The Role of Presentation Styles in Countering Misinformation on Short Video Platforms

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While short video platforms such as TikTok, YouTube Shorts, and Instagram Reels are frequently criticised for facilitating the spread of misinformation, they are also increasingly leveraged as tools for countering it through debunking content. Although video-based corrections have demonstrated effectiveness, their persuasive impact may depend on the richness of their audio-visual elements. This study examines the persuasive efficacy of three fundamental presentation styles commonly used in short-form video content: (1) videos featuring only captions, (2) captions accompanied by relevant images, and (3) captions presented alongside the creator's visible face. Our results indicate that videos incorporating either relevant and engaging imagery or the creator's facial presence are significantly more persuasive than those relying solely on captions. Based on these findings, we propose practical recommendations for improving the effectiveness of debunking videos, with the aim of promoting belief revision and mitigating misinformation on short video platforms.

CCS Concepts: • **Human-centered computing → Empirical studies in HCI**.

Additional Key Words and Phrases: Misinformation, Short-Form Videos, Presentation Style, Corrections, Debunking, Social Media

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1 Introduction

Short videos are an increasingly common outlet for content consumption on social media platforms such as TikTok, YouTube and Instagram. Videos in this quick, easy-to-digest format are being

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widely created not only for entertainment, but also for science demonstrations, financial literacy discussions, and news dissemination [105]. However, short video platforms have also become breeding grounds for the spread of misinformation [48]; information that is inaccurate according to expert consensus at the time of dissemination [101], and shared regardless of intent [6, 37]. For example, a set of 124 videos containing misleading information about COVID-19 on TikTok have collectively amassed more than 20 million views [68]. To mitigate the spread of misinformation, social media platforms have adopted various measures, including removing harmful content [2], labelling potentially misleading information [1], and collaborating with fact-checking experts [3, 11]. However, these efforts have yielded limited success, and platforms continue to face allegations of enabling misinformation.

In addition to platform-level interventions, general users can actively participate in combating misinformation on these platforms. The Reuters Institute Digital News Report highlights that although many news publishers are active on TikTok, the majority of news-related content is generated by users, such as influencers and activists, rather than professional journalists [61]. Such content plays a crucial role in combating misinformation, as fact-checking organisations have limited capacity to reach all users effectively [91]. During the COVID-19 pandemic, many medical professionals came forward with related debunking content to help stop the spread of misinformation [10, 69, 106]. Furthermore, Micallef et al. [56] observed that when misinformation spreads rapidly, professional fact-checking interventions tend to have limited volume and reach. Therefore, bottom-up corrections initiated by ordinary users, often termed as 'Citizen fact-checking' [56] can play a vital role in preserving the integrity of public information on short video platforms [49].

Debunking videos use a variety of techniques to present their messages effectively. Some rely on graphics, animations, and voice-over narrations, while others feature human creators on screen, explaining why certain information is incorrect and sometimes also combining these explanations with visuals such as graphics and animations. For example, Debunked[1], a popular YouTube channel, produces short- and long-form videos that use images and animations to dispel popular myths. Similarly, Dr. Noc on TikTok[2] is known for his engaging short videos, which tackle myths and clarify facts on topics such as COVID-19, earning him over 1.9 million followers and nearly 34.1 million likes on TikTok as of April 2025.

These varying presentation styles exemplify different levels of media *richness*, a concept grounded in Media Richness Theory [26], which posits that the richness of a communication medium influences its ability to effectively convey messages and reduce ambiguity. Videos incorporating on-screen creators, visuals, animations, and voice-overs utilise different dimensions of richness compared to formats that rely solely on voice narration or simplistic text overlays. They offer distinct ways of presenting information, and each style could potentially influence engagement, comprehension, and trust in different ways, possibly also impacting their overall persuasive power. However, how these different dimensions influence the persuasiveness of debunking videos remains unclear—a critical gap to address in order to combat misinformation effectively and improve the impact of corrective efforts.

This paper presents a study in which we systematically evaluated the effectiveness of various debunking short-form video presentation styles, assessing their persuasive impact. We focused on three commonly used debunking video styles with varying degrees of richness: (1) videos with only a voice-over and captions; **Text**, (2) videos that utilise images and animations with a voice-over and captions; **Image**, and (3) videos featuring a human presenter speaking, with captions; **Face**. While these are not the *only* styles used on short-video platforms, as creators can combine elements from

[1]https://www.youtube.com/@DebunkedOfficial/shorts
[2]https://www.tiktok.com/@dr.noc

multiple styles, establishing a fundamental understanding of the most commonly used presentation styles is essential as it provides a clear baseline for evaluating their individual effectiveness. By first identifying how these styles individually influence users' belief in misinformation, future research can build on these findings to explore the impact of more complex and hybrid presentation styles.

In our study, 120 participants rated the accuracy of six statements and reported their confidence in these judgements, both before and after watching a short video that either agreed or disagreed with their initial judgement. All six statements pertained to widely popularised societal myths such as 'We only use 10% of our brain'. We deliberately manipulated the video's *stance* (i.e., whether it agreed or disagreed with the participant's initial judgement) to assess how different presentation styles can direct viewers towards corrective information. We also collected open-ended responses to understand issues that participants considered when assessing the videos, as well as their recommendations for making the videos more engaging. This helped us gain deeper insights into cues that participants may have relied upon to evaluate the persuasiveness of the videos they saw.

We found that the **Image** and **Face** conditions were more effective than **Text** in changing participants' prior beliefs. Furthermore, our qualitative analysis found that participants in the **Face** condition valued the presenter's confidence and perceived expertise, which enhanced trust in what is being delivered by the presenter. Participants in the **Image** condition found the visuals engaging and the explanations clear. **Text** videos, though still effective for some, were more likely to be perceived as less engaging and led to higher confidence decreases. We also found that while both **Face** and **Image** videos were more persuasive, their effectiveness depended on how they presented information, with **Face** relying on presenter credibility and **Image** benefiting from dynamic visuals.

We make the following contributions to CSCW and HCI research. First, we provide empirical evidence on how different video presentation styles—**Text**, **Image**, and **Face**—influence the persuasiveness of misinformation correction. Our findings highlight that richer audiovisual formats, particularly **Face** and **Image**, are more persuasive compared to **Text** videos, emphasising the impact of presentation style in shaping belief change. Second, we demonstrate that the mechanism of persuasion varies by video format. Videos featuring a visible human presenter were perceived as more persuasive due to their ability to enhance the video's credibility by conveying authority and expertise. In contrast, videos that incorporated relevant images and animations established credibility through clear visuals and dynamic storytelling, which contributed to improved comprehensibility. These insights highlight the importance of tailoring debunking video design to more effectively combat misinformation on short video platforms.

We conclude by discussing how our findings can inform the design of more effective misinformation correction strategies, particularly in short-form video contexts. These insights can benefit not only professional fact-checking organisations and social media platforms but also empower ordinary users to create more effective debunking videos, enabling broader participation in combating the spread of online misinformation.

2 Related Work

2.1 Misinformation and Interventions to Counter Misinformation

Due to the ease of publishing content on social media has transformed these platforms into breeding grounds for misinformation, posing a significant challenge to society. Prior research has shown that misinformation can result in negative consequences, such as eliciting negative emotions in users and prompting online activities that may harm society [18, 21].

Particularly, the rise of short video platforms that allow users to easily create and share videos, such as TikTok, has fuelled the spread of misinformation. A recent study found that about 40% of

medical videos on TikTok contain false or misleading information [57]. Another study revealed that nearly 20% of videos appearing in searches for top news stories also contain misinformation [99]. The popularity of TikTok-style short videos stems from their fast-paced, engaging nature. Their bite-sized format caters to short attention spans and encourages rapid consumption and sharing. This has led other social media platforms, such as Instagram Reels[3] and YouTube Shorts[4] to adopt similar video formats to compete. As a result, the rapid spread of misinformation is no longer confined to TikTok, and now spans multiple platforms, all of which prioritise maximising engagement over ensuring the reliability and accuracy of information. Hence, even though short-form video platforms play a positive role in fostering creativity [66] and community engagement [60], their role in facilitating the dissemination of misinformation has become a significant social concern.

