Emotional Influences on Misinformation Spread: Insights from a Systematic Literature Review

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This systematic literature review investigates the influence of emotions on the perception and spread of misinformation on social media platforms, focusing on domains such as disaster, health, and politics. Following Webster's guidelines, we conducted a comprehensive search across multiple databases, including Web of Science, ACM Digital Library, and Scopus, using predefined keywords related to misinformation and social media. Our thematic focus excluded platforms like LinkedIn, emphasizing social media giants like Twitter and Facebook. From the initial search in June 2023 and subsequent updates, we selected 20 peer-reviewed articles published between 2018 and 2023 that met our inclusion criteria. Quality assessment using NVIVO software and intercoder reliability checks ensured robust data analysis and consensus among researchers. Results from the 20 selected studies revealed a strong correlation between emotions and the dissemination of misinformation. Emotions such as fear, anger, and disgust were found to play significant roles in the rapid spread of false narratives, particularly during crises like natural disasters. The influence of emotional cues on individuals' perceptions of fake news was evident, with studies highlighting the impact of emotional framing and cognitive dissonance. Additionally, our review identified the domains of health, disaster, and politics as critical areas where misinformation can have severe consequences, including hindering rescue operations and exacerbating existing crises. Emotionally charged content on social media was observed to contribute significantly to the virality of false information, emphasizing the need to understand and address emotional drivers in misinformation propagation. Our findings suggest a complex interplay between emotions, cognitive processes, and information dissemination on social media, underscoring the importance of considering emotional factors in combating misinformation. This study provides a roadmap for future research and interventions aimed at mitigating the harmful effects of misinformation in sensitive domains.

Keywords: Emotions, Cognitive Process, Social Media Content, False News, Misinformation Propagation.

Introduction:

Rumors, misinformation, disinformation, and mal-information present persistent challenges across various media platforms. However, these challenges are particularly exacerbated in digital media, notably on social media platforms. The ease of access and rapid dissemination of information, coupled with the difficulty in correcting false information, poses significant challenges in managing undesirable content. Despite these obstacles, social media has also played a pivotal role in disseminating timely and impactful information. For instance, movements like #BlackLivesMatter, the 2011 Arab Spring, and the 2017 #MeToo movement were fueled by social media, uniting people globally in solidarity against issues such as police brutality and sexual harassment [1].

While scholars have begun to address the issue of information disorder on social media, there remains a scarcity of synthesized insights from these studies. Misinformation, which refers to false or misleading information that spreads unintentionally, has garnered increased scholarly attention, especially following notable events like the 2016 USA Presidential election, where its impact on election results became apparent. The term 'misinformation' was even identified as a global risk by the World Economic Forum [2].

Similarly, 'disinformation' is another prevalent term often associated with intentional spread of fake or misleading information, frequently seen in political contexts where state actors utilize it for strategic gains. Instances such as the surge in fake news during the initial stage of the COVID-19 pandemic in India, linking the virus to a specific religious group, exemplify the impact of disinformation on public perception and social dynamics [3]. Terms like 'rumors' and 'fake news' are also intertwined with misinformation, denoting unverified information and deliberately misleading content, respectively. Source ambiguity, confirmation bias, and social ties contribute to the proliferation of rumors, while mal-information involves the deliberate use of accurate information to incite hatred or abuse towards individuals or groups. Our review delves into the phenomenon of misinformation specifically within the context of social media platforms, exploring the factors that contribute to its spread through a systematic analysis of existing literature [4][5][6][7].

The origins of news generation trace back to the early 1900s, but the proliferation of fabricated news has surged alongside technological progress. This trend is exemplified in the emergence of social media platforms, which have revolutionized the creation, distribution, and consumption of harmful information on an unprecedented scale. These platforms often present an overwhelming amount of sensitive content to users, triggering a range of emotional responses that can impact how individuals engage with news content manifesting in actions like liking, sharing, commenting, and messaging [8] [9]. Despite the substantial impact of emotions on news consumption behavior, research on misinformation in social media has predominantly focused on cognitive factors in detecting false news. This emphasis overlooks the significant role emotions play in users' interpretation of inaccurate information. Consequently, interventions targeting misinformation that solely rely on cognitive abilities may fall short in effectively helping users discern between authentic and fraudulent news [10][11][12].

The substantial financial investments by governmental bodies, media entities, and institutions aimed at combating misinformation on social media platforms underscore the seriousness of this issue and the recognition of its far-reaching consequences [13]. Scientific research on the subject enables the development of efficacious counterstrategies aimed at mitigating the adverse impacts of fake news on society. This research enhances our comprehension of the propagation, impacts, and cognitive and emotional foundations of bogus news. In the realm of social media, this holds particular significance because to the unimpeded accessibility facilitated by these platforms, hence augmenting the general populace's exposure to a plethora of information from diverse origins without incurring any expenses. Indeed, it is incumbent upon the average user to ensure the quality control of social media material, as they often lack the expertise or familiarity to authenticate news prior to engaging with or disseminating it. Consequently, the dissemination of deceptive information among individuals utilizing social media platforms is a prevalent phenomenon, thereby expediting its propagation [14].

The dissemination of inaccurate information on social media platforms during the 2014 Ebola outbreak serves as a notable illustration of the adverse consequences of disinformation, as it contributed to the development of hostility towards healthcare practitioners. The proliferation of inaccurate information is expedited by deceptive social media profiles, which possess the ability to rapidly reach a wide-ranging audience and hinder endeavors to mitigate the spread of the epidemic. The intensity of this situation is heightened by the extensive volume of

content disseminated on social media and the increasing number of individuals who depend on these platforms as their primary news source, frequently from unreliable sources. Research indicates that the majority of Twitter users, over 90%, primarily utilize the platform for news consumption. It is not unexpected that a considerable body of research has emphasized the significance of examining the mechanisms involved in the transmission of information, as well as the various factors that lead to the rapid dissemination of inaccurate information on social media platforms [15].

