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Attention-Grabbing Tactics on Social Media

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Attention-Grabbing Tactics on Social Media

by

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A dissertation submitted in partial fulfillment of the requirements for the degree of Doctor of Philosophy
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Keywords: News reading, social media platforms, hyperbole, emotional arousal

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ABSTRACT

News posts are popular among social media users. Since news reading is critical for both social media platforms and news providers, the use of attention-grabbing tactics, such as hyperbole and expressed emotional arousal, is commonplace to increase news readership. However, there is scant empirical evidence to explain the impact of attention-grabbing tactics on social media users’ reading intentions and behavior in social media. Therefore, I first explore how and why the use of hyperbolic statements in news headlines influences users’ interest and intention to read the news. Drawing on expectation violation theory, I propose competing hypotheses. I conducted three experiments to examine the impact of hyperbole and test the competing mechanisms. The findings from this research challenge the prevailing notion that the use of attention-grabbing tactics, such as hyperbole, is effective in piquing reader interest and influencing news readership. This research contributes to the online news consumption literature by revealing the unintended consequences of deploying hyperbole in headlines and highlighting the nuanced role of expectation violation in this emerging phenomenon. Next, I explore the role of expressed emotional arousal in news reading on social media. Expressions of emotions are common in news posts on social media. News providers embed emotional expressions to grab users’ attention and entice them to read the full article. However, there is a lack of empirical evidence to support this practice. I develop a theoretical model using emotions as social information theory to explain how, when, and why the arousal of emotions expressed in headlines influences news article reading in social media. Through three experiments, I provide converging evidence that the use of expressed arousal
backfires and reduces news reading. I also reveal a context-dependent boundary condition (i.e., information gap) and explore underlying mechanisms. The findings of this research speak to the growing literature on emotional expressions in social media and challenge the assumption that expressed arousal is beneficial in increasing news readership in social media. In summary, this dissertation provides converging evidence that attention-grabbing tactics such as hyperbole and expressed emotional arousal have an unintended impact on news reading on social media. Through this dissertation, I contribute to the growing literature on news consumption on social media and challenge the commonly held assumption that attention-grabbing tactics are useful in increasing news readership on social media.
CHAPTER ONE: INTRODUCTION

News consumption has changed drastically over the last few decades. With increasing digitization, news consumption has shifted from newspapers to digital platforms. This is evident from the declining newspaper circulation in the US (Barthel, 2019; Grieco, 2020). Additionally, there is a decline in non-digital advertising revenues and an increase in digital advertising revenues (Barthel, 2019), suggesting that people are consuming more information on digital platforms.

News consumption is important for social media platforms and news providers (Oh et al., 2016; Sismeiro & Mahmood, 2018). These platforms rely on user engagement to attract advertisers and generate revenues (McFarlane, 2021). Despite several controversies related to fake news (Auxier, 2020), about 53% of U.S. adults still follow news on social media (Shearer & Mitchell, 2021). Additionally, the proportion of advertising revenues from social media platforms is increasing. For instance, Facebook generated about 45% of the total digital advertising revenue in 2020 (Barthel, 2021) compared to 40% in 2018 (Barthel, 2019). Social media platforms do not generate information on their own. Rather they work as information intermediaries. That is, they allow news headlines generated by news providers to be viewed on their platforms.

News providers face a lot of competition on social media. In order to get the users from social media platforms to their news websites, they have to compete not only with other news providers but also with attention-seeking activities on social media platforms. For instance, friends’ updates, chats, online reviews, and even online purchases. To grab user attention many news providers employ attention-grabbing tactics (Zhang et al., 2020). Conventional wisdom suggests that attention-grabbing tactics are useful in generating interest. This can explain why,
several tabloid, as well as mainstream news providers, employ attention-grabbing headlines (Frampton, 2015; Gardiner, 2015). However, social media platforms and academic scholars are developing algorithms to reduce attention-grabbing headlines on social media (Kadian et al., 2018). What's interesting in this phenomenon is that news providers are increasingly employing attention-grabbing headlines while social media platforms are employing mechanisms to reduce attention-grabbing headlines. However, there is little focus on understanding users perspectives on attention-grabbing headlines.