Various misinformation intervention designs have been explored by prior literature in order to understand their effectiveness [34, 46]. One of the most common approaches used by platforms to mitigate misinformation spread is the use of fact-checkers [11, 25, 75]. However, a significant challenge lies in the inability of professional fact-checkers to keep up with the rapid spread of misinformation. Research has shown that this creates the risk of the "implied truth effect", where users may assume that content without a fact-checking label is accurate [76, 77]. Another common approach is to warn about harmful content through symbols and labels. This approach has been and is still being used by social media platforms such as Facebook [87] and TikTok [50] to warn users about COVID-19 misinformation. While some studies [13, 43] indicate that these features help users to critically evaluate what they consume, Clayton et al. [23] found that general warnings can also inadvertently lead to scepticism toward accurate information.

To address these challenges, alternative strategies have been explored. One such approach is accuracy nudges, which subtly encourage users to assess the accuracy of the content they engage with [79]. Another related nudging intervention is accuracy prompts, which remind individuals of the importance of verifying information accuracy, thereby encouraging them to share fewer false or misleading headlines [82]. Another promising method is inoculation, which educates users on common misinformation tactics, equipping them to identify and resist deceptive content [86]. In addition, some platforms have implemented machine learning systems that leverage crowd-sourced input from lay users to detect and manage misinformation. Platforms' reliance on third-party fact-checkers has also faced criticism, with users often expressing distrust toward these external entities [20]. In response to such concerns, platforms such as Facebook and Instagram have begun replacing independent fact-checkers with X-style 'community notes', where users with differing viewpoints collaboratively agree on contextual notes for controversial posts [51]. Meta stated that this shift was motivated by perceptions that traditional fact-checkers were "too politically biased" and "destroyed more trust than they created" [22]. However, despite these advancements, the overwhelming volume of misinformation produced daily highlights the limitations of platform-driven solutions. Hence, user-level interventions remain essential in the fight against misinformation.

Previous studies have explored intervention strategies that actively involve users in mitigating the spread of misinformation. Such intervention strategies consist of encouraging users to rate sources for news credibility [80], flagging potential misinformation [41], effectiveness of credibility signals when supplied by peers [71] or providing tools to alter potentially misleading headlines [39]. Jahanbakhsh et al. [39] found that participants recognised the importance of having the agency to actively curate the content they engage with. They also expressed a strong interest in helping others avoid misinformation and exaggerated claims.

[3]https://about.instagram.com/features/reels
[4]https://www.youtube.com/intl/en_id/creators/shorts

One of the simplest ways for users to combat misinformation is by providing corrections, either through direct comments on misleading content or by creating separate content to address and clarify the misconceptions. Prior literature has demonstrated that corrections can effectively reduce belief in misinformation. For instance, recent studies have shown that even a single exposure to corrective information can decrease belief in COVID-19-related misinformation [100, 102]. Yang et al. [110] further noted that such debunking efforts can help suppress the spread of misinformation. Building on this, researchers have examined the attributes of corrective messages to identify strategies that enhance their effectiveness. Martel et al. [52] examined the effectiveness of different correction styles—direct versus hedged—and explanatory depth (simple versus detailed) in user comments aimed at correcting misinformation. They found that neither of these factors had a significant impact on engagement or the acceptance of corrective messages. Similarly, Bode et al. [14] found that when users observed someone else being corrected for spreading misinformation, their own beliefs in the misinformation were reduced regardless of the tone of the correction. Kotz et al. [45] investigated the most effective structure for corrections, comparing the "bottom-heavy" method, which presents the misinformation first followed by the correction, and the "truth sandwich", which starts with accurate information, then debunks the misinformation, and concludes with the correct information again. The authors found that neither format had a significant impact on the effectiveness of the correction.

Given the importance of user-level interventions in addressing online misinformation, it is essential to explore not only text-based corrections but also other modalities, particularly video, as potential tools for effective misinformation correction. While text corrections are relatively easy to produce, video corrections provide richer audio-visual cues that can significantly enhance message delivery. According to Media Richness Theory, videos offer a variety of sensory inputs, including sound, animations, and facial presence, which are absent in text. These elements have the potential to increase the persuasive power of the message being conveyed [26].

2.2 Video-based Misinformation Correction

Video-based corrections—often termed as debunking videos—are widely seen in video sharing platforms, and are primarily created by users who aim to educate others about misinformation in specific fields. These creators include experts, enthusiasts, or individuals with specialised knowledge. Past studies have shown that debunking videos are effective in correcting misinformation. For instance, Young et al. [112] compared the effectiveness of fact-checking videos versus fact-checking articles in debunking misinformation, and found videos to be more effective in correcting false beliefs. Similarly, Bhargava et al. [12] evaluated the impact of debunking videos on TikTok and found them to be highly effective in addressing misinformation. Additionally, Gunasekara et al. [33] examined the most effective modalities for correcting misinformation and concluded that video-based corrections are particularly effective for countering video-based misinformation, as they align more closely with the format of the original misleading content.

Typically, these videos use three main presentation styles. The most basic is to only use text or captions on a background while having a voice-over reading the captions. The second style, animated videos, uses a combination of related images, graphical objects, and motion effects to convey the message in a visually engaging way [5, 40]. The third style consists of 'talking head' videos, in which a speaker addresses the audience directly, with the camera focused on their upper body [31]. While there are hybrid or combined styles, these three represent the most commonly used formats. The intimate and personal nature of talking head videos could foster a sense of connection between the speaker and the audience, potentially making it a powerful tool for communication. Research suggests that the presence of a human face in videos enhances social presence, a concept rooted in Social Presence Theory, which posits that visual cues like facial expressions and eye

contact make interactions feel more immediate and engaging [47]. Similarly, images and animations could help capture attention and simplify complex information by using dynamic and engaging visuals, making it easier for viewers to follow and understand. The effectiveness of these two styles has been primarily studied in educational contexts, to understand how these formats enhance learning and engagement. Findings, however, are mixed [36]. This inconsistency highlights the need to further investigate how different video presentation styles impact viewers' perception and persuasion, particularly in the context of misinformation correction.

Some studies indicate that the presence of additional images or an instructor's face *can* increase viewers' attention, satisfaction, perceived credibility, and learning outcomes [67, 84, 92, 104]. Conversely, some research also suggests that the inclusion of such material does not necessarily improve information retention or learning effectiveness [42]. This could result from the 'split attention effect' [8] which occurs when learners are forced to divide their attention between multiple sources of information, such as an on-screen instructor and the learning material. In such cases, the attention directed toward the instructor's face or gestures, or animated image objects may come at the expense of focusing on the content being delivered. This division of attention can overwhelm working memory, potentially reducing the capacity to process and retain key information. This suggests that a simpler, less visually cluttered format might be more effective in ensuring viewers can focus on and absorb the core message without cognitive overload.

Importantly, these findings cannot be directly translated to the context of social media. For instance, unlike educational videos where the audience typically approaches content with the intent to learn, debunking videos aim to challenge and correct pre-existing beliefs. Moreover, the brevity of social media videos could encourage creators to distil information into concise, easily digestible formats, potentially reducing cognitive load for viewers. This could be achieved through the use of images, graphics, and motion effects, which might make abstract concepts more accessible and engaging. By presenting information in a visually streamlined manner, these videos could help maintain focus and reduce the likelihood of the split attention effect, as there may be less competing information for viewers to process at once.

As stated in the above literature, the richness delivered by video content can vary significantly based on the different presentation styles and audiovisual elements used by creators. However, the relative persuasive impact of these varying levels of richness remains to be understood, especially in the context of persuading beliefs related to misinformation. Therefore, this study seeks to address this gap by offering a comprehensive examination of the persuasive efficacy of three distinct presentation styles in the context of corrective videos, with the aim of empowering users to more effectively counter online misinformation on short-form video platforms.

3 Method

To examine the persuasiveness of different video presentation styles, we conducted an online survey-based experiment in which participants assessed the truthfulness of six statements through a two-stage decision-making process. The subsequent sections detail the experimental setup, the development of stimuli, participant recruitment, and the overall experimental procedure.

