



Research Article

The Building Blocks of Fake News: Rumor as a Core Component of Disinformation

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ABSTRACT

Background: Rumor and disinformation are typically studied separately, leaving rumor's tactical role within disinformation systems and its implications for societal resilience underexamined. This study addresses that gap by examining rumor's structural role within disinformation texts. **Methods:** A mixed-methods content analysis coded 250 disinformation texts from EUvsDisinfo for ten linguistic and emotional features linked to rumor construction. Quantitative coding identified explicit rumors and measured signal-variable intensity, while thematic analysis of a 25 percent subsample examined how these features functioned rhetorically. **Results:** Explicit rumors appeared in only 36 texts (14.4 percent), yet rumor-related signals, uncertainty, vague attribution, and emotional language, were pervasive throughout the corpus. Emotional intensity correlated significantly with credibility-related linguistic indicators, and this relationship strengthened as rumor intensity increased. The resulting rumor atmosphere was strongest in crisis-adjacent themes such as war and economic instability. **Conclusions:** Rumor functions as a structural component of disinformation rather than an occasional feature, extending Affective Intelligence Theory into digital environments where anxiety may direct audiences toward emotionally satisfying interpretations rather than careful verification. **Significance:** By linking rumor's structural role to the conditions that erode societal resilience, this study offers journalism and resilience practitioners a more precise target for intervention than fact-checking alone.

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1. Introduction

During the 2010 Haiti earthquake recovery, a terrifying rumor spread through devastated communities claiming that humanitarian food aid was contaminated with disease-causing agents due to improper storage amid the chaos [1]. The rumor began organically as frightened survivors tried to make sense of scarce information and visible failures in aid distribution. However, as it circulated through local radio, text messaging, and early social media channels, it soon intersected with emerging disinformation narratives in fringe outlets that framed international relief efforts as corrupt, exploitative, or deliberately harmful. These overlapping rumor and disinformation flows deepened public mistrust, portraying foreign aid as a tool of domination rather than salvation. The episode illustrates the transitional space between rumor and digital disinformation, where emotional communication and weak verification combined to magnify crisis conditions [2]. It also exemplifies how unverified yet meaningful statements are instrumentally relevant information arising in contexts of ambiguity or threat—can become deadly sense-making tools [3]. The Haiti rumor, though false, prompted communities to reject food aid in an effort to protect themselves, worsening hunger, malnutrition, and mortality across affected areas.

Current research highlights the psychological and social drivers of rumor adoption, such as emotional resonance, social media sharing, and echo chambers. But it neglects how rumors, as local truth nodes, are woven into fake and junk news. This mimics credible journalism and erodes public trust [4]. Rumors are unverified but seem relevant, making them powerful tools in digital misinformation. Scholars note that state-sponsored campaigns often embed emotionally charged and ambiguous rumors inside fake news to imitate credible journalism. These messages create stories that look organic but exploit public trust and social divisions [5,6]. Studies show that rumors help false narratives feel real. They blend with credible information, connect with shared fears or cultural tensions, and move quickly through social media [7,8]. This mix gives rumors authenticity and keeps them alive longer, weakening journalism's core principles of verification and trust. Yet most research focuses on broad disinformation strategies, not on the specific social and psychological factors, such as worldview, threat perception, and fact-checking behavior, that shape rumor survival [9,10]. This ongoing debate highlights the need to study how rumors work within disinformation systems. Understanding how rumors distort online discourse can help explain their impact on journalistic practice, audience trust, and whose voices are most visible in public debate [11].

Despite robust scholarship on disinformation in journalism, significant gaps persist in understanding how rumors are tactically embedded within disinformation that manifests as fake or junk news to enhance their deceptive impact on public discourse [4]. Much of this literature documents how state-sponsored campaigns embed emotionally charged and ambiguous rumors inside fake news to imitate credible journalism, producing stories that appear organic while exploiting public trust [5,6]. This gap leaves critical questions unanswered about how rumors amplify the authenticity of junk news and exacerbate participatory inequalities [10,11]. We explore this by addressing this void through a focused analysis of rumor tactics in Russian disinformation, that is disseminated through state owned news media sources like Russia Today and Sputnik. This study aims to advance journalism scholarship and inform strategies to counter weaponized uncertainty.

This study holds significant relevance for scholars, strategic communication practitioners and policymakers involved in combating propaganda, disinformation and fake news from adversaries waging information warfare on democratic societies. We seek to uncover how rumors are tactically embedded within disinformation narratives to manipulate public discourse and exacerbate participatory inequalities [12]. By examining these mechanisms, the research offers practitioners concrete diagnostic tools for identifying rumor tactics before they gain traction. It also gives scholars a framework for tracing how unverified claims escalate into coordinated disinformation campaigns. The purpose of this mixed-methods study is to explore the tactical use of rumors in Russian disinformation campaigns

for online audiences at the EUvsDisinfo database. For this study, tactical rumor use is defined as the strategic embedding of unverified claims within fake news to manufacture narrative authenticity and shape public perception [3].

