is spreading, and concerns individuals have surrounding the spread. We provide an important justification to consider these offline communication channels in future research and design to investigate/support misinformation correction, and to provide the correct support for individuals who are choosing to address misinformed beliefs. As misinformation continues to spread, we as researchers should focus on designing to discourage further spread where it *is* occurring, and continue to investigate how individuals are making use of existing mechanisms to curb spread.

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