3.1 Experimental Design

The experiment followed a 3 (video type: **Text**, **Image** or **Face**) × 2 (video congruence; **Agrees** or **Disagrees**) factorial design. The video type was a between-subject factor, and the video congruence was a within-subject factor. The study employed a pretest-posttest experimental design, a widely used approach to evaluate the effectiveness of interventions in belief change [65, 72, 74].

Figure 1 outlines the stages of our experiment. In the first stage, participants read the given statement (Step 1/4, see Figure 1) and provided an initial binary credibility assessment along with

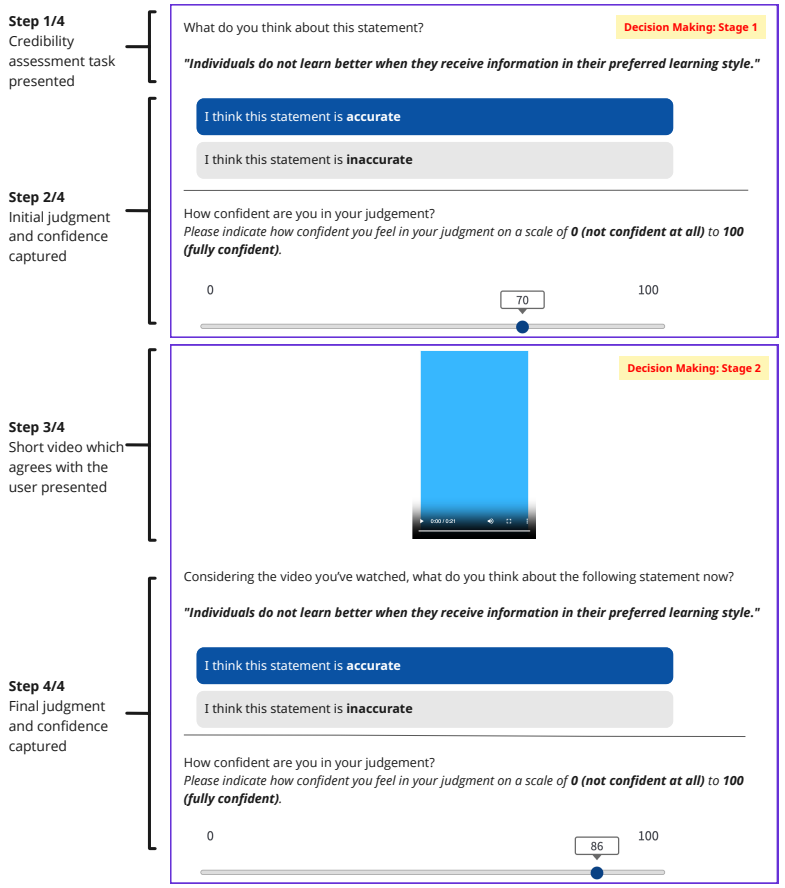

Fig. 1. An example of a task sequence where the video agreed with the user, progressively presenting each step.

their confidence in this assessment (Step 2/4). In the next stage, a short video was shown which either agreed or disagreed with the participant (Step 3/4), who then reported their final credibility assessment along with their confidence in this assessment (Step 4/4).

Each participant was presented with six statements—three factually correct and three incorrect—each accompanied by a corresponding correction video. To avoid revealing the study's purpose and introducing bias, three of the videos aligned with the participant's initial judgement, while the other three opposed it in a randomised order. For example, in cases where the video contradicted the participant's stance, it would assert that the statement was true if the participant had initially judged it as false, and vice versa, regardless of the actual veracity of the claim.

3.2 Experimental Materials

3.2.1 Statements used in the study. For our stimuli, we focused on misinformation statements that met two criteria: (1) participants are unlikely to hold extreme views on the topics, and (2) the misinformation has been debunked by a reputable organisation. We identified six statements for our experiment. These statements were then cross-verified for accuracy by consulting reputable,

Popular myths	Statement used in the study
"There are specific preferred learning styles for each person"	✓ Individuals do not learn better when they receive information in their preferred learning style [95].
"Nutrients get destroyed when a microwave is used"	✗ Using a microwave can destroy nutrients in your food [44].
"There are right-brained and left-brained people"	✓ People cannot be divided as left-brained and right-brained individuals [4].
"Drinking alcohol makes you keep warm in cold weather"	✓ Drinking alcohol does not make you feel warmer in cold weather [32].
"The colours on the bottom of toothpaste tubes reveal the ingredients (e.g., green for natural, blue for natural and medication, red for both natural and chemical, black for only chemical)"	✗ Small coloured square at the bottom of the toothpaste, black, blue, red, or green, reveals the ingredients of the toothpaste [19, 59].
"Humans only use a small fraction of our brain capacity, often cited as 10%"	✗ We only use 10% of our brain [58].

Table 1. The six myth-based statements shown to participants. Half of the myths were reworded into true statements (✓) that directly contradicted common misconceptions to encourage initial misjudgement. The remaining false statements (✗) contained familiar, widely believed myths.

authoritative sources such as Harvard Health Publishing[5] and the National Library of Medicine[6] to confirm their falsity. The statements used in the study can be found in Table 1 along with the sources that fact-check them.

Of the six statements, three were reworded to reflect the truth, while the other three were kept the same to reflect misinformation as seen in Table 1. For the false statements, commonly accepted phrases were used, such as 'We only use 10% of the brain'. The true statements were rephrased in a way that directly contradicted common misconceptions, such as the common misconception of 'Individuals learn better when they receive information in their preferred learning style' was rephrased as 'Individuals *do not* learn better when they receive information in their preferred learning style,' to prompt participants to initially perceive the statement as incorrect. By rephrasing the true statements in this manner and the false statements in commonly accepted phrases, the goal was to encourage participants to initially make incorrect judgements, such as marking true for false statements. This approach allowed us to have a clearer assessment of how effectively the videos influenced users' perceptions.

3.2.2 Video Creation. Firstly, based on the existing content related to each of our six statements, the authors generated transcripts for the videos. The transcripts were refined using OpenAI's ChatGPT version 4.0[7] to follow a more engaging, fast-paced, and informal debunking style commonly found in short-form video platforms like TikTok.

Once the transcripts were finalised, we produced 12 videos—one supporting and one opposing each of the 6 statements—for each of the three distinct video styles varying in richness: (1) **Text**: voice-over with captions, (2) **Image**: voice-over with supporting images, animations, and captions, and (3) **Face**: a human presenter delivering the content with captions.

For all the **Face** videos, the same human presenter, with experience in creating online content, was used to minimise presenter-related bias. The videos were filmed using a professional camera and a lapel microphone. To ensure consistency across both true and false narratives, the presenter

[5]https://www.health.harvard.edu/
[6]https://www.ncbi.nlm.nih.gov/
[7]https://openai.com/index/hello-gpt-4o/

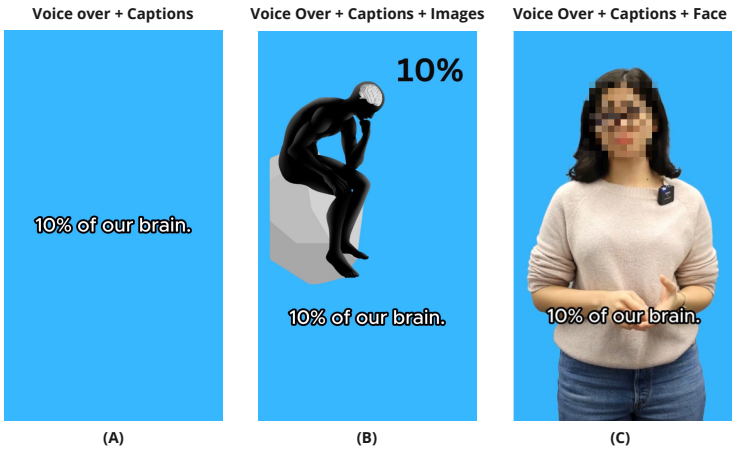

Fig. 2. Example stimuli used in the experiment, illustrating the different video presentation styles. Video presentation styles: (A) **Text** (B) **Image** and (C) **Face**.

was instructed to be energetic, confident, and maintain a consistent tone of voice throughout all recordings. Post-production was carried out using Canva[8] and CapCut[9], a free editing tool developed by ByteDance, TikTok's parent company [111]. CapCut is widely used for producing short-form video content across platforms such as TikTok, Instagram Reels, and YouTube Shorts [24]. Furthermore, for all the **Image** videos we excluded any depiction of faces; including photographs, cartoons, emojis, or clip art to ensure that the condition represented purely non-face visual support. In contrast, the Face condition featured only the presenter on screen, without any additional images or visual overlays, so that any observed differences could be attributed specifically to the presence of a human face rather than a combination of facial and graphical cues.