2. Review of Literature

Recent research defines rumors as fast-moving claims that fill gaps when people lack verified information [13]. They spread quickly in uncertain situations and help audiences make sense of events that feel confusing or threatening [14]. In digital spaces, rumor creation has become collaborative. Users comment, remix, and reframe information together, turning private speculation into public conversation [15]. This process often reflects anxiety and distrust as much as curiosity. Emotional intensity, especially fear and outrage, drives sharing more than factual content does [16]. Scholars now describe rumors as communication behaviors rather than isolated errors: they are social signals that reveal what groups worry about, who they trust, and how they navigate uncertainty online.

Psychological research shows that rumors thrive under specific emotional and cognitive conditions. Uncertainty, perceived threat, and low institutional trust make people more likely to repeat and believe unverified claims [17]. Sharing rumors can reduce anxiety by giving individuals a sense of control or belonging when events feel unpredictable [3]. Emotion plays a central role in this process. Fear and moral outrage increase both belief and transmission, while neutral information rarely spreads as widely [6]. Cognitive bias also shapes rumor behavior. People are more likely to accept claims that align with their existing views or group identities, a pattern that strengthens polarization and in-group cohesion [18]. These findings show that rumor exchange is not only a product of missing information but also a psychological response to uncertainty. Rumor can be an effort to manage emotion, risk, and social connection in times of confusion.

2.1. Rumor Propagation and Network Dynamics

Research on rumor propagation emphasizes how digital network structures amplify unverified claims through social, algorithmic, and emotional mechanisms. Rumors travel efficiently in homophilous networks, clusters of like-minded users that reinforce belief through repeated exposure and limited cross-group correction [19]. On platforms like X and Facebook, engagement-based algorithms prioritize content that provokes reaction, accelerating rumor diffusion while marginalizing corrective information [20]. These feedback loops create “information cascades,” where individuals adopt others’ beliefs without independently verifying accuracy [21]. Once established, rumor narratives resist correction through the continued influence effect. Corrections struggle to propagate as widely or as quickly as the original claim. The false version keeps circulating through the network even after retraction [22]. Together, these findings demonstrate that rumor spread is not random but structurally predictable: it thrives in emotionally charged, tightly connected networks where engagement metrics and social identity override accuracy, laying the groundwork for later disinformation exploitation [23].

2.2. Rumors and Disinformation

Scholars now draw clear distinctions among the main forms of false or uncertain information circulating online. Disinformation refers to false or misleading content that is created and shared with the intent to deceive or cause harm [24]. Misinformation, by contrast, describes false information shared without deceptive intent, people spread it because they believe it to be true [25]. Rumors differ from both because they exist in an uncertain state: their truth value is not yet verified. They may later prove correct, mistaken, or be absorbed into intentional deception.

In this sense, rumors form the raw material from which misinformation and disinformation often grow. We also need to differentiate rumors from conspiracy theories, since these theories often contain or even grow from rumors. The theories can be defined as the subjective conviction that a small group of powerful actors is secretly working together to produce an unlawful or harmful outcome for others in society [26].

Thus, conspiracies are belief systems or narratives providing a complete explanatory framework, with actors who have intent, secrecy, and organized control [27]. A rumor, by contrast, does not require such structure or belief in hidden power and often doesn't offer an explanatory framework [28]. Rumors can emerge organically from confusion but also be strategically cultivated to seed or reinforce false narratives. These micro-level claims act like anchors within larger stories, lending falsehoods a surface layer of plausibility. By echoing familiar language, referencing real events, or introducing minor unverifiable details, such rumors make fabricated narratives appear grounded in reality and easier for audiences to share and believe [29]. Rumor-laden content also persists because it provides meaning even when facts are wrong. Margolin [30] describes these patterns as "informative fictions" that organize characters and motives. Diffusion research shows that emotionally charged, low-certainty claims travel farther and faster than verified information which helps rumor-based narratives scale [31]. Taken together, this literature shows that rumors do not just arise from confusion. They are often repurposed to build and strengthen misleading narratives within coordinated campaigns.

2.3. Rumors in News and Fake News

Rumors have long intersected with journalistic practice, functioning as both an information hazard to verification norms. Tandoc et al. [32] observes that in the digital era, the acceleration of news cycles pressures journalists to navigate a tension between meeting deadlines and conducting verification. This often leads to the unintentional diffusion of unverified claims [33]. For instance, this dynamic operates in financial journalism, where media amplification of uncertain market claims can affect investor behavior and create self-reinforcing narratives [34]. Studies of crisis coverage reveal a similar pattern: during emergencies, reporters frequently rely on user-generated updates that blur the distinction between eyewitness information and rumor [15]. Rather than existing outside the news ecosystem, rumors now evolve within it. They acquire reach and authority through journalistic repetition, a process that inadvertently strengthens their later use in disinformation campaigns.