Consequently, the dissemination of inaccurate information on social media has emerged as a significant concern. Moreover, it has been observed that the majority of scientific investigations pertaining to the dissemination of false information on social media have deviated from examining the perspectives of users on these platforms. Given the aforementioned findings, we have made the decision to undertake a methodical examination of the scholarly literature with the aim of elucidating, assessing, and consolidating the existing corpus of knowledge pertaining to the impact of emotions on the perception of misinformation on social media platforms. Given the readily observable psychological effects of affect and its potential influence on other societal outcomes, such as polarization, our focus is directed towards them. The term "affect" is employed in this study to align with the terminology often used in the domains of information systems and psychology [16] [17].

Objectives:

The objective of this review is to enhance our understanding of the diverse elements that impact the perception of fake news on social media platforms. This will be achieved by emphasizing important subjects, identifying places where existing research is lacking, and revealing gaps in understanding. Hence, the review's findings can provide direction on how to assist social media users in differentiating between genuine and misinformation. They can influence the architecture of social media in a manner that effectively mitigates the dissemination and adverse consequences of misinformation.

The paper's organization is outlined as follows. The initial section introduces the concept of misinformation within the context of social media. Section 2 presents a concise summary of previous research efforts concerning misinformation and social media. In Section 3, we elaborate on the research methodology, encompassing specifics of the literature search and the criteria employed in the selection process. Section 4 delves into the analysis of misinformation dissemination on social media, focusing on three core themes: disaster, health, and politics, alongside the review's discoveries. This section covers the current landscape of research, theoretical underpinnings, factors influencing misinformation on social media platforms, and strategies aimed at mitigating its propagation.

Literature Review:

Unverified or unclear messages are common on social media platforms, leading researchers to explore them from various angles. These messages are often labeled as "misinformation," "disinformation," "fake news," and "rumor." Each term highlights the false nature of information but differs in its specifics. Misinformation typically refers to false information without a clear intent or motivation, serving as a broad term for inaccuracies. Disinformation, in contrast, involves intentionally altering accurate information for personal gain before spreading it. Similarly, fake news involves spreading false narratives under the guise of reliable sources, often for economic or political motives. Rumors, on the other hand, can encompass both true and false information and are characterized by uncertain motivations and intentions [18].

Understanding misinformation is crucial in grasping its impact on social media. Researchers emphasize its misleading nature, as it can influence public decision-making, actions, and emotional states. Misinformation triggers adaptive responses in individuals, leading to interactions with the external environment and amplifying its impact. It serves as a warning

signal, revealing how external stimuli shape public emotions during tense situations. Additionally, misinformation reflects the underlying psychological states behind public emotions in social environments. For instance, during social crises, misinformation can exacerbate emotional responses, leading to widespread emotional clusters that may disrupt social order and have adverse societal effects [19].

The term "fake news" as defined by [20], a commonly cited and extensively referenced definition in the literature on fake news, refers to "fabricated information that imitates news media content in its structure but lacks the same organizational process or intention." This definition encompasses all forms of false and deceptive information. The results section will include a comprehensive analysis of many viewpoints on emotions in misinformation research, including dimensional, discrete, epistemic, non-epistemic, self-conscious, and other-condemning perspectives. The dimensional method solely takes into account the emotional valence of the material, encompassing its positive, negative, or neutral nature. Conversely, the discrete perspective on emotion posits that every experiencing emotion is attributed to a unique source and can result in behavioral or physiological consequences. Epistemic emotions arise from cognitive evaluations of the extent to which novel information aligns with or diverges from preexisting knowledge or beliefs. There exists a close relationship between the processing of information and the perceived quality of knowledge. Scholarly research on disinformation has ultimately classified moral emotions into two distinct classifications: "self-conscious" emotions, encompassing sentiments like as pride, regret, and shame, and "other-condemning" emotions, encompassing sentiments like rage, disgust, and contempt. The models pertaining to misinformation and disinformation are derived from distinct lines of inquiry [21].

Scholars from diverse academic domains have been driven to investigate, define, and reproduce instances of misinformation and disinformation due to the widespread deceit observed on social media platforms. These initiatives aim to identify crucial factors that evaluate the accuracy of information and influence its spread on social media platforms. Furthermore, various studies have explored the factors influencing the propagation of misinformation on social media. It has been observed that distinguishing between true information and misinformation can be challenging, leading to the misperception of misinformation as accurate information, a key driver behind its sharing and dissemination on social platforms. While users may endorse the spread of unverified information, they typically refrain from sharing content that is demonstrably false. The crux of the issue lies in users' often limited ability to discern misinformation before sharing it [22]. [23] has delved into the underlying reasons for this deficiency in misinformation recognition, with a focus on political, psychological, and media literacy perspectives. From a political standpoint, studies suggest that individuals' political orientations influence how their brains process information, leading to information bias and a tendency to trust false information. For instance, an identity-based model of political orientation has been proposed to elucidate this phenomenon. Other investigations have combined web browsing and survey data to analyze the sharing of fake news during political events, revealing that behavioral preferences significantly impact trust in misinformation. People tend to believe false stories about politicians they support, even if these stories are implausible.