We then produced the **Text**, **Image** and **Face** videos. To ensure consistency across all three video styles, we used the same audio narration, extracted from the **Face** videos using the open-source software Audacity[10]. This approach allowed us to maintain identical pacing, tone, and delivery across the **Text**, **Image**, and **Face** video types.

Initial editing for the **Text** and **Image** videos, including background colour, sound effects, transitions, and background music, was done using Canva. The final videos were then exported (1080p HD) and imported into CapCut for final editing. Captions for the videos were auto-generated using CapCut's captioning tool and subsequently edited for accuracy and clarity. For the **Face** and **Image** videos, captions were positioned below the presenter's face or visual content, using the same alignment and styling. For the **Text** videos, captions were centred on the screen. All captions followed the widely used TikTok aesthetic: white text with a black outline [54].

To minimise potential biases from audio-visual elements unrelated to the manipulated variables, we ensured that background colour, sound effects, frame transitions, font size, font style, and background music were consistent across all video types. Video duration was also standardised to be under 30 seconds. Example stimuli are provided in Figure 2. The full set of stimuli used in the experiment is publicly available to the research community[11]. To preserve the anonymity of

[8]https://www.canva.com/
[9]https://www.capcut.com/create/tiktok-video-editor
[10]https://www.audacityteam.org/
[11]https://osf.io/cdx6z/?view_only=5f88abfab00d481ab46cec90ab31c12a

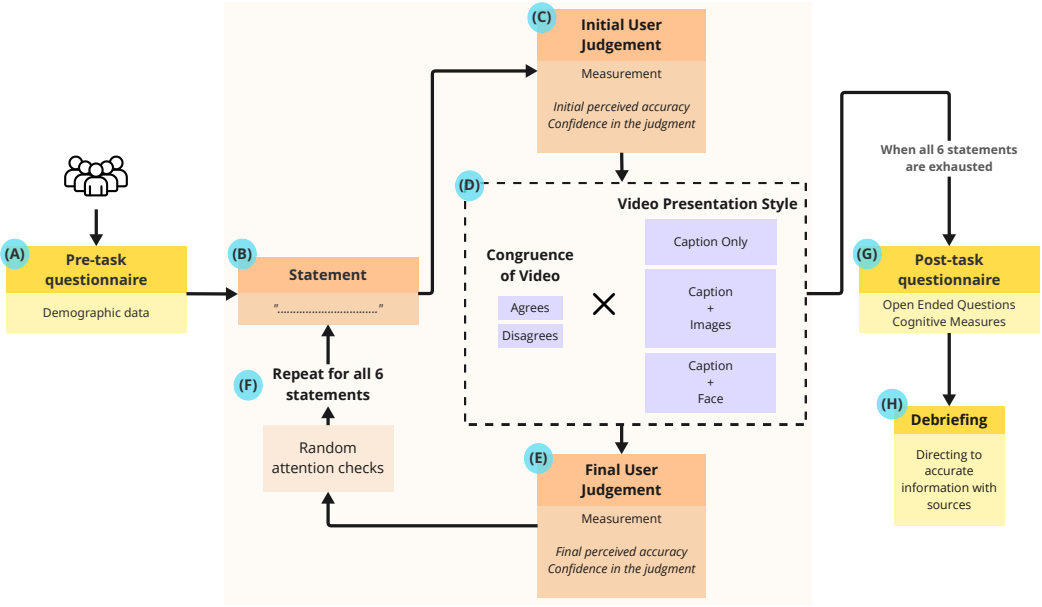

Fig. 3. The full experiment flow. Video presentation styles (3) vary between treatments. (A): Pre-task questionnaire. (B): First of six statements displayed (C): Measurement of initial judgement and confidence. (D): A video with in a presentation style based on the condition is shown, either agreeing or disagreeing with the participant's judgement. (E): Measurement of participant's final judgement and confidence. (F): Procedure repeated for all six statements (randomised order). (G): Open-ended questions exploring participants' thoughts on the presented videos, along with dispositional measures, such as the Bullshit Receptivity Scale (BSR) and Actively Open-Minded Thinking Scale (AOT). (H): Debriefing, participants informed about the ground truth behind the six statements and directed to reputable sources.

the presenter, their face has been blurred in the shared materials, although it remained visible to participants during the actual study.

3.3 Procedure

3.3.1 Participants. We deployed our study on Prolific, recruiting fluent English speakers who frequently use TikTok and YouTube. The study received approval from our university's Human Ethics Committee prior to implementation. As the same audio track was used across all videos, exposing participants to multiple conditions could have led them to associate the voice with the presenter's face, impacting our ability to isolate the independent effects of visual presentation style (i.e., image or text) from those of facial presence. Therefore, each participant took part in only one of the three conditions: **Text**, **Image** or **Face**.

We used G*Power to determine our sample size. With a medium effect size ($f^2 = 0.25$) (reflecting a magnitude commonly used in similar psychological intervention studies [16, 73])) and a power of 0.8, a minimum sample size of 102 participants was recommended. To ensure a sufficiently powered analysis and balanced participant distribution across our conditions, we conservatively recruited 120 participants (60F/60M). Participants took a median time of approximately 14 minutes to complete the survey and received around US$4 for participation.

3.3.2 Procedure. Figure 3 presents an overview of our experimental procedure. Following a brief demographic questionnaire (Figure 3 (A)), participants were assigned randomly to one of three conditions, which manipulated the style of video shown: **Text**, **Image** or **Face**. Participants initially viewed a statement (Figure 3 (B)) and rated it as either accurate or inaccurate (Figure 3 (C)). Following prior research on opinion change, including research on misinformation [38, 107], where initial confidence was used as an indicator for participants' knowledge or uncertainty about the task, we also measured participants' confidence in their initial judgement. This was collected on a sliding scale from 1 to 100, with a higher score reflecting greater confidence. Given that previous studies have shown that bias can be influenced by the starting position of the slider's anchor [90], the sliders were initially unmarked and an anchor only appeared once participants clicked on the scale.

Following the initial judgement, participants were shown a short video that either agreed or disagreed with their initial judgement (Figure 3 (D)). After watching the short video, participants were asked to re-evaluate the accuracy of the statement and the confidence in their assessment (Figure 3 (E)). By asking them to rate the statements' accuracy before and after seeing the short video, we were able to measure the persuasiveness of the video. Furthermore, since the video was presented immediately after recording the initial judgment, participants were able to evaluate the information while their initial reasoning and confidence remained salient. This design ensured that any observed changes reflected the direct persuasive impact of the video while minimising potential memory and order effects across statements. The same setup was repeated for all six statements.

After completing the primary task of rating the six statements, participants responded to three questions (Figure 3 (G)) designed to explore their reasoning processes when evaluating the videos shown:

(1) Did the videos influence your feelings about the statements shown?
(2) What specific characteristics of the video led to the above outcome?
(3) You viewed six videos talking about different topics. In your opinion, what would make these videos more engaging and informative?

These questions allowed us to gain a deeper understanding of how participants processed the presented information, the factors that influenced their perceptions, and surface potential improvements for enhancing the effectiveness of debunking videos.

Lastly, participants completed two disposition and cognitive measures, which were the Bullshit Receptivity (BSR) scale and the Actively Open-Minded Thinking (AOT) scale (Figure 3 (G)). Prior research has demonstrated that individuals' susceptibility to pseudo-profound statements can be effectively assessed using the BSR [78], and its relevance has been supported in recent studies examining belief formation and misinformation receptivity [33, 81, 83, 96]. Accordingly, participants were asked to rate the profoundness of 11 pseudo-profound statements on a five-point Likert scale (1 = Not at all Profound to 5 = Very Profound). The term "profound" was explicitly defined in the instructions as "of deep meaning; of great and broadly inclusive significance" [78]. To assess participants' openness to revising their views, we also administered the refined version of the Actively Open-Minded Thinking (AOT) scale [93], originally developed by Stanovich and West [94]. This scale captures individuals' willingness to consider alternative perspectives and update beliefs based on new evidence. Participants responded to 13 items on a six-point Likert scale (1 = Disagree Strongly to 6 = Agree Strongly). We hypothesise that individuals with higher AOT scores will demonstrate greater receptivity to corrective information presented in the videos. To ensure participants remained attentive throughout the study, two Instructional Manipulation Checks (IMC) (Figure 3 (F)) [64] were randomly presented. All participants successfully passed both IMCs.