There are competing claims in the popular press. On the one hand, we have influencers who promote the use of attention-grabbing tactics indicating that conventional wisdom about attention-grabbing tactics is accurate (Nimmin, 2017). On the other hand, we have Buzzfeed which is very well known for its attention-grabbing tactics business model. However, it was found to have spent about 75% of its editorial budget to “buy” traffic from Facebook (Mukherjee et al., 2022), suggesting that Buzzfeed’s attention-grabbing strategy might not be as effective as previously thought. Therefore, it is unclear if attention-grabbing tactics increase or reduce news readership on social media platforms.

My dissertation examines the role of the most frequently used attention-grabbing tactics, such as hyperbole and emotional arousal, in news readership on social media. Prior literature in IS focused on three streams of research to understand online news consumption. The first stream focused on the influence of news website characteristics (e.g., paywalls, user interface, referral channels) (Bar-Gill et al., 2021; Dellarocas et al., 2016; Oh et al., 2016; Sismeiro & Mahmood, 2018). The second stream examined how evaluations of news posts on social media (e.g., expert ratings, fact checking) impact news readership (Kim & Dennis, 2019; Kim et al., 2019; Moravec et al., 2020). The final stream examined the role of various characteristics of news post content.
(e.g., expressed emotions, sentiment) (Deng & Chau, 2021; Oh et al., 2016). My dissertation chapters contribute to the third stream of IS research by examining the impact of hyperbole and expressed emotional arousal on news readership.

In my second dissertation chapter, I first explore the impact of hyperbole on news reading on social media. Drawing on expectation violation theory and lay theories of humor, I propose competing mechanisms of psychological contract violation and humor. Three experiments provide converging evidence that hyperbole has a negative impact on news reading and this effect is mediated by psychological contract violation. This research challenges the practice of using hyperbole in news and reveals its context dependent nature on social media. This research also provides a novel mechanism of psychological contract violation against the very well-established mechanism of humor, highlighting that hyperbole can have a negative impact on consumer behavior.

In the third chapter of my dissertation, I examine the impact of emotional arousal on social media users’ news reading intentions. I developed a theoretical model using emotions as social information theory and explained how, when, and why emotional arousal expressed in a headline influences news reading in social media. Through three experiments, I provide converging evidence that the use of expressed arousal backfires and reduces news reading. The findings of this paper speak to the growing literature on emotional expressions in social media and challenge the assumption that expressed arousal is beneficial in increasing news readership in social media.

In the fourth chapter of my dissertation, I summarize the contributions and discuss future research questions. In terms of contributions, I elaborate on the theoretical contributions to IS literature and describe practical implications for news providers and social media platforms. Finally, I discuss two novel research questions that can be focused upon in future research.
CHAPTER TWO: THE PROMISES OF CLICKBAIT HEADLINES IN SOCIAL MEDIA: 
DOES HYPERBOLE ACTUALLY PIQUE INTEREST AND ATTRACTION READERS?

2.1 INTRODUCTION

News reading is critical for social media platforms and news providers (Oh et al., 2016; Sismeiro & Mahmood, 2018). Social media platforms benefit when users spend more time browsing information on the platforms, and they rely on user engagement to attract advertisers (McFarlane, 2021). A big part of social media users’ engagement involves news consumption. Despite the public’s negative sentiment towards fake news (Auxier, 2020) and related controversies (Paul, 2019), 53% of U.S. adults still follow news on social media (Shearer & Mitchell, 2021). News posts on social media are snippets of full articles—often, just the headlines from news providers (Dellarocas et al., 2016). These snippets are intended to attract social media users to read the full article on news providers’ website, which consequently generate revenue for news providers (Stocking, 2019).