Psychological studies have measured respondents' ability to perceive misinformation accurately using tests like the Cognitive Reflection Test (CRT). Results indicate that higher CRT scores correlate with better misinformation detection and accuracy, underscoring the role of psychological factors. Analytical thinking is highlighted as crucial in discerning true from false information [24]. In the realm of media literacy, scholars argue that a lack of digital media literacy contributes to the public's trust in misinformation spread on social media. Empirical studies assessing media literacy interventions during elections corroborate the importance of digital media literacy in identifying misinformation. Comparisons between different aspects of media literacy, such as information literacy and news literacy, demonstrate the effectiveness of

information literacy in enhancing the public's ability to recognize misinformation. These multifaceted studies provide valuable insights into the spread of misinformation on social media and shed light on why internet users share and disseminate inaccurate information [25].

Materials and Methods:

Methodology:

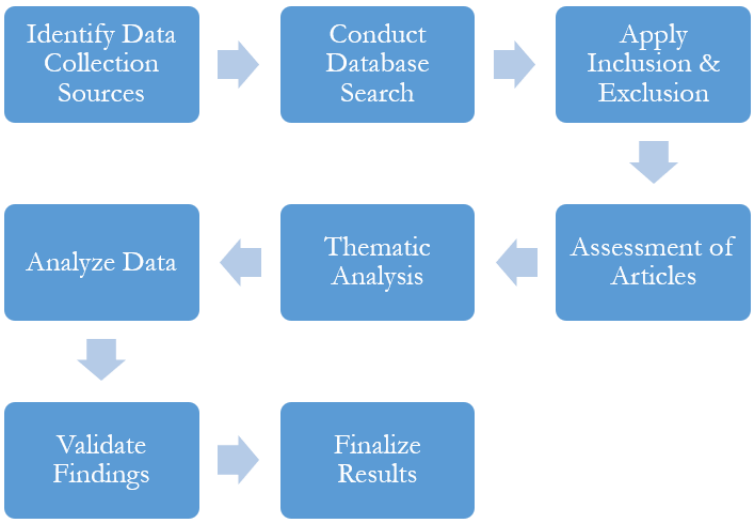

Figure 1: Flow of Methodology.

Literature Review Framework:

We conducted a systematic literature review following the guidelines set forth by Webster [22]. This structured approach ensured the quality and relevance of the literature selected for our study on misinformation spread.

Data Collection Sources:

Our search encompassed various databases, including Web of Science, ACM Digital Library, AIS electronic library, EBSCO host business source premier, ScienceDirect, Scopus, and Springer link. Additionally, we manually searched Information Systems (IS) journals to ensure comprehensive coverage.

Search Strategy and Criteria:

Employing predefined keywords such as 'misinformation,' 'rumors,' 'spread,' and 'social media,' we conducted searches in article titles, abstracts, and keyword lists. The literature search was initially conducted in June 2023, with a subsequent update in December 2023 to include recent publications.

Thematic Focus and Exclusions:

Our review focused on the domains of disaster, health, and politics due to their susceptibility to misinformation's impacts. We excluded platforms like LinkedIn and Behance, prioritizing social media platforms such as Twitter, Facebook, and WhatsApp.

Article Selection Process:

Inclusion criteria included studies published in English between 2018 and 2023, peer-reviewed articles directly relevant to social media misinformation, and exclusion of reviews, theses, dissertations, and unrelated articles. We selected 20 articles based on thematic relevance and quality assessment.

Quality Assessment and Coding:

Articles were assessed for quality based on journal ratings and relevance to our thematic focus. We used NVIVO software for data analysis, employing an inductive coding approach. Intercoder reliability checks ensured consistency and accuracy in data interpretation.

External Validation and Consensus:

To validate our findings, an external research scholar assessed a subset of articles for intercoder reliability, achieving a high level of consensus. Disagreements were resolved through discussion and consensus among researchers and the external evaluator.

Results:

The review encompassed a total of twenty research papers, with eight of them being conducted online, one in a laboratory setting, and ten entailing the utilization of content analysis techniques such as sentiment analysis, text mining, textual analysis, readability, and natural language processing. The health sector accounted for two thirds of the publications, while politics accounted for 12%, psychology accounted for 8%, and sociology accounted for 41%. A total of twenty-eight studies were conducted to investigate various dimensions of emotion. Two studies examined the correlation between emotion and the spread of misinformation from various viewpoints. A study differentiated between morally righteous and morally wrong emotions expressed on social media. Two experiments have indicated the existence of a distinction between epistemic and non-epistemic emotions. After conducting a comprehensive corpus analysis, it was determined that out of the 15 research that investigated the influence of individuals' emotions on their perception of misinformation, 11 articles specifically focused on the significance of emotional cues in molding individuals' views of false news. A majority of the papers, specifically 10 out of 14, employed questionnaires and self-report methods to examine the impact of effect on the perception of fake news. Conversely, one research utilized neurophysiological procedures to evaluate emotional states.

Disaster, health, and politics have emerged as critical domains where misinformation can have severe consequences, often resulting in casualties or irreversible effects. Addressing these consequences can also impose significant financial or human resource burdens, given the scale of impact and the risk of disseminating harmful information to the public. These domains are inherently sensitive, and the challenges posed by misinformation within them have drawn substantial attention from researchers and governments. Misinformation in these areas has a heightened potential to worsen existing crises within society. Misinformation in the context of disasters raises concerns about the credibility of information shared on social media during emergencies. Affected communities often lack localized information necessary for making crucial decisions, leading to the rapid spread of misinformation or improvised news. Social media's broadcasting power and the re-sharing of misinformation can hinder and delay rescue operations. Local individuals, acting as immediate reporters through social media, may inadvertently contribute to misinformation propagation, impacting rescue efforts negatively.