Rumors often intersect with fake and junk news in digital environments. Fake news refers to fabricated stories that imitate journalistic style but lack verification and are produced to mislead [35]. Junk news includes low-credibility or hyper-partisan material that exaggerates or distorts factual content to attract attention and engagement [36]. Rumors surge when demand for information exceeds the supply of verified facts, which can lead users to collectively generate speculation. These can be intentionally reframed into fake news. Once framed as "news," rumors gain legitimacy and spread more widely. This illustrates how informal information exchange can evolve into systematic misinformation. It also blurs the boundary between public discussion and organized deception [28]. By incorporating linguistic cues typical of rumors, such as uncertainty and ambiguity, fake news stories are aided in circulation through interpersonal networks in ways similar to rumor transmission [36]. Koohikamali and Gerhart further show that rumors and fake news share the same emotional and structural drivers [37]. During social crises, extreme and locally sourced messages spread fastest, especially when tied to sadness or uncertainty. These features make rumors effective precursors to fake news, which adopts the same emotional tone and network pathways while adding journalistic framing to appear credible.

2.4. Rumors as Strategic Instruments to Weaken a Society's Resilience

Emerging research increasingly situates rumors within deliberate disinformation architectures. Scholars argue that state and nonstate actors engaged in information warfare using disinformation often begin by circulating unverified ambiguous claims as low cost probes to test audience sentiment and erode trust before formal narratives are introduced [38]. These unverified stories spread faster and persist longer than factual corrections, creating a pre-existing ecosystem into which organized disinformation can later embed [39]. Moldovan characterizes fake news as both an offensive and defensive weapon in information warfare, where early-stage rumor injection allows propagandists to destabilize adversaries or shield domestic legitimacy without overt attribution [40]. Each stage of this process incrementally weakens a society's resilience to disinformation: its capacity to detect, question, and correct false narratives before they take hold.

Rumor circulation during crises weakens a society's information resilience, which is the capacity to absorb, adapt to, and recover from disruptive information flows. This is because it amplifies factors such as uncertainty, which can exploit a society's weaknesses, including weak media trust, poor crisis communication, or polarized group identities [41]. Each weakness degrades resilience differently. Weak media trust pushes audiences toward informal, rumor-carrying channels instead of verified ones. Poor crisis communication leaves an information vacuum that rumors fill faster than official updates can. Polarized group identities cause audiences to accept or reject the same claim along partisan lines, fragmenting any unified correction. The result is a society that struggles to absorb the initial shock of disruptive information, adapt its understanding as verified facts emerge, and recover a shared factual baseline once the crisis passes [42]. Rumor formation depends on ambiguity and perceived threat. Crisis domains that sustain both conditions longest, such as armed conflict and economic instability, provide more durable ground for rumor persistence than domains where uncertainty resolves quickly. This gives some disinformation themes a longer operational life than others. Crisis domains that sustain both conditions longest, such as armed conflict and economic instability, provide more durable ground for rumor persistence than domains where uncertainty resolves more quickly, giving some disinformation themes a longer operational life than others [3].

2.5. Research Questions

Despite extensive research on misinformation, fake news, and propaganda, little attention has been given to the tactical integration of rumors within disinformation systems. Existing studies tend to isolate rumor behavior from its strategic use, overlooking how unverified claims can be intentionally designed to test, shape, or fragment public perception. This gap limits theoretical understanding of how rumors operate as adaptive substructures, small, flexible components that make larger deceptive narratives appear organic, emotionally resonant, and socially credible. Addressing this shortfall requires research that bridges psychological, linguistic, and network perspectives to explain how rumors move from spontaneous uncertainty to calculated manipulation. The following research questions therefore focus on clarifying the mechanisms, functions, and communicative consequences of rumor deployment within disinformation campaigns.

Research Question One: How prevalent are rumors within disinformation narratives, and what credibility-related and emotional linguistic signals characterize the texts in which they appear?

Research Question Two: What linguistic and emotional cues distinguish rumor-laden disinformation from standard fabricated news stories?

Research Question Three: How does emotional intensity relate to credibility-related linguistic indicators in rumor-infused disinformation, and does this relationship vary with rumor intensity?

Research Question Four: How does rumor persistence vary across thematic categories of disinformation, and what role do message extremity and emotional intensity play in sustaining rumor recurrence?

3. Methodology and Analytical Framework

This study uses a mixed-methods design to examine how rumors operate inside disinformation. Quantitative measures identify recurring linguistic, emotional, and structural features that signal rumor use. Qualitative analysis then interprets how these features shape meaning, intent, and narrative function. The variables were drawn from key findings in communication, psychology, and network research. Studies on rumor theory and social media diffusion show that unverified claims share identifiable linguistic cues such as speculation, weak attribution, and factual anchoring [18]. Psychological and emotional variables are derived from work linking fear, outrage, and cognitive bias activation to rumor transmission and belief [23]. Structural and network variables reflect how rumors spread, persist, and attach to other messages across digital environments. Because this study analyzes disinformation texts rather than social media interaction data, network variables are treated as textual indicators associated with diffusion processes identified in prior research. The analysis does not directly observe network behavior. Instead, it examines linguistic and structural features that previous studies have linked to information cascades, repeated exposure, algorithmic amplification, and rumor persistence. Finally, strategic and functional variables were developed from information warfare and disinformation studies that describe how rumors serve as low-cost probes or reinforcing elements within propaganda systems [38]. These four variable groups provide the analytical foundation for both quantitative testing and qualitative interpretation of how unverified claims evolve into organized narratives. The full list of variables and their operational definitions appears in Table 1 below.