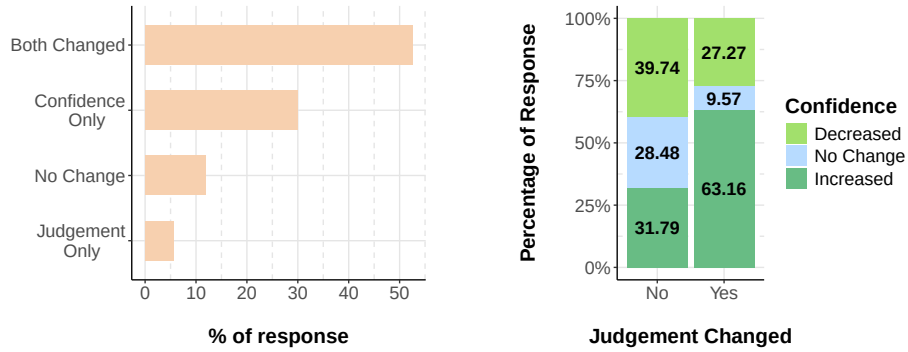

Fig. 4. Each participant encountered three instances in which the video contradicted their initial judgement. The figure illustrates participant responses in these disagreement cases. ***Left:*** Proportion of responses categorized by the type of change observed. ***Right:*** Distribution of confidence change contingent on whether a change in judgement occurred.

Finally, since participants were exposed to some misinformation, they were debriefed at the end of the study, where we communicated the correct information to participants, as well as provided references and hyperlinks to reputable sources for further verification (Figure 3 (H)).

4 Results

Each participant evaluated six statements, resulting in 720 initial and 720 final credibility judgement and confidence scores. The short videos shown either agreed or disagreed with the participants an equal number of times. As the study aimed to examine the persuasive power of the three video types, our analysis focuses on instances where participants' judgements were opposed by the videos. In this section, we first present the manipulation check we undertook. Next, we provide details about our quantitative analysis and findings. Lastly, we present our qualitative findings.

4.1 Robustness and Manipulation Check

We observed 208 changed judgements and 60 instances of reduced post confidence when the video disagreed with participants. Upon further analysis, as seen in Figure 4 *(left)*, we found that in 5.6% of instances, participants changed only their judgement, while in 30% of instances, only confidence levels changed. In more than 50% of cases, both judgement and confidence changed. Since confidence can either increase or decrease, we decided to examine it alongside judgement changes to gain a comprehensive understanding, as illustrated in Figure 4 *(right)*. When the video disagreed with the participant and the judgement changed, confidence increased in 63.2% (M = 30.97, SD = 23.42) of the instances, whereas when the judgement remained the same, a decrease in confidence occurred most frequently, accounting for 39.7% (M = -23.22, SD = 18.30) of the instances. Further analysis on the relationship between judgement change and video congruence showed a significant effect for video congruence (β = 2.24, SE = 0.21, $p < 0.001$); indicating when the video disagrees with participants' pre-existing beliefs, the likelihood of judgement change is 9.46 times more compared to when the video aligns with their beliefs ($e^{2.24} \approx 9.46$). This suggests that changes in judgement were not random, but rather a result of the manipulation introduced in the study.

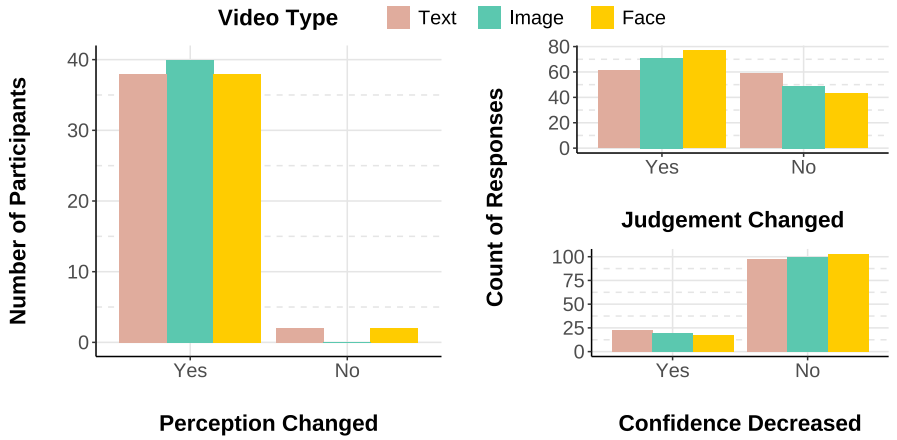

Fig. 5. ***Left***: Displays the number of participants who changed their perception (i.e., either by altering their judgment or by expressing reduced confidence while maintaining their original judgment.) at least once after encountering videos which disagreed with their initial judgement. ***Right***: Displays the distribution of Judgement Change *(top)* and Confidence Decrease *(bottom)* when the video disagreed with the participant.

4.2 Descriptive Statistics and Model Construction

4.2.1 Descriptive Analysis. First, we examined the distribution of participants who had a perception change (i.e., either changed their judgement or had a decrease in confidence) at least once based on the type of video they were shown, as illustrated in Figure 5 *(left)*. Notably, all participants in the **Image** condition changed their minds at least once, whereas two participants in both the **Text** and **Face** conditions did not. Next, we analysed how perception change occurred by examining judgement change and confidence change across video types. We found that participants were most likely to change their judgements in the **Face** condition and least likely in the **Text** condition, as shown in Figure 5 *(right-top)*. Interestingly, the opposite trend emerged for confidence: participants in the **Text** condition exhibited the highest occurrence of confidence decreases, while those in the **Face** condition had the lowest, as seen in Figure 5 *(bottom-right)*.

To determine whether these distributions were statistically significant, we conducted a chi-squared test. However, the results did not indicate significant differences between conditions. To further explore judgement change and the role of confidence in this process, we then modelled judgement change alongside initial confidence.

4.2.2 The Effect of Initial Confidence on Judgement Change. We found that when participants changed their judgement, there was a noticeable difference in the median values of the initial confidence scores. Participants who did not change their judgement had a higher median initial confidence value of 81, whereas those who did change their judgement displayed a lower median value of 63, as seen in Figure 6. To statistically understand the effect of initial confidence on log-odds of judgement change (1 = changed, 0 = not changed), we conducted a logistic regression. We observed significant main effects of participants' initial confidence (β = -2.94, SE = 0.62, $p < 0.001$) indicating that the log odds of judgement change decreases when the participant has higher initial confidence regarding their judgement. Thus, it can be concluded that there is a significant inverse linear relationship between **`Initial Confidence`** and the log-odds of **`Judgement Change`**.

Brinol et al. [17] argues that high initial confidence reinforces resistance to persuasion by leading individuals to rely more heavily on their existing beliefs. This effect makes individuals less

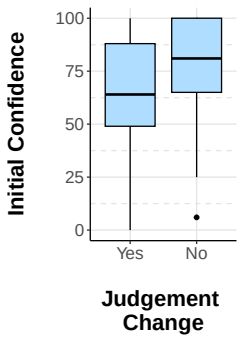

Fig. 6. Distribution of participants' Initial Confidence, both when their judgement changed and did not change.

susceptible to persuasive attempts, requiring stronger and more compelling messages to achieve judgement change. This nuance is not captured by a simple judgement-change outcome, which treats all shifts as equivalent and ignores the level of belief resistance that had to be overcome. To address this, we calculated a measure of persuasive power based on the model's predicted probability of judgement change. Specifically, we consider the expression $1/P(\text{Judgement Change})$, where $P(\text{Judgement Change})$ is obtained from the logistic regression model. This quantity reflects a participant's *resistance to judgement change*: higher values indicate that greater persuasion would be required for a change to occur. In this way, when a participant changes their judgement despite having a low $P(\text{Judgement Change})$, it suggests that the video was particularly persuasive. Our analysis therefore focuses on comparing this measure across presentation styles to assess their relative effectiveness in influencing beliefs about misinformation.