Complexity in information processing and sharing is a defining characteristic of crises, leading to challenges like information overload and information dearth. Information overload occurs when excessive inquiries and fake news distract response teams, slowing down their ability to validate information. Information dearth refers to the lack of localized information necessary for affected communities to make informed decisions. Rumors play a significant role in crisis communication, filling the gaps created by information overload and dearth. Variables such as anxiety, information ambiguity, personal involvement, and social ties contribute to rumor propagation during crises, influencing community behaviors and decision-making processes [26]. The second phase of misinformation propagation involves its retransmission, with significant variables identified by various studies. Apart from the factors contributing to rumors as noted by [27] highlighted sender credibility and attractiveness as key elements influencing misinformation retransmission. Personal involvement and content ambiguity also play roles in misinformation transmission. [28] delved into retweeter motives on Twitter during disaster situations, identifying factors such as content relevance, early information, content trustworthiness, emotional influence, retweet count, pro-social behavior, and the need to inform their circle as drivers of retweeting behavior.

[29] explored how Twitter features impact message diffusion, particularly during crises like the 2013 Boston marathon tragedy. They found that tweets with shorter reaction times had a greater impact during disasters, suggesting that timely communication from officials could help mitigate misinformation spread. Hashtags were also found to influence misinformation spread, with tweets without hashtags often diffusing more widely during crises due to contextual differences. Behavioral aspects of social media users play a crucial role in misinformation retransmission, as observed by [30]. They found that individuals are more likely to spread threatening misinformation they believe, taking precautionary actions based on this misinformation. Repetition of misinformation from different sources can also enhance its believability. However, users are less inclined to share false information once they realize its inaccuracy.

Platform architecture significantly affects misinformation spread and believability. For instance, social media post engagement metrics like likes and shares can increase the perceived credibility of misinformation [47]. Our systematic review noted a higher concentration of studies on disaster misinformation using the Twitter platform. Video messages had a stronger impact than text or audio messages, especially if they contained religious or cultural narratives, leading to behavioral responses. Healthcare misinformation is another critical area identified in our review. Studies by [31] highlighted the prevalence of health-related misinformation on social media, particularly regarding vaccines and infectious diseases. Such misinformation can delay proper treatment, contributing to increased casualties within public health domains. Personal experiences and traditional remedies shared online can further contribute to misinformation, often lacking accuracy compared to health-related websites. Conspiracy theories and pseudoscience also play roles in escalating casualties due to misinformation.

The characteristics of healthcare misinformation differ from other domains, with dread and wish being identified as rumor types influencing public reactions. Dread rumors create panic and unpleasant consequences, while wish rumors provide hope. Pictorial representations can enhance the impact of health misinformation, although textual rumors are preferred by users. Epistemic beliefs of users also influence their sharing behavior, with simplified sharing options on platforms facilitating misinformation spread. Social networking sites like Facebook and Twitter dominate misinformation discussions, although other platforms like WhatsApp, TikTok, and Instagram have also been reported to facilitate misinformation dissemination, especially during critical events like the COVID-19 pandemic [32].

Political misinformation is another significant area of concern, with studies highlighting its influence on elections and public opinion. The 2016 US Presidential election and elections in other countries have seen misinformation shaping voter perceptions. Partisan effects and algorithmic manipulation of feeds contribute to misinformation's impact on political discourse. Verification challenges and delayed corrective actions further amplify the consequences of political misinformation, making it a persistent issue in contemporary societies. Characterizing misinformation in politics reveals the significant influence of confirmation bias within social media contexts. Users often engage more with content that aligns with their existing beliefs and political leanings, while dismissing contradictory information [46, 48]. For instance, during the 2016 US election, fake news favoring Trump gained traction among Republican supporters. Misinformation tends to circulate rapidly within echo chambers of like-minded individuals. The design of social media interfaces can also contribute to misinformation proliferation. [33] explored how platform presentation formats subtly guide users' acceptance of information, placing less emphasis on the source's credibility. This manipulation can lead users to trust information from reputed sources while disregarding lesser-known ones.

Studies by [34] suggest that warning tags or flags on headlines could mitigate misinformation spread. However, implementing such tags for all misinformation is impractical due to the rapid generation of false information. Additionally, the fact-checking process on

social media often lags behind, leading users to perceive untagged content as accurate. This phenomenon, termed the implied truth effect, highlights how users may infer accuracy from the absence of warning tags. Source reputation ratings further influence information credibility, with low-rated sources receiving less trust from readers.

Theoretical Perspectives on Social Media Misinformation:

In this review of articles related to social media misinformation, we identified six theoretical perspectives that were prominently used. Among these, rumor theory emerged as the most frequently utilized theory, featured in four articles chosen for our review. For instance, [35] delved into citizen-driven information processing on Twitter during social crises, employing rumor theory to identify key variables such as source ambiguity, personal involvement, and anxiety contributing to misinformation spread. Similarly, [36]examined message retransmission in disasters through the lens of rumor theory. Furthermore, diffusion theory was applied to understand technological innovation adoption, particularly in analyzing tweet diffusion during extreme events. [36] explored users' belief in social media articles based on various rating mechanisms, employing reputation theory to highlight cognitive biases in expert ratings.