Not surprisingly, news providers are keen to use any tactics that can attract social media users’ attention and nudge them to read the articles (Frampton, 2015; Gardiner, 2015). Both mainstream news reporting and tabloid journalism have been associated with the use of catchy and attention-grabbing headlines commonly referred to as “clickbait” (Kadian et al., 2018; Zhang et al., 2020). For example, the news provider BuzzFeed is well-known for its use of attention-grabbing headlines to get traffic from social media websites (Tandoc Jr, 2018). Underlying such practices is a commonly held belief among both practitioners and scholars that attention-grabbing tactics and clickbait headlines would attract interest and thereby increase the exposure of news
articles (Golman et al., 2021; Kim & Dennis, 2019; Kim et al., 2019). Taking this for granted, prior research in this area has focused primarily on the detection of clickbait (Kadian et al., 2018; Shu et al., 2018; Zannettou et al., 2018). However, there is little evidence that clickbait is in fact effective in piquing users’ interest or attracting readers to the news provider websites (Zhang et al., 2020). Following the earlier example, internal documents from BuzzFeed revealed that the news provider spent about 75% of its editorial budget to “buy” traffic from Facebook (Mukherjee et al., 2022). Therefore, it is unclear if BuzzFeed’s strategy to use attention-grabbing headlines actually contributed to its increase in news reading and ad revenue. Recent research also reveals that social media users are less likely to share clickbait headlines compared to non-clickbait headlines (Mukherjee et al., 2022), casting initial doubts on the effectiveness of clickbait headlines.

In this chapter, I focus on hyperbole, one of the most commonly implemented tactics in clickbait (Zannettou et al., 2018; Zhang et al., 2020). Hyperbole is defined as a figure of speech that is not meant to be true in a literal sense (McQuarrie & Mick, 1996), such as expressions like someone “runs faster than the wind” or “is tall as a house.” Because hyperbole grabs attention (Stern & Callister, 2020), it has been categorized as one of the most important figures of speech used in news headlines (Zhang et al., 2020). Beyond the news context, hyperbole is widely adopted in advertisement claims in order to elicit strong impressions and responses (Callister & Stern, 2007). Hyperbole used in advertisements has been found to enhance consumers’ attitudes toward the advertisement and their intention to purchase products, despite being rated as more deceptive (Stern & Callister, 2020). Would hyperbole work effectively in the news context as well?

I examine the following question: How does hyperbole used in news headlines influence social media users’ interest and news reading intentions, and why? Building on two distinct branches of the expectation violation theory (Burgoon, 2015; Burgoon & Hale, 1988), I propose a
mediation model with perceived humor and psychological contract violation as countervailing pathways to explain the impact of hyperbole. I conducted three within-subject lab experiments to test the proposed competing mechanisms. The results across the studies revealed a robust, negative effect of hyperbole in the news context.

This chapter makes three primary contributions. First, I contribute to the emerging news consumption literature and help shift the scholarly attention from a focus on news sharing to news reading in social media. This work complements the emerging studies that have started to look into various factors that influence users’ interest or reading behavior (e.g., Dellarocas et al., 2016; Oh et al., 2022). Second, I challenge the widely accepted assumption from both academics and practitioners that hyperbole is effective in attracting user interest. While prior literature has revealed a positive impact of hyperbole on user interest and engagement in advertising (Leigh, 1994; Stern & Callister, 2020), I provided consistent evidence suggesting otherwise in the news context. Third, I developed a research framework based on the expectation violation theory and revealed perceived psychological contract violation as a likely context-specific explanation. The findings offer a more nuanced view of the relationship between hyperbole and interest, and they also highlight the importance of user expectations in explaining reader behavior. Finally, these findings provide practical insights for news providers to improve news readership and for social media managers to improve user engagement on their platforms.

2.2 THEORETICAL DEVELOPMENT AND HYPOTHESES

2.2.1 News Reading and Interest

News consumption has transformed drastically over the last few decades (Shearer, 2021). With the constant advancements in digital technologies, the consumption of news has shifted from newspapers to digital platforms such as news websites and social media. According to Pew
Research Center, U.S. newspaper circulation in 2018 was at its lowest level since 1940 (Barthel, 2019; Grieco, 2020). While newspaper revenues declined by 62% from $37.8 billion in 2008 to $14.3 billion in 2018 (Grieco, 2020), revenues from advertisements on digital platforms grew by 23% in 2018 alone (Barthel, 2019). Facebook, one of the most popular social media platforms, was reported to account for 40% of the total ad revenue generated on digital platforms in 2018 (Barthel, 2019). Since news reading drives revenues for the news providers (Bar-Gill et al., 2021), news providers are increasingly relying on social media to generate interest and sustain readership (Barthel, 2019).