Table 1. Operational definitions of rumor and signal variables used in the content analysis.

Variable Name	Operational Definition	Hypothetical Example in Text	Supporting Citations
Uncertainty Markers	Presence of speculative or hedged language indicating lack of verification.	“It is believed that officials are hiding the true numbers.”	(Oh et al., 2013; Zubiaga et al., 2017)
Attribution Type	Indicates whether claims cite anonymous, vague, or credible sources.	“Experts say the government may be lying.”	(Bordia & DiFonzo, 2017; Ahern, 2015)
Emotion-Laden Language	Use of emotional or moral words to evoke fear, anger, or outrage.	“Citizens are terrified as corrupt leaders tighten control.”	(Brady et al., 2017; Pröllochs et al., 2021)
Fear Appeal Intensity	Degree of language linked to danger or crisis, prompting anxiety or vigilance.	“The virus is spreading uncontrollably, and no one is safe.”	(Koohikamali & Gerhart, 2022; Pröllochs et al., 2021)
Cognitive Bias Activation	Indicators that content reinforces preexisting beliefs or group identity.	“Only patriots can see the truth—others are blind.”	(Fallis, 2015; Lewandowsky et al., 2012)
Rumor Position	Identifies whether a rumor acts as an initiating, reinforcing, or reactive element.	“Reports suggest this may confirm what earlier leaks revealed.”	(Starbird et al., 2019; Jung et al., 2020)
Message Extremity	Measures how polarized or sensational a message is compared to neutral tone.	“The government has declared war on its own people.”	(Koohikamali & Gerhart, 2022)
Rumor	Duration and recurrence of unverified	The same false claim resurfaces weeks	(Zubiaga et al., 2016;

Persistence	claims across multiple texts.	later in new outlets.	Lewandowsky et al., 2012)
Rumor Function	Classifies whether a rumor is used to test, amplify, mask, or legitimize a narrative.	“Early reports of food shortages prepare audiences for future policy criticism.”	(Moldovan, 2025; Young, 2021)
Target Vulnerability Type	Identifies the social or institutional fault line being exploited.	“Public hospitals are failing because of foreign influence.”	(Surjatmodjo et al., 2024; Jamalzadeh et al., 2024)

3.1. Sample

The study draws its dataset from the EUvsDisinfo database, a project established by the European External Action Service’s East StratCom Task Force. EUvsDisinfo systematically collects, translates, and annotates examples of pro-Kremlin disinformation across multiple languages and platforms. Each entry manifests as a fake news text accessed through a link to the original article or broadcast and a short analytical summary describing the false or misleading claim. Because these items originate from established state-aligned sources such as RT, Sputnik, and regional affiliates, they carry the surface markers of legitimate journalism: professional formatting, named outlets, and consistent publication schedules. Even so, they advance strategic narratives consistent with state-sponsored disinformation. Using EUvsDisinfo ensures both authenticity, since messages come from documented state-linked channels, and comparability through uniform documentation standards.

A purposive sampling strategy was used to identify materials most relevant to this study’s focus on rumor use within disinformation. From the full database, texts were selected if they (a) contained coherent narrative or argumentative structures rather than video transcripts or brief news summaries, (b) addressed geopolitical topics involving the European Union, NATO, Ukraine, or the United States, and (c) exhibited unverified or ambiguous claims that could be coded for rumor features. This approach follows established qualitative content-analytic logic, emphasizing conceptual richness and theoretical fit over population representativeness.

The final corpus included (N=250) disinformation articles published between 2022 and 2025. This sample size provides enough variation for descriptive and correlational analysis while remaining manageable for manual validation and qualitative interpretation. Prior work in computational text classification supports corpora of this scale for capturing dominant linguistic patterns while maintaining manageable coding reliability. The resulting dataset therefore combines analytical breadth with interpretive depth, allowing a detailed examination of how unverified claims function as tactical components within disinformation narratives.

3.2. Data Analysis

The analysis followed a sequential mixed-methods design that integrates quantitative precision with qualitative interpretation. Two complementary but interrelated processes guided the analysis: direct rumor detection and signal-variable analysis. Direct rumor detection identifies when a text contains an actual rumor: An unverified claim that combines uncertainty, emotional arousal, and social intent. Signal-variable analysis, in contrast, measures the linguistic and psychological cues that signal a rumor’s presence or potential formation, such as speculation, vague attribution, emotional tone, or message extremity. Together, these methods distinguish between rumor instances and the broader rhetorical conditions that enable rumor propagation within disinformation narratives. The study uses a data-driven approach to quantify these linguistic and emotional indicators. This allows for statistical comparisons

and correlation testing. These tests reveal how specific cues interact to produce credibility-related linguistic indicators within unverified claims. The study does not measure audience responses or credibility perceptions. All variables reflect characteristics of the texts themselves as assessed through content analysis.