Rhetorical theory, focused on the effectiveness of fact-checkers in combating social media fake news. The study suggested alternative approaches by addressing underlying belief structures that foster misinformation acceptance. Additionally, third person effect theory was utilized to study rumor corrections on Twitter, shedding light on characteristics of collective rumor correction. These theoretical frameworks provided nuanced insights into the dynamics of misinformation spread on social media platforms, highlighting the complexities involved in addressing and mitigating misinformation as illustrated in table 1.

Table 1: Theoretical frameworks used in social media misinformation research

Theory	Description and Application
Rumor Theory	Examines information processing during crises; identifies key variables contributing to misinformation spread
Diffusion Theory	Analyzes technological innovation adoption and information diffusion during extreme events
Reputation Theory	Explores users' belief in social media articles based on rating mechanisms; highlights cognitive biases in expert ratings
Rhetorical Theory	Evaluates the effectiveness of fact-checkers in combating social media fake news; addresses underlying belief structures
Third Person Effect Theory	Studies characteristics of rumor corrections on Twitter; identifies key features of collective rumor correction
Situational Crisis Communication Theory (SCCT)	Analyzes government responses to risk-related rumors during national-level crises; proposes effective rumor response strategies

This table provides an overview of the theoretical frameworks used in social media misinformation research and briefly explains how each theory was applied in relevant studies.

Classification of Emotions in the Study of Misinformation:

Out of the total of 35 studies included in this analysis, 20 of them focused specifically on the distinct or multidimensional viewpoints of emotion. A dimensional model of emotion was employed in ten research publications, while the remaining 20 out of 35 articles utilized a discrete model. Two studies investigated the correlation between emotion and the spread of misleading information, using both multidimensional and unidimensional perspectives. The

study specifically examined the dissemination of rumors on Twitter by categorizing the material based on mood.

The study conducted by the authors of [30] aimed to investigate the potential role of sentiment words and other emotional phrases in social media material in elucidating the disparities in the dissemination of accurate and inaccurate narratives. Likewise, empirical research has demonstrated that when examining the emotional factors that impact the popularity of tweets, adopting a focused and specific approach towards particular emotions yields superior results compared to adopting a broad and general perspective on emotion. These two studies emphasized the need of considering fundamental emotions (a separate viewpoint on emotion) and sentiment (a multifaceted viewpoint on emotion) while analyzing the structural characteristics of inaccurate information. The categorization of the emotion model employed in this study was not feasible due to the utilization of neurophysiological techniques such as electrocardiography and eye tracking for emotion measurement. Within the corpus, three studies have made a distinction between emotions that possess epistemic qualities and those that do not.

The findings highlighted two significant connections: (i) an increased emotional intensity correlated positively with a greater inclination to accept false information and (ii) heightened emotionality showed a negative link with the ability to discern between authentic and misleading headlines. However, emotions tied to analytical thinking like "interest" "alertness" "determination" and "attention" did not follow this pattern. This indicates that people's perceptions of misinformation might be influenced by distinct mechanisms stemming from these "epistemic" emotions. The second investigation delved into epistemic emotions exploring how participants' perceived credibility including factors like dependability objectivity and thoroughness along with their epistemic emotions such as surprise and interest may mediate the relationship between their existing political beliefs and their assessments of the accuracy of both fake and genuine news as well as their tendency to share such news.

The results of the study indicated that the inclination to disseminate erroneous information was influenced by factors beyond emotional responses and credibility evaluations. This suggests that individuals may use several cognitive processes when evaluating deceptive information, particularly when they meet emotions related to epistemic encounters. The aforementioned category of emotions underscores the need of differentiating between epistemic emotions and non-epistemic emotions when investigating the impact of emotions on individuals' judgments of erroneous information. The study examined the relationship between self-consciousness and moral condemnation of others, and identified a distinction between moral and non-moral emotional expressions in social media content. Consequently, scholarly investigations examining the distinct impacts of two moral emotion classifications, namely self-conscious emotions and other-condemning emotions, within the realm of disseminating fraudulent and veracious rumors on social media platforms have unveiled an additional emotional categorization pertaining to misinformation. The researchers made the observation that, in comparison to genuine rumors, deceptive ones elicited a higher number of retweets, particularly when the original tweets predominantly conveyed morally objectionable viewpoints about individuals. Conversely, a positive association was observed between a limited dissemination of information and an increased occurrence of self-aware moral emotion manifestations. This highlights the significance of categorizing emotions as either moral or immoral and differentiating between them when examining the impact of emotions on individuals' perspectives and inclination to disseminate inaccurate information.

Emotion plays a significant role in the mediator's role in processing erroneous information. Empirical research has shown evidence that emotional framing, a skillful strategy for spreading inaccurate information, takes place when an individual's negative emotions are triggered in a certain context. In light of this consideration, [37]conducted an investigation into

the role of emotions as a mediator in the processing of disinformation. This was achieved by examining how emotions mediate the framing effect process within their conceptual framework, which aims to comprehend the significance of emotions in the context of "information disorder." The contention put forth in this paper is supported by an analysis of various empirical studies. The initial statement introduces a theoretical framework that establishes a connection between the dissemination of inaccurate information and cognitive dissonance, wherein negative emotions serve as a mediating factor. This notion posits that the dissemination of misleading information occurs by provoking adverse emotions. Likewise, the study demonstrated that participants' unfavorable perceptions of the political system influenced their attitudes towards both fabricated and authentic news, consequently impacting their perception of the information's credibility. Consequently, information was more precisely ascribed and individuals were enthusiastic to disseminate it, regardless of its veracity. The study revealed that individuals' inclination to disseminate deceptive information was mostly attributed to the act of instigating fear and anger, rather than being driven by thrill or gratification. Additionally, it unveiled the intermediary function that negative emotions serve. This implies that negative emotions may serve as an intermediary factor in facilitating precise decision-making the impact of emotion on how inaccurate information is processed cognitively.