Online news consumption has also garnered considerable attention from IS researchers (see Appendix A for a summary of the related literature). Three streams have been developed to study the impact of various factors on news readership, which is my central interest. One stream of work focused on the influence of news website characteristics (e.g., paywalls, user interface, referral channels) (Bar-Gill et al., 2021; Dellarocas et al., 2016; Oh et al., 2016; Sismeiro & Mahmood, 2018). A second stream examined how evaluations of news posts on social media (e.g., expert ratings, fact checking) influence readership (Kim & Dennis, 2019; Kim et al., 2019; Moravec et al., 2020). Finally, a third stream examined the role of various characteristics of news post content (e.g., expressed emotions, sentiment) (Deng & Chau, 2021; Oh et al., 2022). I extend this third stream of work by focusing on an attention-grabbing tactic employed in news headlines and exploring its nuanced impact on news readership.

To attract social media users, news providers often focus their efforts on the headlines of news posted on social media (Cook, 2016). Social media users are generally exploratory in their reading and consumption of information (Bar-Gill et al., 2021), and different pieces of information compete for users’ limited attention (Holton & Chyi, 2012). These pieces include not only the
headlines of news curated by the platform’s personalization algorithms (Lazer, 2015), but also friends’ activities, updates from groups with which one is affiliated, and advertisements. As a result, news providers must find a way for their headlines to stand out among the competition (Bar-Gill et al., 2021). To this end, many news providers deploy strategies to make the headlines more attention-grabbing because headlines are under their control in social media (Zhang et al., 2020) and it is the headlines that drive users’ reading intentions, defined as the intention to read the full article on the news provider’s website (Dellarocas et al., 2016).

These attention-grabbing strategies are intended to increase interest and overcome the threshold required for the user to click on the news link (Bar-Gill et al., 2021). It is commonly believed that attention-grabbing tactics are effective in activating (situational) interest (Blom & Hansen, 2015), which I define here as a temporary state of arousal that can be activated by elements in the text of the news headline (Hidi & Baird, 1986; List & Alexander, 2017). Therefore, it is not surprising that news publishers are changing news headlines to pique social media users’ interest through various attention-grabbing tactics, which I turn to next.

2.2.2 Hyperbole

A commonly used strategy to attract news readers’ interest is hyperbole, which is a *figure of speech* (Lagerwerf et al., 2016; Zhang et al., 2020). A figure of speech refers to a creative deviation from a person’s expectations in communication or norms in conversations, and they are intended to draw attention (McQuarrie & Mick, 1996). The focus of my research, hyperbole, is a specific type of figure of speech often employed in advertisements (Leigh, 1994; Stern & Callister, 2020), news headlines (Lagerwerf et al., 2016; Zhang et al., 2020), and press releases of research articles (Sumner et al., 2014). I define hyperbole as “figurative expressions involving intentional,
exaggerated statements that are not meant for literal interpretation, but provide emphasis, heighten effects, or elicit strong impressions or responses” (Callister & Stern, 2007, p. 2).

Hyperbole is widely adopted in advertisements because it evokes positive impressions and generates interest in products (Callister & Stern, 2007). Part of the reason for this positive reaction is that hyperbolic advertisements amuse consumers and increase their feelings of pleasure (McQuarrie & Mick, 2003; Roberts & Kreuz, 1994). Moreover, hyperbole is considered normative and generally expected in advertising because hyperbole can attract consumers’ attention, which is what advertisers do for a living (McQuarrie & Mick, 1996), and also because consumers expect artfulness and creativity in advertisements (Kronrod & Danziger, 2013). However, norms and expectations are highly context dependent (Hogg & Reid, 2006). The news industry is fundamentally different from the advertising industry in that news publishers are expected to tell the truth rather than being artful or creative. Thus, the use of hyperbole in news headlines as an attention-grabbing tactic may not yield the same outcomes. Next, I introduce Expectation Violation Theory as my theoretical foundation and distinguish two types of expectations relevant in the news context.