4.2.3 Main Model. We compared the persuasion ability of the three video presentation styles by examining how likely participants were to change their initial judgements when confronted with contradictory information. Since cases without initial disagreement do not contribute to this measure, we subset our data to reflect only those cases where the video disagreed with the participant's initial judgement (50% of the dataset). We investigated the impact of the following 4 predictor variables on the persuasion power of the three video types.

- **Sex:** Prior research has suggested that both male and female viewers may exhibit sex-based perceptual biases when evaluating presenters. For instance, Basow and Silberg [9] found that male students rated female instructors more negatively than female students, particularly in terms of presentation effectiveness and engagement. Given that the presenter in our videos is female, these sex-based biases may influence the persuasiveness of the videos. Therefore, we accounted for this potential bias by including the sex of the participant in our model.
- **BSR:** The final BSR score was calculated by averaging participants' ratings of multiple pseudo-profound statements, with each statement rated on a five-point Likert scale from 1 (Not at all profound) to 5 (Very profound). This final score ranges from 1 to 5, with a higher score indicating greater receptivity to pseudo-profound content. Conversely, a lower score suggests greater scepticism and critical thinking when evaluating such statements.
- **AOT:** The AOT scale score is calculated by averaging participants' ratings of 13 items, each rated on a six-point Likert scale from 1 (Disagree Strongly) to 6 (Agree Strongly). Some items are reverse-scored, where strongly agreeing becomes strongly disagreeing, to account for

Predictor	Estimate (Std.Error)	p value	Multiplicative Effects (e^{β})
Baselines: Sex = Male, Video Type = Text			
(Intercept)	-0.320(0.112)	**0.004**	0.73
Sex	-0.018(0.093)	0.848	0.98
meanAOT	-0.012(0.043)	0.784	0.99
meanBSR	0.178(0.044)	**<0.000**	1.20
VideoType:Image	0.241(0.119)	**0.043**	1.27
VideoType:Face	0.249 (0.119)	**0.038**	1.28

Table 2. Effect of predictors on persuasion power. Statistically significant main effects (p<0.05) are presented in bold, and their multiplicative effects ($e^{Estimate}$) are reported to indicate the proportional change in the outcome. The sign of the effect (+/−) denotes the direction of the relationship between the predictor and persuasion power. Multiplicative effects greater than 1 represent a proportional increase (e.g., $e^{0.2} \approx 1.22$ corresponds to a 22% increase), while values less than 1 represent a proportional decrease (e.g., $e^{-0.2} \approx 0.82$ corresponds to an 18% decrease).

negatively worded statements. The final AOT score reflects participants' openness to revising their beliefs based on new evidence, with higher scores indicating greater cognitive flexibility and a willingness to consider alternative perspectives, while lower scores suggest more rigid thinking.

- **`Video Type:`** The type of video presented to the participant. This could be one of the three presentation styles; **Text**, **Image** or **Face**.

We utilised the statistical R package `lme4` [93] to construct a generalised linear mixed-effects model (GLMM) of the relationship between the persuasion power and the predictor variables, using a `log` link function. We incorporated participant IDs and statement number as random effects in our model to account for individual differences and any variations among the six statements.

The final model along with statistically significant predictors is shown in Table 2. We performed a likelihood ratio test with the null model [15] and found that our model is statistically significant (χ^2 = 21.33 , $p < 0.001$). To ensure the validity of the model, we check for the existence of multicollinearity. Our predictors report an adjusted generalised variance inflation factor (VIF) between 1.000 and 1.008, well below the commonly used threshold of 5 [30], indicating no significant multicollinearity among the predictors. These results suggest that the model's estimates are stable and not adversely affected by correlations between predictors.

4.2.4 Results. We observed significant main effects of **BSR** (β = 0.170, SE = 0.053, p = 0.001) on persuasion power, indicating that videos shown to participants with higher mean BSR scores were more persuasive than those viewed by participants with lower BSR scores. We also observed a significant main effect of **`Video Type`** on persuasion power. As presented in Table 2, we found statistically significant differences in persuasion power between **Image** and **Text**, as well as between **Face** and **Text**. The persuasion power of the **Image** presentation style is approximately 27.2% higher than that of **Text** presentation style. Similarly, the persuasion power of the **Face** presentation style is 28.3% higher than the **Text** presentation style. When examining the frequency of judgement changes across video types, it is evident that participants were most likely to change their judgement after viewing a **Face** presentation style, followed by the **Image** presentation style as seen in Figure 5 *(top-right)*. The **Text** presentation style resulted in the fewest judgement changes, which aligns with the findings from the analysis. No effects were observed for participants' **`AOT`** score and Sex.

4.3 Qualitative Findings

Our qualitative analysis aimed to understand the reasoning behind participants' judgement changes and identify elements that contributed to their level of trust or scepticism of the videos. Additionally, by gathering suggestions for improving engagement, we aimed to explore potential enhancements in video presentation that could make debunking content more effective in capturing and maintaining viewer attention.

We analysed the qualitative data collected using the general inductive approach [98]. The first author thoroughly familiarised themself with the qualitative data through an initial read-through, followed by generating categories. The categories were iteratively refined with another author from the research team. After finalising the categories, both coders independently applied the codes deductively to the participants' responses. Responses to Questions 1 and 2 were analysed together, as the answer to Question 2 provided justification for the response given in Question 1. In contrast, responses to Question 3 were analysed independently. To assess the consistency of the coding process, Cohen's Kappa was calculated to determine inter-rater reliability (IRR), yielding values of 0.804 for Questions 1 and 2, and 0.830 for Question 3, indicating strong agreement between the coders. Any discrepancies in coding were resolved through discussion.

We grouped the findings of the qualitative analysis into five main categories that focused on the factors reported by participants that influenced their perceptions and opinions of the short-form videos. The sixth and final category reports participants' suggestions for making the videos more engaging.

4.3.1 Participant Feedback for Enhancing Video Engagement. A total of forty-one participants suggested that the incorporation of visual elements relevant to the topic could increase the engagement of the videos. The breakdown of this total indicated that twenty-four participants were from the **Text** group, followed by sixteen participants from the **Face** group, and finally only one participant from the **Image** group. Further, eight participants proposed incorporating *creative* visual elements to better catch the audiences' attention: "*Add some emojis and/or more colours and/or contrast or highlight the text since they were very plain and not likely to capture some attention of certain kinds of people or age groups*" ($P80_{Text}$). Additionally, three participants recommended more audio variety to prevent perceived "*repetitiveness*" ($P39_{Image}$).

Moreover, four participants from the **Text** group indicated the on-screen presence of the presenter would have increased the engagement of the videos: "*Having an actual person to be seen would make them more engaging (...)*" ($P1_{Text}$). We also observed thirty participants who suggested the inclusion of information sources as a means to further improve the videos: "*They should provide more sources and citations. That would make the videos more verifiable. Generally, the videos were pretty easy to follow and watch though.*" ($P27_{Image}$). Likewise, three participants indicated a more detailed video would have improved the videos' engagement.

4.3.2 Impact of the Videos' Narrative. Twenty-seven participants indicated that the "*logical*" ($P53_{Face}$, $P61_{Text}$, $P66_{Text}$, $P113_{Face}$), "*detailed*" ($P76_{Text}$, $P94_{Image}$, $P97_{Image}$, $P102_{Face}$, $P113_{Face}$), and "*clear*" ($P31_{Image}$, $P96_{Image}$, $P100_{Image}$) explanations of the videos impacted their opinions on the presented topics. Additionally, the short-form nature of the videos was reported as an appeal for eight participants due to the conciseness of information ($P21_{Image}$, $P88_{Image}$). However, eighteen participants maintained that the videos had little to no influence on their beliefs due to the lack of source or evidence: "*They didn't show any sources, so I can't trust them fully. I only know what I've done research on*" ($P65_{Text}$).