This study examined three scholarly papers that present empirical evidence supporting the hypothesis that emotion plays a significant role in shaping the perception of fake news. A preliminary inquiry into the dissemination of disinformation regarding COVID-19 on the social media platform Twitter indicated that the prevalence of rumors outweighed the dissemination of true information when a significant amount of negative emotional language was employed in the initial tweets. Conversely, an inverse correlation was seen between the degree of viral dissemination and the occurrence of self-conscious emotional expressions in a given tweet. The findings of this study indicate that moral emotions may have influence on the advantages associated with honesty. The findings of the second study demonstrated that the specific emotional conditions of wrath and fear influenced participants' evaluations of the veracity of inaccurate information, resulting in a rise or fall in partisan prejudice [37].

Two contrasting ideas examine the correlation between individuals' emotions and their inclination to absorb knowledge. According to the assimilative-accommodative paradigm, happy and unpleasant emotions have various effects on individuals' cognitive mechanisms, which can have varying implications on how properly people perceive information. According to this idea, persons who are feeling good about themselves tend to go for heuristic processing procedures, whereas people who are feeling horrible about themselves tend to go for more intentional and tedious ones. However, the hypothesis has gotten very little support from the literature that is currently accessible on disinformation. The resource allocation hypothesis, on the other hand, proposes that heuristic information processing mechanisms are activated by both positive and negative emotions. This is because these sensations generate an increase in irrelevant thoughts, which exhaust brain resources and diminish the effort put out in cognitive tasks. The second half of this evaluation adds another degree of complication because the corpus yielded conflicting conclusions about how different emotions and emotional valence affected the acceptance and diffusion of erroneous information. Examining the relationship between emotional valence and belief in misleading information from the standpoint of emotion dimensions provides inconsistent results. Studies have suggested that a greater susceptibility to erroneous information is associated to both positive and negative emotional responses. Recent research has demonstrated that people who are cautious of incorrect information typically feel uncomfortable when using Facebook as a source of information. Furthermore, persons who make negative remarks are more likely to claim that the news is phony. On the other hand, the data indicated no evidence of a significant association between the participants' greater capacity to spot erroneous information and their decreasing positive and negative affect. The corpus

under research, which looked at how emotional valence affects the dissemination of misleading information, was also split in terms of its conclusions. Figure 2 shows the propagation of fake and real news among community.

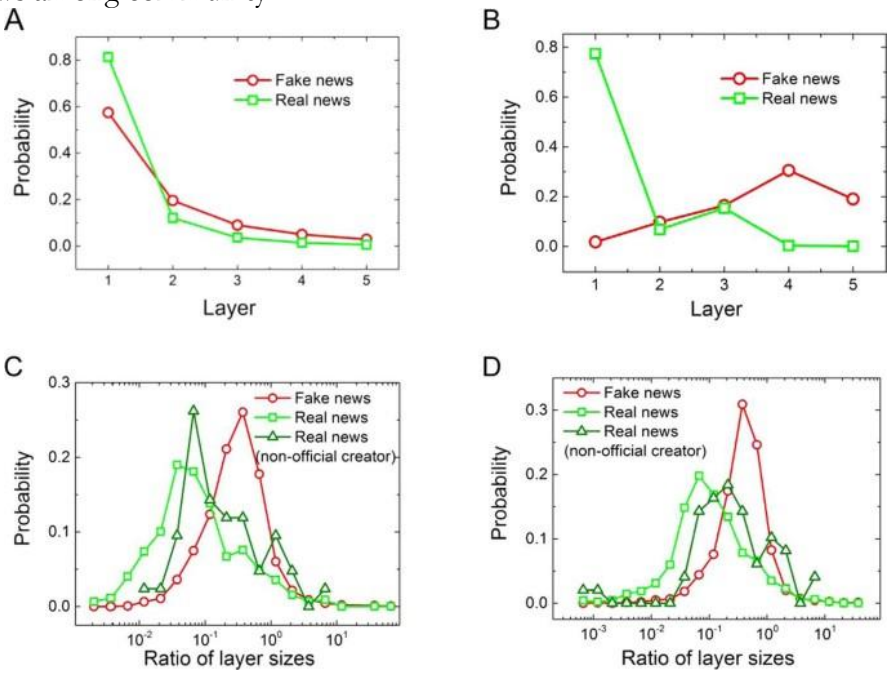

Figure 2: Propagation of Fake News vs Real news [38].

Research examining the relationship between specific emotions and accepting false information indicates that people may be more likely to believe misleading information when they experience elevated emotional states. In the first study, researchers looked at how temporary emotional states affect people's willingness to accept false information. According to their research, there is a direct link between higher non-epistemic emotion levels and a greater inclination to believe fake news on social networking sites and a weakened ability to discern the truth. Similarly, studies showed that having an emotional reaction of any kind (as opposed to none at all) was linked to a reduced ability to perceive the facts effectively. All emotions, with the exception of rage, were linked to a decreased ability to discern between true and false information, according to research on the relationship between feeling particular emotions and being susceptible to deception by misleading information. The study found that elevated negative emotionality was the only factor linked to a reduced capacity for truth perception. Meanwhile, a study found that people's attitudes toward and feelings of wrath and terror significantly influenced their assessments of the veracity of misleading information about vaccinations. Fear made those who were against vaccination think the fake news was more trustworthy, while anger made those who were indifferent to vaccination think it was less real. In a similar vein, someone who looked at how readers received declarations of anger and sadness in online news found that furious (but not depressed) expressions reduced the article's believability. The results of the study showed a strong relationship between trait anxiety and conspiracy theory believing. Furthermore, studies showed the critical influence anxiety played in the belief in different propositions. In the end, it was demonstrated that stronger negative feelings about vaccination, like fear, disgust, discomfort, aversion, and worry, were associated with stronger beliefs in vaccine conspiracy theories.