2.2.3 Expectation Violation Theory

Originated from the communication literature, Expectation Violation Theory (EVT) posits that individuals evaluate others’ messages based on prior expectations of how others should communicate (Burgoon, 2015). These expectations are lasting cognitions of anticipated communication behaviors (Burgoon, 2015) that are often based on norms associated with contextual factors (Burgoon & Walther, 1990). When these expectations are not met, a violation is said to have occurred (Burgoon, 2015). EVT argues that the violation of an expectation does not always lead to negative outcomes. Instead, a violation can be appraised as either a positive
violation (i.e., more favorable than expected) or a negative violation (i.e., less favorable than expected) depending on how the violation is interpreted (Burgoon, 2015; Burgoon & Hale, 1988).

In this context, the use of hyperbole in news headlines violates two distinct types of expectations originating from the hyperbole itself and from the news context, and I argue that the two types of violations may be appraised differently. First, people usually expect the information they consume to be communicated literally because of its congruency with existing mental models (Huang, 2020). Because hyperbole is typically incongruent with people’s existing mental models, it violates readers’ expectations by definition (McQuarrie & Mick, 1996). This violation should be interpreted positively because a violation of mental models generates humor and attracts interest (Huang, 2020; Roberts & Kreuz, 1994). Second, people associate news with objectivity and expect news providers to offer objective information in headlines (Calcutt & Hammond, 2011; Schudson, 1981). Thus, the use of hyperbole in news headlines violates users’ expectation of receiving objective information. This violation can be interpreted negatively because the news providers’ failure to fulfill their obligation to offer objective information may represent a violation of their psychological contract with readers (Pavlou & Gefen, 2005; Wang & Wang, 2019; Wang et al., 2018). Next, I build on the literature on humor and psychological contract violation to advance a research model of competing pathways.

2.2.4 Perceived Humor

The use of hyperbole in news headlines can enhance reader interest and reading intentions through perceived humor. Something is perceived as humorous when it is appraised as a benign violation of expectations (Warren et al., 2018). People organize information based on mental models that provide a mental representation of the world (Huang, 2020). When people encounter hyperbole, its contained exaggeration is typically incongruent with their existing mental models
and violates the expectation of receiving congruent information (Huang, 2020). In addition, a stimulus that violates expectations will be humorous as long as it is also perceived as benign—the perception of something as safe, acceptable, and non-serious (Warren et al., 2018). Hyperbole in news headlines is unlikely to be perceived as threatening because it does not involve imminent physical or psychological harm. Instead, readers generally understand that hyperbolic statements in headlines are not meant to be taken literally (McQuarrie & Mick, 1996). In support of these arguments, hyperbole has been positively linked to perceived humor in marketing contexts (Leigh, 1994; Stern & Callister, 2020), and I expect the same relationship to hold in the news context.

Perceived humor can then generate interest, which is an emotion that orients people’s attention towards the stimuli containing incongruent information (Silvia, 2008). When people appraise a piece of information as incongruent, they tend to expend effort to reduce incongruity by trying to comprehend the underlying information (Berlyne, 1960; Silvia, 2008). Thus, the presence of incongruity at the core of humor attracts reader interest (Alden et al., 2000). Once activated, interest motivates people to learn more and take further action (Silvia, 2006). For instance, students interested in a topic tend to spend more time reading about it and to explore more varied sources pertinent to the topic (Silvia, 2006). Similarly, social media users whose interest in a news post is piqued are more likely to read the complete article on the news providers’ site. Taken together, I expect hyperbole in news headlines to enhance reader interest and reading intention through perceived humor, and I propose the first hypothesis below.