4.3.3 Influence of Prior Knowledge. Fifteen participants reported being influenced by the videos when they were "*unsure*" ($P31_{Image}$) about or "*lacked knowledge*" ($P3_{Text}$, $P24_{Image}$, $P40_{Image}$,

$P105_{Face}$) on the topic being discussed in the video. Further, prior beliefs on the topic also influenced participants' perceptions as fifteen participants felt the videos "*validated*" ($P69_{Text}$) and "*reaffirmed*" ($P102_{Face}$) the confidence towards their answers. Conversely, nine participants' stated awareness of the inaccuracy of the statements made in one video caused them to question the credibility of that specific video: "*The videos that confirmed what I already thought obviously make me initially feel validated whereas the videos that went against what I thought I knew made me feel sceptical.*" ($P45_{Face}$). However, five participants asserted the videos did not influence their answers due to distrust for *all* videos after identifying a video that contained a "*myth*" ($P39_{Image}$) : "*I felt like the videos should be taken as an authority on the subjects until they went against what I knew to be true.*" ($P36_{Image}$).

4.3.4 Perceived Presenter Credibility and Delivery. Participants' perceptions about the presenter appeared to affect their appraisal of the videos. Fourteen participants from the **Face** group noted that the presenter seemed "*knowledgeable*" ($P54_{Face}$, $P58_{Face}$, $P105_{Face}$) and "*intelligent*" ($P43_{Face}$) which led them to perceive her as an "*expert*" ($P120_{Face}$). Moreover, the presenter's narration style had an impact on participants due to the perceived confidence and assertiveness of the delivery: "*How confident she sounded [made it] hard not to let it influence me on some things.*" ($P15_{Text}$).

4.3.5 Production Quality and Video Format. Interestingly, four participants perceived the videos to be credible due to the production quality of the videos: "*I think it was a mixture of the lady's authoritative speaking voice, mixed with the high production value of the animations that made me trust the videos*" ($P86_{Image}$). Further, seven participants indicated their trust in the videos as they "*felt like a fact check*" ($P77_{Text}$) and "*seemed like educational content*" ($P66_{Text}$). Furthermore, eight participants found the short video format appealing as it "*gets the point across*" ($P107_{Face}$).

4.3.6 Impact of Visual and Audio Elements. Three participants referenced the appeal of the visual elements, and five participants mentioned the audio elements as factors that influenced their trust in the videos: "*Characteristics that influenced my feelings included the quality of visuals, the emotional tone, the use of music and creating a connection to the statements [...]*" ($P41_{Face}$). In regard to the overall visual experience, six participants reported that captions improved the clarity of the presented information in the videos: "*Words... some people are visual learners and follow by reading subtitles or pop-up boxes.*" ($P42_{Face}$).

5 Discussion

The widespread adoption of short video platforms has amplified the dissemination of both accurate information and misinformation. Apart from platform-level interventions, platform users are increasingly engaging in the production of debunking content to counter the spread of false information. These debunking videos employ varied presentation styles, which influence the media richness of the videos and, consequently, their persuasive effectiveness. By focusing on three commonly used presentation styles, **Text**, **Image** and **Face**, we set out to investigate which presentation style demonstrates the highest level of persuasiveness to improve the effectiveness of debunking videos for the purpose of mitigating the misinformation spread within these platforms.

5.1 Impact of Presentation Styles on the Persuasiveness of Debunking Videos

Our results show that the persuasive power of the presentation styles **Image** and **Face** is higher compared to **Text** presentation style, as supported by both the descriptive (Figure 5 *top-right*) and statistical analysis (Table 2) conducted. This pattern aligns with media richness theory, which posits that richer media, those conveying multiple cues such as visual, verbal, facilitate more effective communication than leaner media forms such as text alone. Accordingly, incorporating richer

media elements, such as animations and human presence (e.g., a presenter's face), significantly enhances the effectiveness of short-form debunking videos compared to using lean media elements like text-based presentations.

The presence of the creator's face was deemed more persuasive than only seeing text with voice over. Participants in the **Face** condition explicitly noted that the presenter's perceived credibility influenced their judgement. This credibility was conveyed not only through the presenter's delivery style but also through the broader social cues associated with face-to-face communication. According to Mayer [53], the principles of multimedia learning suggest that the presence of a human face serves as a social cue, signalling authenticity, approachability, and a sense of social presence. These cues can foster deeper cognitive processing in viewers, ultimately enhancing learning outcomes.

Despite the advantages of featuring a human face in the video, it was about equally effective as **Image** in persuading participants, and not significantly more effective than the **Text** presentation style. While the presence of a face enhanced perceived credibility and trustworthiness, participants in the **Image** condition found the visuals more engaging and informative. The dynamic nature of animations helped clarify complex ideas, making the content more digestible and memorable. As suggested in Dual-Coding Theory [70], when verbal information is combined with supporting pictorial information, this can enhance comprehension and retention as it allows the brain to process and store the information through two distinct but interconnected channels—visual and verbal, creating multiple pathways for recall and deeper understanding.

To improve comprehension and retention, the video design of the debunking videos should incorporate well-structured visuals and synchronised content, facilitating dual processing to reduce cognitive load. Poor design, such as disjointed text and images, can lead to the split-attention effect, increasing cognitive strain and hindering comprehension [7].

5.2 Towards Effective Debunking Content Creation

The emergence of social media platforms has significantly accelerated the spread of misinformation. Although these platforms implement various mechanisms such as using warning labels [50, 87], removing content [97], directing users to accurate information [88] and using community notes [55, 109] to mitigate the spread of misinformation, user retention is a core aspect of their business model and is actively driven by user engagement strategies and content virality. This focus on highly engaging content often conflicts with efforts to restrict or prevent the dissemination of false information. The drive for shareable content can inadvertently promote sensational or misleading material, undermining the platforms' efforts to combat misinformation. While both external and internal professional fact-checkers work to correct misinformation, the sheer volume of false information poses a significant challenge. Misinformation spreads rapidly and appears frequently, making it difficult for fact-checkers to keep up [27]. As a result, many false claims remain unverified for extended periods, allowing them to reach and influence a large audience before being detected [29]. Consequently, the task of correcting misinformation has increasingly been taken up by users, particularly experts and enthusiasts in relevant fields. A notable example is the COVID-19 pandemic and its aftermath, during which many health professionals actively worked to correct misinformation [89, 108]. This form of 'citizen fact-checking' not only increases the frequency of misinformation correction but also has the potential to foster greater trust among audiences. As research shows that people tend to distrust professional fact-checkers due to concerns about their independence assessment [28], users—especially experts and enthusiasts—could be seen as more impartial and relatable.

Misinformation corrections are disseminated in various formats across online platforms, including text-based formats (e.g., Facebook posts) and visual infographics (e.g., Instagram posts). However, prior research has demonstrated that, for video-based misinformation on video-sharing platforms,

video corrections are the most effective modality [33]. Accordingly, by examining the persuasive effect of different presentation styles, we sought to understand the most persuasive style in creating effective debunking videos. Based on our findings, we propose the following recommendations to develop effective short-form debunking videos.

5.2.1 Recommendations for Effective Debunking Videos. Participants in the **Face** condition frequently reported trusting the presenter because she *seemed* knowledgeable and intelligent. This finding is particularly noteworthy, as it suggests that participants were persuaded by the presenter's perceived competence, even without prior knowledge of her actual expertise or credibility. Simply seeing the presenter's facial expressions, demeanour, and non-verbal cues appeared to influence their judgement. This highlights the powerful role of visual and non-verbal elements in persuasion.

> **Recommendation 1:** Ensuring that the presenter maintains confident body language, appropriate facial expressions, and a professional appearance can improve the persuasiveness of the message.

Our study also found that debunking videos with the presenter visible are not significantly more effective than those using images. This suggests that videos with animations, when designed appropriately, can be just as persuasive in debunking misinformation as videos with a visible presenter. This is particularly beneficial for individuals who wish to contribute to misinformation correction but are uncomfortable appearing on camera. By leveraging these visuals, creators can maintain effectiveness while also avoiding potential biases associated with a presenter's appearance. Furthermore, animations allow for greater flexibility in presentation. Unlike face-to-face videos, animations enable precise control over visual elements, making it easier to highlight key arguments, simplify complex concepts, and sustain audience engagement. Additionally, animated content can be easily modified, localised, and repurposed for different audiences, making it particularly advantageous for large-scale misinformation correction efforts.