During the examination of the influence of unique emotions on the propagation of misinformation, a process model explaining the impact of different emotional reactions on sharing behaviors and their function in the transmission of erroneous information was constructed. The results of this study showed that people with higher levels of negative emotions

such as anger, disgust, fear, anxiety, and sadness and lower levels of positive emotions such as desire, contentment, and relaxation were more likely to prevent the spread of false information and refrain from acting in this way. On the other hand, because misleading information arouses strong emotions like fear, disgust, and surprise, it spreads more quickly, widely, and to a wider audience than the truth, according to a groundbreaking study that examined over 12,000 news pieces on Twitter. Researchers discovered that a higher number of false rumor viral cascades was associated with a higher frequency of rage in the comments to the news articles, as determined using the same Twitter dataset. It was also demonstrated that the use of emotive language associated with feelings like trust, anticipation, or rage raised the possibility that false narratives would go viral. Emotions like surprise, fear, or contempt were less likely to be used in rumors before they became well known. Another study found that people were more likely to retweet and like tweets that expressed melancholy than tweets that expressed anger, fear, or happiness. The research [38], showed that, in a political setting, the act of igniting fear and anger, as opposed to enjoyment or excitement was a significant factor that predicted people's propensity to spread false information. Finally, it has been noted that fear plays a significant role in the spread of false information. Figure 3 shows the general topology of fake news.

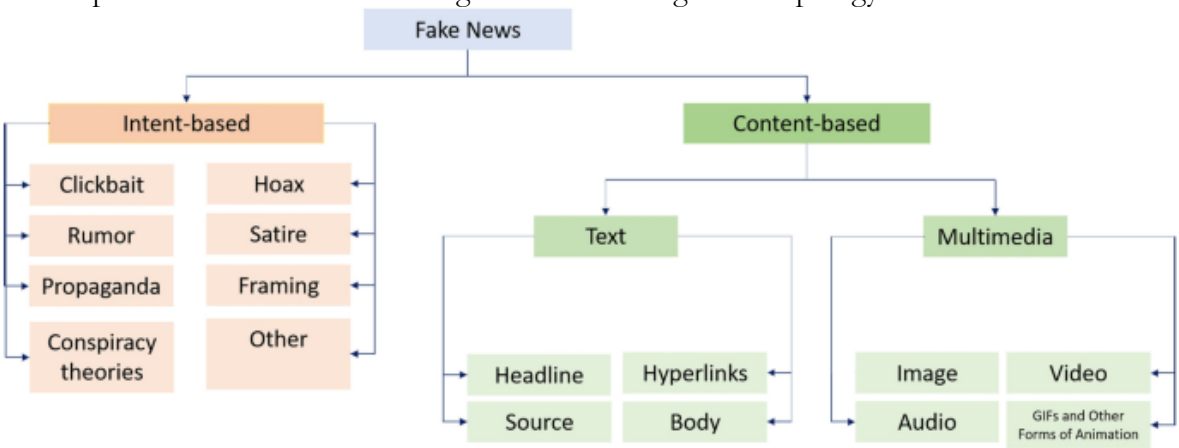

Figure 3: Misinformation or Fake News Topology [39]

Discussion:

Studies on the authenticity of information do not consider affective-based factors. From the perspective of fake news, information veracity research focuses on how a person's ability to recognize false information is influenced by cognitive characteristics such as fact checkers and analytical thinking dogmatism. In order to do this, academics have published two important theories about how people come to be sensitive to bogus news. The first is the conventional reasoning explanation, which holds that people's susceptibility to false information stems from a lack of critical thinking skills. This account makes the case that analytical reasoning, independent of whether the news confirms one's stance, predicts the capacity to identify false information. The classical reasoning approach is consistent with the dual-process theories of judgment, which imply that analytical thinking rather than intuition can frequently lead to solid judgment. The second explanation, motivated reasoning theory, maintains that people frequently use reasoning to support their biased assumptions and self-serving conclusions. The motivated reasoning account contends that people are more likely to apply analytical reasoning to problems that confirm their preexisting beliefs because of a number of motivations. As a result, people are more likely to believe phony news that confirms their beliefs. Thus far, research has validated the classical account. As such, it is clear that studies investigating people's capacity to identify fake news have not considered the idea of emotion, irrespective of which of the two theories explaining people's susceptibility to fake news, the motivated reasoning theory or the classical theory, is validated in a particular investigation.

Studies on the dissemination of information focus on the occurrence, persistence, significance, and correction of false information. Psychology research has endeavored to disentangle the cognitive processes and elements included in the reception and dissemination of false information, employing several theoretical frameworks. Among these are echo chambers, bandwagon effect, desirability bias, selective exposure, confirmation bias, and third-person perception. Additionally, "social media fatigue, social comparison, self-disclosure, fear of missing out, and online trust" have been studied by researchers as potential factors that influence why people spread false information on social media. In the framework of COVID-19, it was demonstrated that the primary motivation driving the sharing of political news on Twitter was partisan polarization, or a goal-oriented drive. A thorough analysis of competing psychological theories on the dissemination of false information looked at both goal- and accuracy-oriented incentives. It was discovered that these factors, in addition to charity, entertainment, socializing, time, information sharing, and information searching, all have a role in the spread of false information on social media. The researcher in [40], found a relationship between the rate at which fake news circulates and the propensity of individuals to tell those nearby about it, especially when the content being shared is consistent with their preexisting beliefs. Finally, a conceptual framework of consumers' interactions with false news mentioned several theories none of which included emotion, about the motivations for the spread of misleading information. Among these theories were the notions of social identity, self-determination, social comparison, and rational choice.