*Hypothesis 1: a) Hyperbole in news headlines has a positive effect on reading intention, b) interest mediates the positive effect of hyperbole in news headlines on reading intention, and c) perceived humor mediates the positive effect of hyperbole on interest.*
2.2.5 Psychological Contract Violation

On the other hand, hyperbole may reduce interest and reading intentions because of psychological contract violation. News providers have traditionally been associated with journalistic objectivity (Schudson, 1981). Consequently, news readers expect and trust news providers to offer objective news. This trust-based relationship forms a psychological contract (Wang & Wang, 2019). Psychological contracts have been studied in the contexts of online buyer–seller relationships (Pavlou & Gefen, 2005) and online recommendation agents (Wang & Wang, 2019; Wang et al., 2018). In these contexts, a psychological contract has been defined as the consumers’ belief in receiving services as per the norms of exchange and obligations of the service provider (Pavlou & Gefen, 2005). Thus, if the service provider fails to fulfill its obligations to the consumer, the consumer will perceive a psychological contract violation. In this context, news providers are generally expected to deliver objective information because of journalistic objectivity norms (Calcutt & Hammond, 2011; Schudson, 1981). When news providers resort to attention-grabbing tactics, such as hyperbole, in headlines, news readers may perceive those headlines as a violation of their psychological contract with the news providers.

Psychological contract violation can decrease interest as it reduces trust (Pavlou & Gefen, 2005; Wang & Wang, 2019; Wang et al., 2018). In online buyer–seller relationships, for example, a psychological contract is violated when a seller fails to meet their expected obligations to the buyers, and this violation reduces their trust in the seller (Pavlou & Gefen, 2005). Consumers are subsequently less likely to transact further with the seller (Pavlou & Gefen, 2005). Similarly, when news providers do not meet their obligation to offer objective information, consumers might feel less trusting of the news providers and would be less likely to engage with the full article on the news providers’ website. While interest is about resolving incongruity as I explained earlier,
people should be less motivated to do so if the incongruent information comes from an untrusting source (Priester & Petty, 1995). Therefore, psychological contract violation is likely to reduce users’ interest towards the news article. Combined with earlier arguments about the positive effect of interest on reading intentions, I propose the following hypothesis. Figure 1 presents the theoretical framework.

*Hypothesis 2: a) Hyperbole in news headlines has a negative effect on reading intention, b) interest mediates the negative effect of hyperbole in news headlines on reading intention, and c) psychological contract violation mediates the negative effect of hyperbole on interest.*

![Figure 1. Theoretical Framework](image)

2.3 METHOD

To test these hypotheses, I conducted three experimental studies and varied the presence of a hyperbolic phrase in news headlines. In the first study, I tested the competing hypotheses of H1 and H2 regarding the impact of hyperbole on reading intentions. The second study replicated the first study in a different news context and further tested the mechanisms of humor and psychological contract violation. Finally, Study 3 provided evidence for the impact of hyperbole on reading behavior (rather than intention investigated in earlier studies). Table 1 provides details
about the relationships and the hypotheses that were examined in these studies. Study 3 is not included in Table 1 because the impact of hyperbole on reading behavior was not hypothesized.

Table 1. Summary of Studies

<table>
<thead>
<tr>
<th>Study</th>
<th>Hypotheses Examined</th>
<th>Relationships Examined</th>
</tr>
</thead>
<tbody>
<tr>
<td>Study 1 and Study 2</td>
<td>H1a / H2a</td>
<td>Hyperbole — Reading Intention</td>
</tr>
<tr>
<td>Study 1 and Study 2</td>
<td>H1b / H2b</td>
<td>Hyperbole — Interest — Reading Intention</td>
</tr>
<tr>
<td>Study 2</td>
<td>H1c / H2c</td>
<td>Hyperbole — Perceived Humor — Psychological Contract Violation — Interest</td>
</tr>
</tbody>
</table>

2.3.1 Study 1

In the first study, participants were asked to read and evaluate two news posts from social media. I manipulated the presence of hyperbole within-subjects through the two news posts. Compared to a between-subjects design where participants would only view one news post, a within-subjects design reflects reality more closely as social media users usually browse through multiple news posts on a webpage, some of which may have hyperbole, and some may not. This design is also desirable for my purposes because it increases the salience of the hyperbole manipulation.

2.3.1.1 Stimulus

I developed the news headlines in two steps. First, I collected news headlines related to the topic of coronavirus from Snopes.com. I chose coronavirus because it was a trending and engaging topic for news consumers when I conducted the experiment (Mitchell and Oliphant 2020). I
collected headlines under two categories where information credibility was ambiguous: “mixture” (i.e., having elements of both truth and falsity) and “unproven” (i.e., having insufficient evidence to be classified as true or false). I used headlines from these two categories because the veracity of real-world news is often mixed or uncertain from a user’s point of view. Using headlines that are rated “true” or “false” could also create a ceiling or floor effect, respectively, in the dependent variable.

