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“JANE SENT ME THIS ARTICLE, SO IT MUST BE TRUE!” – HOW TIE STRENGTH AND EMOTIONAL TONE INFLUENCE INFORMATION BEHAVIOR

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Presenter Information

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Emergent Research Forum (ERF) Paper

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Abstract

Fake news are a threat of the information age, yet many factors that determine their spread, such as emotional tone and tie strength, remain under-researched. Responding to calls for research, we developed an experimental study that explains the impact of emotional tone and tie strength in the context of instant messaging. We hypothesize effects on the willingness to fact-check and intention to share, mediated by sender credibility and news believability. Our results will contribute to the academic literature on various levels: we consider the emotional and relational dimensions of fake news sharing. Furthermore, we provide a multidimensional understanding of the emotionality of strong-tie contacts sharing fake news in a seemingly private and safe environment. For policymakers, we provide insights that help detect fake news, and we provide individuals with persuasion knowledge to self-protect against fake news.

Keywords

Fake News, Tie Strength, Emotions, Fact-checking, Intention to Share, Instant Messaging.

Introduction

The veracity of news has been under scrutiny for quite some time, as the spread of fake news is an enduring problem of the internet (Kim & Dennis, 2019). The term fake news refers to “news articles that are intentionally and verifiably false and could mislead readers” (Allcott & Gentzkow, 2017, p. 213). Despite 84% of U.S. citizens being confident that they can detect fake news, they continue to spread them (Barthel et al., 2016; Moravec et al., 2019). This indicates that social media and instant messaging users insufficiently engage in fact-checking. To enable appropriate interventions, it is crucial to identify the factors influencing users’ fact-checking and sharing behavior in relation to fake news.

In the Information Systems (IS) research domain, there is an increasing trend to study discrete emotions in the context of fake news on social media (Horner et al., 2021). However, the literature on negative emotions such as outrage in response to fake news is inconclusive. For example, research suggests a negative impact of anger-expressing fake news on believability (Deng & Chau, 2021). In contrast, earlier

studies found that negative information is more likely to be spread with greater impact than positive information (e.g., Stieglitz & Dang-Xuan, 2013). Besides emotions, the impact of fake news is compounded by social ties and referrals as approximately 62% of adults receive their news from social media, where users are exposed to information shared by other users (Kim & Dennis, 2019). While initial research suggests that the spread of fake news is more likely to occur via close contacts, the link between tie strength and intention to share or fact-check fake news remains unexplored (Apuke & Omar, 2020).

As a result, we seek to examine the effects of tie strength and emotional tone on the willingness of users to fact-check and on their intention to share fake news. By doing so, we address calls for research, asking to include the relational and emotional dimensions when assessing information behavior in response to fake news (e.g., Deng & Chau, 2021). The context of our experiment is Facebook Messenger as communication via this service either includes strong (e.g., friends) or weak (e.g., coworkers) relational ties between the sender and the recipient (Lou et al., 2005). The resulting research question asks: *How do tie strength and emotional tone influence the willingness to fact-check and intention to share news among instant messaging users?* To answer this question, we conceptualized a 2x2 full-factorial, between-subjects online experiment. We manipulate tie strength and emotional tone and measure the effect on the two outcome variables, willingness to fact-check and intention to share. The outcome variables are mediated by sender credibility and news believability.

Theoretical Foundations

Behavior in Response to Fake News

Concerning fake news *sharing behavior*, the literature identified news believability and source credibility as powerful factors. Source credibility refers “to a message recipient’s perception of the credibility of a message source, reflecting nothing about the message itself” (Sussman & Siegal, 2003, p. 51). Unlike our notion of source credibility which we call “sender credibility” and describe below, extant literature typically examined the author or publisher as the relevant source. In contrast, news believability refers to the truthfulness of a news item as perceived by users and depends on the reputation of the news item’s author (Deng & Chau, 2021). By *fact-checking*, we understand users verifying the accuracy of a claim (Schuetz et al., 2021), for example by consulting additional sources. While social media platforms such as Facebook have integrated functions that allow users to report fake news (Moravec et al., 2019), the introduction of such measures on instant messaging services (i.e., “an application that provides close to real-time communication between people” (Lou et al., 2005, p. 103) is challenging due to the private one-on-one communication. Therefore, users of instant messaging services must rely on other cues than the reputation of the original message’s source. Such cues include the publisher/author, their personal evaluation of the message based on the content’s believability (i.e., news believability), and the perceived credibility of the sender (i.e., sender credibility).