Almost all studies that have looked at how people's emotions affect their perception of fake news have used a correlational approach, regardless of whether they used a discrete or dimensional view. The research often fails to provide evidence to back up its assertion that people are more likely to believe and share misleading headlines because of the emotional appeal they have. An exception to this rule may be seen in the results of the second experiment, which looked at the mental processes involved in believing obviously false news. Using a dual-process paradigm, the authors conducted an experiment to change participants' emotional rather than cognitive assessment of the authenticity of news headlines. The three induction procedures used to achieve this goal were the emotion induction, the reason induction, and the control induction. By contrasting the emotion-induction condition with the control condition, their findings revealed a 12% improvement in belief. Participants' reliance on emotions rather than logic increased the likelihood that they would accept the fake news as true. The likelihood that participants would trust false news increased when they emphasized emotion over logic. The authors were thus able to prove that emotional factors play a significant role in the spread of misinformation. In addition to a decline in critical thinking, this study found that an increase in emotional dependence appears to increase vulnerability to false news. It sought to solve the problem of correlational work by having participants use two strategies for managing emotions that have been extensively studied: cognitive reapplication and emotion suppression. Attempts to reproduce the study's results were unsuccessful, therefore this conclusion should be read with caution. However, the study does provide some support for the hypothesis that repressing emotions can help disprove the existence of fake news. Consequently, the research and other works on the topic of how emotions affect our perception of false news refrain from drawing any firm conclusions about cause and effect.

Integrating neurophysiological markers of emotion into studies on disinformation has not been consistent. Emotion was subjectively evaluated in the corpus using questionnaires and self-report methodologies, except the current study that used eye-tracking and heart-rate data to measure emotion. Eighteen of the thirty-five studies included in this study dealt with online trials, thus this comes as no surprise. Obtaining trustworthy self-reports of emotional states is challenging when participants are expected to appropriately understand and explain their emotional responses through self-reporting. Consequently, there is a significant vacuum in the

research on misleading news. Another way to use emotional management to lessen felt emotions is to first identify them through self-assessment reports before analyzing beliefs. They proposed a Neuro IS method for investigating how different emotions influence people's propensity to believe and disseminate disinformation online. Electrodermal activity and facial recognition software are used in this method. Because of this, neurophysiological assessments of emotion are crucial for investigations of misinformation. Using a lexicon to count the number of words in Twitter rumor cascades was one method, while using neurophysiological markers to gauge mood was another. The authors of the study claim that people may feel negatively affected by rumors that contain terms that are often associated with good emotions. Therefore, their method had the limitation of not being able to determine the users' neurophysiological states or the elicitation of particular emotions. Using a biological measure of emotions could help shed light on the connection between showing and making people feel emotions regarding deceptive information, thereby avoiding this problem.

The "emotional architectures" of social media have been shown in multiple studies to greatly impact and enable emotional signaling, leading to the widespread expression of emotions on these sites. We concluded, however, that when it comes to understanding, characterizing, and modeling the phenomena of misinformation and disinformation, affect appears to be a significant but understudied topic. Affect is vital for people's responses to stimuli. It is worth mentioning that neither the information-diffusion nor the information-veracity studies, which concentrate on the main theories explaining why people are gullible, include affect. Rather, these studies analyze the psychological components of how bogus news is transmitted. This is due to the fact that numerous theories in psychology, such as the dual-process theory of cognition, the assimilative accommodative model of emotion, and the feelings-as-information theory, have contributed to our understanding of how emotions impact human judgment and decision-making. Since emotions are the result of biological processes that happen unconsciously and change quickly as individuals engage with emotionally charged content on social media, there is a dearth of studies examining how affect impacts the perception of fake news.

Conclusion:

This review synthesizes empirical data to construct a comprehensive understanding of how emotions influence the perception of fake news on social media. Our exploration identified seven key themes and research gaps from 20 articles, shaping our subsequent investigations. We delved into the theories used to study people's attitudes toward fake news sharing on social media, the prevalent themes in emotion-influenced perception of false news, and the lacunae in existing literature. Sorting our corpus by affective signals and analyzing emotions' influence on false news perception revealed a predominance of correlational studies, lacking causal assertions. This gap highlights the need for more research to establish causal links. Furthermore, findings often challenge conventional views of emotion, adding complexity to understanding affect's impact on fake news perception and sharing intentions.

While our corpus hinted at emotions mediating and moderating fake news beliefs and sharing behaviors, pinpointing affect's precise impact remains challenging. We propose further investigations into emotional states' links with false information perception and transmission, exploring moral and non-moral emotions' differential effects. Future studies should differentiate between dimensions of emotion and consider neurophysiological measures alongside self-reported assessments. This holistic approach can refine emotional evaluation and deepen insights into responses to misinformation. Understanding the emotional drivers of fake news perception aids in devising strategies to counter its spread. Stakeholders, including governments and IT entities, can leverage these insights to mitigate the harmful effects of misinformation. We envision these preliminary findings as a roadmap for future research in this critical domain.

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