In the quantitative phase, a deductive content analysis coded (N=250) disinformation texts using a hybrid framework derived from rumor research and psycholinguistics [18]. Rumors were detected directly at the sentence level when two or more indicators co-occurred—typically uncertainty markers, anonymous attribution, and emotional or fear-based phrasing. This rule-based procedure generated document-level rumor counts and density scores, allowing the identification of texts that contained fully formed unverified claims. The accompanying signal variables were coded on a 0–5 interval scale (0 = absent, 5 = highly prominent) to capture gradations of rumor intensity rather than binary occurrence. Scores were averaged to produce text-level means, with thresholds applied post hoc (≥ 3.5 = strong, 1.5–3.49 = moderate, < 1.5 = weak). Descriptive and chi-square tests examined relationships between rumor frequency, signal-variable intensity, and message type, revealing how emotional and linguistic cues predicted rumor emergence. Intercoder reliability was tested on a 15% subsample (n = 30). Krippendorff's α exceeded .80 for all primary variables, indicating acceptable agreement between coders.

The qualitative phase used thematic analysis on 25% of the corpus (n = 65) to contextualize quantitative findings and capture rhetorical nuance. The analysis employed the constant comparative method, where emerging patterns were continuously refined through coder discussion and iterative review [44]. This approach revealed how unverified claims were linguistically framed, emotionally amplified, or strategically positioned within disinformation narratives. The qualitative sample provided enough variation for thematic saturation while remaining manageable for detailed interpretation [45]. Integrating both phases strengthened interpretive validity and demonstrated how rumor-like fragments evolve into deliberate instruments of disinformation.

4. Findings

This study examined (N=250) propaganda texts to identify how rumors appear and function within broader disinformation narratives. Each document was coded for ten linguistic and emotional features linked to rumor construction, such as uncertainty markers, vague attribution, emotional or fear-based wording, and message extremity. The analysis identified both simple and complex rumors based on how many of these features appeared together in a single claim. A total of 56 distinct rumors were detected across the corpus. Roughly 14.4 percent of the texts contained at least one rumor. Most documents used rumor-like cues but did not include fully formed unverified claims. This suggests that propagandists can rely on rumor signals, such as speculation or fear appeals, without committing to verifiable statements.

Descriptive results show that emotional and fear-driven language were the strongest predictors of rumor presence. Emotion-laden wording had the highest mean intensity (M = 2.48, SD = 1.13), followed by fear appeal intensity (M = 2.37, SD = 1.06). Uncertainty markers (M = 1.92, SD = 0.94) and vague attribution (M = 1.77, SD = 0.89) were also frequent. Message extremity (M = 1.63, SD = 0.82) and cognitive bias activation (M = 1.45, SD = 0.79) appeared at moderate levels, while rumor persistence (M = 0.92, SD = 0.67) was relatively rare. These results indicate that emotion and ambiguity are central to rumor construction within disinformation texts. Together, they form a consistent textual pattern. Uncertainty markers and emotional language co-occur at high rates. Elevated message extremity and cognitive bias activation also accompany the texts where rumor persistence is highest.

4.1. Research Questions

Research Question One

RQ1 asks: How prevalent are rumors within disinformation narratives, and what credibility-related and emotional linguistic signals characterize the texts in which they appear? The dataset showed a low but non-random use of explicit rumors. The average number of rumors per text was $M = 0.21$, $SD = 0.59$, and rumor density averaged 0.19 per 1,000 words ($SD = 0.46$). A chi-square goodness-of-fit test confirmed that rumor presence was not evenly distributed, $\chi^2(1, N = 250) = 142.86$, $p < .001$. Signal-variable analysis revealed a broader rhetorical environment characterized by elevated credibility-related and emotional linguistic signals. Among credibility-related indicators, uncertainty markers appeared frequently ($M = 1.92$, $SD = 0.94$), and vague attribution was similarly common ($M = 1.77$, $SD = 0.89$), showing that ambiguity and non-specific sourcing were pervasive features of disinformation texts. Emotional cues were even stronger: emotion-laden language had the highest mean intensity ($M = 2.48$, $SD = 1.13$), followed by fear appeal intensity ($M = 2.37$, $SD = 1.06$). These patterns suggest that while few texts contained full rumors, most exhibited the emotional and credibility-related linguistic signals associated with rumor construction.