The Role of Emotions for Fake News

Content creators often use click-baiting (outrageous wording and content) which may express and induce negative emotions (Sobieraj and Berry, 2011). Although the use of outrage is a central component of viral content (Crockett, 2017), the existing literature lacks a conclusive understanding of the influence of outrageous fake news on the sharing and fact-checking behavior of users. On the one hand, such outrageous news items may affect users’ fact-checking behavior as strong emotions can disrupt users’ emotional calm, which they might seek to restore by verifying the accuracy of the news (Wang et al., 2022). On the other hand, negative emotions may interfere with individuals’ deductive reasoning (Blanchette & Leese, 2011), thus potentially limiting their critical thinking ability which is necessary for evaluating the news’ believability (Moravec et al., 2022). Furthermore, other studies suggest that expressing negative emotions such as anger may reduce the believability of news (Deng & Chau, 2021), while others argue that negative information more likely spreads online (Stieglitz & Dang-Xuan, 2013).

The Role of Tie Strength for Fake News

Tie strength is defined as “a combination of the amount of time, the emotional intensity, the intimacy, and the reciprocal services which characterize the tie” (Granovetter, 1973, p. 1361). As such, close friends are considered strong ties, whereas acquaintances have been treated as weak ties. Recent evidence suggests

that the level of believability and trust under strong social ties is greater compared to weak anonymous or external ties (Bapna et al., 2017a). Considering news believability and fact-checking, users still ‘trust, then verify’ (Edgerly et al., 2020). Indeed initial studies suggest a strong connection between social tie strength and fake news sharing (Apuke & Omar, 2020), thus confirming that social media users believe and trust close ties without fact-checking. Lastly, in contrast to the literature, we consider the sender of a news item as the source and thus attribute a crucial role to the tie strength between the sender and receiver of fake news. In general, stronger ties are associated with higher levels of credibility (e.g., Cugelman et al., 2009).

Hypotheses

We hypothesize that strong ties have a positive effect on the recipient’s credibility judgment about the sender (Algarni et al., 2017) and the believability of the news because the level of trust among people with repeated contact is greater than within groups that interact anonymously (Bapna et al., 2017b):

H1a/b: *A news item, received from a strong-tie contact will have a positive effect on a) the sender’s credibility and b) news believability.*

In IS research, the emotional tone of news has been shown to trigger higher engagement behavior (Deng & Chau, 2021; King et al., 2021; Wang et al., 2022). We hypothesize that outrageous fake news will trigger emotionality and thus engagement with the information and its sender. Hence, we expect individuals to be more likely to detect fake news and to perceive the sender as less credible:

H2a/b: *An outrageous news item, will have a negative effect on a) the sender’s credibility and b) news believability.*

Since existing literature indicates that if the recipient considers the sender credible and trustworthy, they will accept the information without scrutinizing it thoroughly (Chu & Kamal, 2008), we hypothesize:

H3: *Sender credibility yields a positive effect on news believability.*

Credibility assessments depend on past experiences, where fact-checking of past senders influences the credibility of future information (Kim & Dennis, 2019). Individuals classify themselves as part of a community through self-categorization, which in turn determines the biases of their beliefs and actions (Turel & Osatuyi, 2021). Assuming that credibility assessments and self-identification processes with the sender are positive, we propose the following hypotheses:

H4a: *Sender credibility yields a negative effect on the willingness to fact-check.*

H4b: *Sender credibility yields a positive effect on the intention to share.*

Users are more likely to engage with and share fake news if they believe the content (Kim & Dennis, 2019). We argue that if users are convinced of the news content, they may see little need to verify it:

H5a: *News believability yields a negative effect on the willingness to fact-check.*

H5b: *News believability yields a positive effect on the intention to share.*

Method

To test our hypotheses, we conduct a 2 (emotional tone: outrageous vs. factual) x 2 (tie strength: weak vs. strong) full factorial, between-subjects online experiment with stimuli based on the Facebook Messenger.

Manipulation: The stimuli of each group involve a Facebook Messenger chat history. Within the chat, there is an outrageous (or factual) fake news article sent by the conversation partner, with whom the participants have either a close or a distant relationship. Drawing on Wang et al. (2022), the presence (or absence) of outrageousness in relation to the news article is introduced by the headline being highly exaggerated (or factual) both in terms of content and writing style. Hence, the news both express and induce emotions. In the full study, we will control for confirmation bias and the previous knowledge that participants have on the news topic used for the manipulations. Tie strength is introduced by manipulating the existing chat history, and hence the length of the relationship (short vs. long) between both conversation partners, their linguistic formality (formal vs. informal), and their response speed (delayed vs. immediate).

Pre-Test: We conducted a pre-test study with workers from MTurk, including two manipulation checks. We asked participants to indicate how they felt about their relationship with their conversation partner (1=very distanced; 7=very close), and whether they found the news content they received outrageous (1=very factual; 7=very outrageous). T-tests showed that the mean value of the strong tie group is significantly ($p < .001^{***}$) higher than the mean value of the weak tie group. In case of the emotional tone, the mean values do not significantly differ ($p = 0.065$). However, we speculate that the latter might be significantly different with a larger sample size.

Manipulation	Characteristic	N	Mean	Standard Deviation	SEM	Levene-test	t-Test (two-tailed p-value)	Percentage of recognition
TIE STRENGTH	Weak	49	4.53	1.72	0.25	<.001 (uneven variances)	<.001 ^{***}	34.7% (≤ 4)
	Strong	65	5.68	1.16	0.14			93.8% (≥ 4)
EMOTIONAL TONE	Factual	57	4.44	1.35	0.18	0.89	0.065	43.8% (≤ 4)
	Outrageous	57	4.91	1.37	0.18			86% (≥ 4)

Table 1. Results of Pre-Test Analysis

Next Steps and Expected Contributions

Our study provides preliminary support for the tie strength manipulations' quality. Building on this initial pilot study, we are currently retesting a slightly adapted experiment. Our study will make several contributions. First, we further specify and explain the recently established effect of tie strength on fake news sharing behavior (Apuke & Omar, 2020) and extend it by adding willingness to fact-check to the model. By doing so, we respond to recent calls for research (e.g., Deng & Chau, 2021) asking to manipulate the relationship between the sender and receiver of fake news. Second, our study will extend the findings of Deng and Chau (2021), who examine the role of emotions in fake news and the corresponding relationship to the believability of such information. We will test the sender's credibility as a further link between emotion evoking fake news and the intention of the receiver to share and fact-check the information. Third, we introduce instant messaging services as a valuable context for fake news research whenever personal relationships are important.

For policymakers, we highlight the need to raise awareness for the validation and sharing of fake news transmitted between close friends and family. For instant messaging service providers, we offer insights to warn their users that they should not rely on simple heuristics (relationship proximity or factual content) and thus prevent the misinterpretation of these heuristics.

Currently, the study is limited by the fact that it does not distinguish between emotion-expressing and inducing fake news. With respect to the full study, we aim to investigate those potentially different effects. Furthermore, one could hypothesize a plausible interaction effect between tie strength and emotional tone, which we are currently investigating. Finally, it might be useful to examine actual response behavior to fake news rather than intentions.

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