Second, I selected two headlines from the pool and used the original wording for the hyperbole-absent version of news headlines. I then replaced a word in each headline with a hyperbolic phrase to create the hyperbole-present version. In one post, I changed the word “quickly” to “at the speed of light” based on the definition of hyperbole (Callister & Stern, 2007). In the other post, I changed the word “gradually” to “take a gazillion years.” The wordings of the headlines are listed in Table 2.

**Table 2. News Headline Stimuli for Study 1**

<table>
<thead>
<tr>
<th>Set</th>
<th>Hyperbole Absent</th>
<th>Hyperbole Present</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>Hand sanitizers gradually become less effective after their expiration date</td>
<td>Hand sanitizers take a gazillion years to become less effective after their expiration date</td>
</tr>
<tr>
<td>#2</td>
<td>The coronavirus disease is spreading quickly from gas pumps</td>
<td>The coronavirus disease is spreading at the speed of light from gas pumps</td>
</tr>
</tbody>
</table>

2.3.1.2 Procedure

One hundred ninety-two undergraduate students from an introductory IS course at a southern U.S. university participated in exchange for course credit. In the cover story, participants were informed that the news publishers often post news on social media platforms such as Facebook. Participants were then asked to read and evaluate two news headlines, one with

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1 A summary of the demographic information for participants in each of the experimental studies is provided in the Appendix B.1.
hyperbole and the other without hyperbole, randomly selected from different headline sets (see Table 2). The presentation orders of both sets and hyperbole conditions were counterbalanced. The appearance of the posts was created to imitate that of Facebook posts (see Figure 2).

![Sample News Post for Study 1](image)

**Figure 2. A Sample News Post for Study 1**

2.3.1.3 Measures

After reading each news post, participants reported their intentions to read the news as well as their interest in the news post. Intention to read the full article on the news publisher’s website was measured on a seven-point Likert scale, using three items adapted from Chen et al. (2014) (e.g., “How likely would you be to expend effort to read the full article of this news?”). Interest was measured also on a seven-point Likert scale, using three items adapted from Silvia (2005) (e.g., “I found this news post interesting.”). As a manipulation check, participants rated the extent to which the information in the news post was hyperbolic using a seven-point semantic differential scale, with three items adapted from Huang (2020) and Callister and Stern (2007) (e.g., “Does not contain any exaggeration / Contains a lot of exaggeration”). Appendix B.2 contains all the measures used in this and follow-up studies.
2.3.1.4 Results

Before testing my hypotheses, I examined the effectiveness of my hyperbole manipulation. I conducted a repeated-measures ANCOVA with hyperbole as a within-subject factor and the order of headlines as a categorical covariate. Results showed that perceived hyperbole in the hyperbole-present condition was significantly higher than that in the hyperbole-absent condition ($M = 3.418$ vs. $5.274$, $F(1, 190) = 129.912$, $p < 0.001$), suggesting that my manipulation was successful. Appendix B.3 provides descriptive statistics for this study and Study 2.

To test the main effect of hyperbole on reading intentions, I conducted a repeated-measures ANCOVA with reading intentions as the outcome variable and the order of headlines as a categorical covariate. Results are provided in Table 3. These results revealed that hyperbole significantly reduced reading intentions ($M = 3.638$ vs. $3.189$, $F(1, 190) = 9.365$, $p = 0.003$), supporting H2a rather than H1a. To test the mediating role of interest, I conducted a mediation analysis using the SPSS macro MEMORE (Montoya & Hayes, 2017). In the mediation analysis, I included interest as the mediator. Results showed that hyperbole had a negative effect on interest ($\beta = -0.457$, $t(191) = -4.225$, $p < 0.001$), and interest had a positive effect on reading intentions ($\beta = 0.747$, $t(189) = 9.098$, $p < 0.001$). The indirect effect through interest was negative and significant, as zero was not included in its 95% confidence interval ($a*b$ path coefficient = -0.341, 95% CI = [-0.530, -0.174]), supporting H2b. The mediation analysis also showed that the direct effect of hyperbole on reading intention was not significant ($c’$ path coefficient = -0.108, 95% CI = [-0.361, 0.145]) (see Figure 3).
### Table 3. Results from Repeated-Measure ANCOVA in Study 1