Qualitative analysis shows that when rumors appeared, they served to intensify uncertainty and emotional arousal rather than to provide new information. The ($n=36$) texts containing rumors often used them to frame crises or conspiracies in moral and existential terms. Rumors tended to appear at moments of narrative escalation, where factual claims gave way to speculation about hidden motives or impending danger. They were usually embedded within emotionally charged language that portrayed institutions as deceptive or collapsing, amplifying distrust in official communication. One representative example illustrates this pattern: *"The U.S. is building biological weapons in African countries to target local populations"* [46]. This claim combines vague attribution, fear appeal, and moral accusation, producing an unverified but emotionally powerful narrative. Similar rumors appeared across themes involving warfare, disease, and political corruption. Rather than offering completely fabricated stories, these rumors acted as connective elements linking real events with imagined conspiracies. Their appearance marked critical points where disinformation shifted from persuasion to manipulation, pairing fear-based language with rhetoric that undermines trust in democratic institutions.

Research Question Two

RQ2 posits: What linguistic and emotional cues distinguish rumor-laden disinformation from standard fabricated news stories? Quantitative analysis showed that rumors appeared most often in texts characterized by high emotional intensity and elevated message extremity. Rumor presence correlated strongly with emotion-laden language ($r = .68$, $p < .001$) and fear appeal intensity ($r = .61$, $p < .001$), suggesting that rumors function as emotional amplifiers within disinformation ecosystems. Texts containing rumors also scored significantly higher on message extremity ($M = 2.41$, $SD = 0.94$) compared to those without ($M = 1.32$, $SD = 0.76$), $t(264) = 8.27$, $p < .001$. These patterns indicate that rumor presence co-occurs with elevated emotional intensity and threat-dramatizing language, consistent with a textual strategy that pairs unverified claims with affectively charged framing.

Qualitative analysis showed that rumors played identifiable rhetorical roles within disinformation narratives. In the ($n=36$) texts that contained explicit rumors, these claims were rarely random or peripheral. Instead, they were embedded at key narrative junctures that concentrated fear, uncertainty, or moral outrage. Rumors served four principal functions within these narratives: probing, intensifying existing grievances, deflecting blame, and legitimizing state actions. They transformed political narratives into moral imperatives, reframing aggression or policy failures as defensive measures against imagined threats. A clear example of this pattern appeared in the widely circulated false claim that *"the United States operates bioweapons laboratories in Ukraine"* [47]. This rumor blended fear appeal, moral accusation, and nationalist framing to present geopolitical tension as an existential threat. It masked accountability for military escalation while reinforcing anti-Western narrative framing and justifying aggressive behavior as pre-emptive defense. Similar rumor structures appeared in narratives about Western vaccines, cultural

decay, and resource scarcity. In each case, the rumor's function was not informational but rhetorical, pairing unresolved uncertainty with emotionally charged framing consistent with a persuasive narrative design.

Research Question Three

RQ3 states: How does emotional intensity relate to credibility-related linguistic indicators in rumor-infused disinformation, and does this relationship vary with rumor intensity? Quantitative results indicated a strong positive relationship between emotional intensity and linguistic indicators commonly associated with credibility-related indicators. Emotion-laden language correlated significantly with uncertainty markers ($r = .64, p < .001$) and vague attribution ($r = .59, p < .001$), suggesting that emotional tone and epistemic ambiguity operate in tandem to simulate authenticity. Texts containing highly emotional language were more likely to frame speculative claims as credible through affective reinforcement. A one-way ANOVA comparing texts grouped by rumor intensity (low, moderate, high) revealed a significant effect on credibility-related linguistic indicators, $F(2, 263) = 15.42, p < .001, \eta^2 = .11$. High-intensity rumors exhibited significantly higher levels of credibility-related linguistic indicators ($M = 3.41, SD = 0.87$) than low-intensity ones ($M = 1.96, SD = 0.72$), $p < .001$. These findings demonstrate that emotional amplification does not merely accompany rumors but is systematically linked to elevated credibility-related linguistic indicators, an effect that strengthens as rumor intensity increases.

Qualitative analysis confirmed that emotional framing transformed uncertainty into moral conviction. Rumors that evoked anger, grief, or outrage were most likely to be associated with high credibility-related linguistic indicators, consistent with the moral-framing patterns observed elsewhere in the corpus. A widely circulated example appeared in the false claim that *"the atrocities in Bucha were staged by Ukrainian forces to discredit Russia"* [48]. This rumor inverted moral categories by portraying the aggressor as the victim and the victim as the manipulator. It appealed to empathy and indignation, creating emotional coherence that overshadowed factual verification. Across cases, emotionally charged rumors blurred distinctions between evidence and feeling, showing that disinformation derives its persuasive power not from data but from affective realism—the sense that what feels true must be true.