> **Recommendation 2:** Creators who may feel uncomfortable appearing on camera should consider using animations to produce effective debunking videos without a presenter.

With the help of user-friendly, free video editing tools such as Canva[12] and CapCut[13] , content creators with minimal video-making expertise can still produce engaging and persuasive videos. They can also use AI-powered tools such as Adobe Firefly[14] to assist them with video editing. However, there are a few aspects that should be kept in mind when creating such videos. While the aforementioned tools have made it much easier for more people to contribute to the debunking efforts, the videos should not be created with low production values. This does not imply that videos must be professionally produced. In fact, the stimuli used in our study were not created by professionals but developed using freely available software tools. Nonetheless, we ensured that the videos featured high-quality visuals and relevant background music to enhance viewer engagement. Maintaining a certain standard of visual and auditory quality can help sustain attention and increase the perceived credibility of the content, even when produced on a limited budget.

> **Recommendation 3:** Platforms should provide in-house, easy-to-use editing and AI-assisted animation tools that allow users to create high-quality correction videos without requiring advanced technical skills or professional software. This will help to reduce barriers to entry for

[12]https://www.canva.com/create/animated-videos/
[13]https://www.capcut.com/tools/online-video-editor
[14]https://firefly.adobe.com/

citizen fact-checking efforts, empowering a broader range of users to participate in misinformation correction, making fact-checking content more accessible and timely on social media platforms.

While in-house tools for easy video creation can significantly lower the barrier for citizen-led fact-checking and support the production of persuasive debunking content, these same tools and design insights can also be leveraged to create equally persuasive misleading content. Due to their content-neutral nature, such functionalities may inadvertently facilitate the amplification of misinformation if not accompanied by appropriate oversight and regulatory mechanisms.

Recommendation 4: Platforms should complement these tools with safeguards such as community-based verification systems (e.g., Community Notes), algorithmic checks for harmful or false content, and transparency features that signal content source and editorial intent. This combination can help ensure that the persuasive potential of these tools is directed toward constructive, truth-promoting uses rather than misinformation or manipulation.

A few participants raised concerns about the believability of the debunking videos due to the absence of corroborating sources. The inclusion of source cues typically signals credibility, which in turn could influence viewers' trust in the content [63, 103]. Specifically, Putnam and Phelps [85] found that when evidence is presented alongside cited scientific sources, people are more likely to believe the information—a phenomenon referred to as the 'citation effect'. However, despite this claim made by both our participants and prior literature, participants' behaviour suggests otherwise. The debunking videos in our study were still persuasive even without sources, despite challenging participants' prior beliefs. This aligns with the findings of Heiss et al. [35], who studied the effects of credibility cues in medical correction videos on TikTok. They found that referencing a scientific study did not increase belief in accurate information, nor did it improve credibility or increase the perceived expertise of the person sharing the information. In fact, participants assessed a non-expert sharing a scientific study as having lower expertise than one who does not cite a scientific study. They argued that this effect may stem from the way laypeople citing scientific studies inadvertently highlight their lack of expertise, especially compared to the original researchers. This may also reflect a familiar TikTok genre where users present studies in a misleading or overly simplistic way, prompting viewers to perceive such content as less credible [62].

Recommendation 5: Content creators should focus on demonstrating subject-matter understanding, using clear and engaging explanations, and delivering their message confidently and authentically, rather than relying solely on citations, to build trust and effectively correct misinformation.

Another notable observation was that participants were more likely to believe the debunking videos when they resembled 'educational content' or 'fact-checking segments'. While designing the stimuli, we drew inspiration from existing debunking videos related to the misinformation topics used in the study. Our videos featured a plain background, formal setting, and a neutral, professional tone of narration. These elements may have led participants to perceive the content as part of a credible fact-checking effort. The familiarity of this presentation style may have increased trust in the narrator. Therefore, while short video platforms like TikTok are primarily used for informal, entertaining, and humorous content, creators aiming to correct misinformation can still be effective without relying on those conventions. Although incorporating humour and engaging storytelling can be powerful tools for capturing attention, not all creators may feel comfortable using them or may not naturally adopt that style. In such cases, adopting a more formal, structured format—similar to established fact-checking videos—can still be effective. In fact, the contrast between a serious tone and the casual content users typically encounter while scrolling may itself

help the video stand out and capture attention. This unexpected shift in tone can signal credibility and draw viewers in, offering a persuasive alternative that aligns with the creator's strengths.

> **Recommendation 6:** Creators who prefer a more serious, respectful tone or lack the confidence or skill to incorporate humour should consider adopting a formal, structured presentation style similar to established fact-checking videos. This approach can maintain credibility while effectively addressing misinformation.

While these recommendations are not the sole methods for improving debunking videos, their implementation can improve the effectiveness of such content. We anticipate that these recommendations will assist content creators in developing more persuasive videos and guide platforms in recognising the types of tools—such as accessible animation software, editing tools, and templates—that should be provided to support the creation of high-quality, engaging, and credible content.

5.3 Limitations and Future Work

We acknowledge several limitations in our study. First, our analysis focused only on the three presentation styles most commonly used by content creators. However, presentation styles are not limited to these formats. Creators will sometimes employ more complex approaches, such as combining face and animations or leveraging TikTok features like duet, stitch, and green screen—tools that allow users to, for example, appear on screen alongside another video, insert their reactions, or overlay themselves onto different backgrounds. Therefore, our study should be taken as a first step rather than generalising the findings to other presentation styles. Future research can consider our findings as a baseline and build upon that by exploring the persuasiveness of these more complex presentation styles in enhancing the impact of short debunking videos. Second, while our study specifically focused on short-format videos, the effect of presentation style on longer-format videos remains unknown. Future research should investigate whether the persuasive impact of different presentation styles varies in extended video content. Third, our study utilised a single presenter, which may have introduced sex-related biases among participants. Although we controlled for this effect by including sex as a variable in the model, further research is needed to better understand how the presenter's sex influences persuasiveness. Investigating whether viewers' perceptions and responses differ based on the sex of the presenter could provide valuable insights into understanding how to create effective debunking videos. Fourth, our analysis identified several characteristics such as delivery style and perceived credibility that participants used to assess the trustworthiness of the content. Future research should employ a broader range of exemplars to systematically vary these characteristics and further examine their role in shaping persuasiveness. Fifth, while the solid blue background used in the videos was implemented to ensure internal validity by minimizing variability across conditions, this does not reflect real-world settings. In practice, video backgrounds are often more dynamic and visually diverse, which can influence viewers' engagement and perceived persuasiveness. Future studies should therefore examine how different background types; such as thematic backgrounds that visually align with the video's topic, or contextual backgrounds that situate the speaker in a realistic environment affect the persuasive impact of correction videos. Finally, our study focused on widely held general misconceptions to examine the persuasiveness of different presentation styles. Future research could explore whether the level of persuasiveness varies depending on the topic being debunked, such as medical or political misinformation. If differences exist, further investigation is needed to determine how to tailor presentation styles more effectively for specific misinformation topics to maximise their corrective impact.

6 Conclusion

The proliferation of misinformation on social media platforms has led to significant societal and individual consequences. In response, efforts to mitigate its spread have been undertaken not only by social media platforms and professional fact-checkers but also by domain experts and enthusiasts among ordinary users. One widely adopted approach on short-video platforms is the use of debunking videos, in which creators leverage various audio-visual elements to persuade viewers of the truth.

Given the demonstrated effectiveness of video-based corrections in prior research and the principles of media richness theory, we conducted a study to examine the persuasive impact of three distinct presentation styles: **Text**, **Image** and **Face**. Our objective was to provide a deeper understanding of the varying persuasive power of these formats, with the goal of informing content creators on effective debunking strategies and laying the foundation for future research in this domain.

We found that videos featuring a visible presenter or incorporating relevant images and animations are more persuasive than those relying solely on captions. Additionally, insights derived from our qualitative analysis inform a set of recommendations for content creators and platforms to improve the effectiveness of debunking videos. These findings offer valuable implications for misinformation correction strategies, providing a foundation for both practitioners and researchers to refine and optimise debunking efforts on short-video platforms.

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