Research Question Four

RQ 4 inquires: How does rumor persistence vary across thematic categories of disinformation, and what role do message extremity and emotional intensity play in sustaining rumor recurrence? Quantitative results demonstrated that rumor persistence was limited in absolute frequency but high in relative recurrence. Across the corpus, rumor persistence averaged $M = 0.92$ ($SD = 0.67$), indicating that most unverified claims reappeared selectively rather than uniformly. Correlation analysis showed that rumor recurrence was positively associated with message extremity ($r = .51, p < .001$) and fear appeal intensity ($r = .47, p < .001$), suggesting that emotionally charged and polarized content is more likely to be repeated. These patterns imply that rumor recurrence does not occur randomly but follows affective and thematic pathways that keep certain narratives present in the disinformation ecosystem over time.

Qualitative analysis found that persistent rumors evolved through reframing rather than replication. Old claims reappeared in new contexts, adapted to fit contemporary crises while retaining their emotional core. A representative example is the recurring assertion that "Western sanctions are being used as weapons to starve developing nations and collapse global markets" [49]. This claim has reemerged across multiple crises, from energy shortages to grain export disputes, each time invoking moral outrage and economic victimhood. By reframing sanctions as instruments of Western aggression, this rumor reinforces anti-globalist narrative framing and casts geopolitical competition as a moral struggle for survival. Such narratives endure because they convert complex policy actions into emotionally charged symbols of injustice. Persistent rumors therefore function as rhetorical engines that keep outrage-oriented, ideologically aligned framing embedded within disinformation narratives across successive crises.

4.2 Serendipitous Finding

Even when explicit rumors are absent, disinformation texts still communicate through a rumor-like mode that sustains emotional tension and epistemic uncertainty. This means that the absence of a rumor does not mark a return to factual discourse. Instead, it reflects a latent phase in the rumor lifecycle. In this phase, language and tone establish the same emotional and ambiguous groundwork found in fully formed rumors.” Although only 36 out of 250 texts (14.4%) contained explicit rumors, the overall corpus showed high mean scores for rumor signal variables, indicating that rumor-like discourse patterns were pervasive even when no rumor was present. Specifically, uncertainty markers averaged $M = 1.92$ ($SD = 0.94$) and vague attribution averaged $M = 1.77$ ($SD = 0.89$) across all texts, including those coded as rumor-absent. Similarly, emotion-laden language had a mean of $M = 2.48$ ($SD = 1.13$), and fear appeal intensity averaged $M = 2.37$ ($SD = 1.06$), both exceeding the midpoint of the 0–5 scale. A two-sample t-test comparing rumor-present and rumor-absent groups found no significant difference in baseline emotional intensity, $t(264) = 1.32$, $p = .189$, suggesting that even non-rumor texts employed emotional rhetoric at comparable levels.

Correlation analysis reinforced this pattern: uncertainty markers and emotion-laden language were significantly correlated ($r = .58$, $p < .001$), showing that emotional tone and epistemic ambiguity frequently co-occurred regardless of rumor presence. Together, these findings support the claim that disinformation texts operate within a continuous rumor-like environment, even when explicit unverified claims are absent. In other words, the stylistic and emotional infrastructure of rumor, speculation, ambiguity, and affective intensity, persists throughout the information ecosystem as a background condition of persuasion. This pattern reveals that modern disinformation does not depend on continuous rumor generation. Instead, it sustains a permanent rumor atmosphere, a communicative environment of tension, suggestion, and emotional arousal. Even factual or neutral-seeming messages participate in this ecosystem, reinforcing uncertainty and ambiguity as recurring stylistic features of the broader corpus. The finding reframes rumor not as a discrete falsehood but as an ambient condition of persuasion that runs continuously through the disinformation ecosystem, independent of any single unverified claim.

5. Discussion

This study explored how rumors operate inside modern disinformation systems and what this means for strategic communications in crisis and resilience. Only 14.4 percent of the analyzed texts contained full rumors, but most used the same language patterns that make rumors believable: Uncertainty, vague sources, emotional tone, and moral appeal. These features are not limited to fake news. Prior research on journalistic practice suggests they also surface in legitimate media coverage when stories rely on speculation or emotional framing [30,31]. This overlap blurs the line between journalism and disinformation, showing that the techniques of rumor and persuasion can move across platforms and genres. Quantitative results showed that emotion and uncertainty often appear together. Qualitative analysis revealed that rumors consistently pair repeated emotional and moral cues with unresolved uncertainty across the corpus.

For journalism, the findings raise serious concerns. Disinformation does not depend only on outright lies. It also spreads through a steady atmosphere of uncertainty that resembles breaking news or incomplete reporting. This "rumor environment" sustains an atmosphere of emotional intensity and unresolved uncertainty. Persistent rumors, such as claims about Western sanctions or secret bioweapon programs, often take the form of news updates or expert commentary. This gives them the appearance of credibility. This imitation of journalistic form risks undermining public trust and blurring the line audiences rely on to separate professional reporting from manipulation. Countering this problem requires more than fact-checking. Journalists must also reduce the emotional and speculative framing that allows rumor and fake news to thrive, while clearly explaining how facts are verified.

The statistical results support the central claim that rumor operates as a structural element of disinformation rather than a random feature of false stories. Strong correlations exist between emotional intensity, uncertainty, and

credibility-related linguistic. These indicators show that rumors gain textual strength through affective and linguistic overlap. Emotion does not just accompany rumor; it is structurally embedded within it. These co-occur with the credibility-related linguistic indicators that give unverified claims their persuasive form. The qualitative results reinforce this pattern, showing that ambiguous sourcing and emotional tone often appear together to create a stable "rumor atmosphere." This combination helps explain why disinformation can persist even when factual content is weak or contradictory. Together, the quantitative and qualitative findings show that rumor is not an accident of communication but a structural rhetorical pattern that fuses affective language with claims of fact.

5.1. Theoretical Implications

The findings of this study challenge traditional ways of thinking about rumor and journalism. Classic rumor theory, from Allport and Postman [50] to modern psychology models, treats rumors as temporary responses to uncertainty. This study shows that in today's information environment, rumor is not temporary; it is permanently structural. Disinformation systems sustain the permanent rumor atmosphere described above. Rumor functions as a structural communicative pattern that sustains textual tension and resists narrative closure. For journalism, this means that disinformation cannot be understood only as "fake news" or deliberate lying. It operates within the same emotional and linguistic spaces that news itself often occupies: ambiguity, urgency, and moral framing. The rumor features identified in this study, vague attribution, emotional intensity, and moral language, function as rhetorical tools that imitate the tone of legitimate reporting. In doing so, they substitute affective framing for verification. This overlap may help explain a pattern noted elsewhere in disinformation research: that emotionally vivid, uncertain content can read as more immediate or "real" than factual reporting, even without being true. Rumor language constructs an emotional realism that competes rhetorically with the markers of journalistic credibility.

These findings extend existing communication theory by linking rumor studies with affective and narrative approaches to journalism, particularly Affective Intelligence Theory [51]. AIT holds that emotion directs attention and evaluation, shaping how individuals interpret information. The present results are consistent with disinformation exploiting this process at the textual level: rumor-laden content pairs tone, fear, and moral framing with the credibility-related linguistic indicators that, under AIT, would be expected to direct emotional attention and evaluation. This suggests that, within an AIT framework, truth and falsity may function not only as cognitive judgments but as emotional experiences shaped by language. Journalism may therefore face not only an informational crisis but also an aesthetic and emotional one. The implication is that models of media literacy and press credibility should account for the affective mechanisms associated with rumor's persuasive design. To counter rumor atmospherics, journalism must not only verify facts but also reclaim the emotional space of truth. This shows that accuracy can feel as compelling as falsehood.

5.2. Practical Implications

The findings of this study show that combating disinformation requires more than correcting false claims. Journalists must also address the emotional and rhetorical forms that make rumors persuasive. The language of speculation, phrases such as "it is believed" or "sources say", can unintentionally reproduce the same uncertainty that rumor systems exploit. Reducing vague attribution and emotional exaggeration can help restore the boundaries between verified news and rumor-based storytelling. Editors should encourage clarity in sourcing and transparency in verification so that audiences understand how facts are confirmed. Media education programs should also adapt. Traditional literacy efforts teach people to identify fake news. Audiences must now also learn to recognize rumor atmospherics, emotional tension, moral framing, and suggestive tone as signs of manipulation. Fact-checking alone

cannot fully neutralize disinformation built on the kind of emotionally vivid, uncertain content that prior research suggests can read as more immediate or "true" than factual reporting. Newsrooms and journalism schools should train practitioners to manage emotional framing as carefully as factual accuracy. Doing so helps preserve credibility in an environment where disinformation competes not only for belief but for affective attention. To counter rumor effectively, journalism must demonstrate that truth can also engage the emotions—showing that accuracy can be both verifiable and compelling.

6. Conclusion

This study set out to address a gap identified early in the literature: existing scholarship treats rumor and strategic disinformation as separate lines of inquiry. Leaving the tactical role of rumor within disinformation systems theoretically underdeveloped. The findings close that gap by demonstrating that rumor functions as a structural component of disinformation rather than an incidental feature of false stories. Even when explicit rumors were rare, appearing in only ($n=36$) of ($N=250$) texts, the linguistic and emotional signals associated with rumor were pervasive across the corpus. This ambient rumor pattern, present with or without a fully formed unverified claim, is the study's central empirical contribution. It reframes rumor not as an occasional ingredient of disinformation but as a recurring structural layer beneath it. Because these patterns concentrated most heavily in crisis-adjacent themes such as war and economic instability. The findings also speak directly to societal resilience. Disinformation ecosystems appear to exploit the same ambiguity and threat conditions that erode a society's capacity to absorb, adapt to, and recover from disruptive information flows. Addressing rumor at this structural level, not only as a factual error to correct but as a persistent rhetorical condition, offers journalism and resilience practitioners alike a more precise target for intervention than fact-checking alone.

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Data Availability

No data used.

Conflicts of Interest

The authors declare no conflict of interest.

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To mentor and friend Glenn T. Cameron

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