<table>
<thead>
<tr>
<th></th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Reading Intentions</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Within-Subjects</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hyperbole</td>
<td>19.298</td>
<td>1</td>
<td>19.298</td>
<td>9.365</td>
<td>.003</td>
</tr>
<tr>
<td>Hyperbole × Headline Order</td>
<td>1.430</td>
<td>1</td>
<td>1.430</td>
<td>.694</td>
<td>.406</td>
</tr>
<tr>
<td>Error (Hyperbole)</td>
<td>391.549</td>
<td>190</td>
<td>1.977</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Between-Subjects</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Headline Order</td>
<td>1.262</td>
<td>1</td>
<td>1.262</td>
<td>.257</td>
<td>.613</td>
</tr>
<tr>
<td>Error</td>
<td>933.736</td>
<td>190</td>
<td>4.914</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

![Diagram](image)

**Figure 3. Mediation Results of Reading Intentions in Study 1**

Notes: *** for p < 0.001

### 2.3.1.5 Discussion

In Study 1, I found that hyperbole had a negative effect on participants’ intentions to read news, and this effect was mediated by interest. These results provided support for a negative effect of hyperbole as hypothesized in H2a and H2b, but not for H1a or H1b. However, this study had a few limitations. First, although I demonstrated the mediating role of interest, I did not measure mechanisms behind the impact of hyperbole on interest: perceived humor and psychological contract violation. Second, I used headlines that cannot be verified as objectively true or false, so my results may not generalize to mainstream news that is typically true in nature. Third, participants were exposed to coronavirus-related news headlines. The importance and relevance of this topic at the time of data collection were desirable for my purposes, but they might have also
artificially inflated the impact of hyperbole. Finally, my participants were college students who are homogenous and educated, and my results may not generalize to a broader audience. I designed the next study to address these limitations.

2.3.2 Study 2

I conducted Study 2 on Amazon Mechanical Turk to replicate the findings of Study 1 with real news related to a different topic. Additionally, I explored the mediating roles of perceived humor and psychological contract violation.

2.3.2.1 Stimulus

I developed the stimuli by following a similar procedure as in Study 1. First, I collected true science news headlines from ScienceDaily.com. ScienceDaily.com is a website that aggregates and publishes scientific news articles. I chose science headlines that were generic in nature to reduce the influence of prior beliefs and the likelihood of confirmation bias prevalent in many other categories (e.g., politics; see Moravec et al., 2020). Additionally, I used true headlines to verify if findings from Study 1 would generalize to headlines from mainstream news providers. Second, I selected two headlines from the pool and used the original wording for the hyperbole-absent version of news headlines. In each headline, I replaced a word with a hyperbolic phrase to create the hyperbole-present version. The wording of these two sets of headlines is shown in Table 4.

<table>
<thead>
<tr>
<th>Table 4. News Headline Stimuli for Study 2</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Set</strong></td>
</tr>
<tr>
<td>#1</td>
</tr>
<tr>
<td>#2</td>
</tr>
</tbody>
</table>
2.3.2.2 Procedure

I recruited ninety-four participants from Amazon Mechanical Turk (MTurk) for this study because MTurk represents a more heterogenous population. The cover story and procedure for this study were identical to those used in Study 1. Hyperbole and reading intentions were measured using the same scales used in Study 1. Perceived humor was measured on a seven-point semantic differential scale, using two items adapted from Warren and McGraw (2013) (e.g., “Not at all humorous / Very humorous”). Psychological contract violation was measured on a seven-point Likert scale, using three items adapted from Wang and Wang (2019) (e.g., “The news author failed to meet its obligations to you.”).

2.3.2.3 Results

Before testing my hypotheses, I examined the effectiveness of my manipulation of hyperbole. I conducted a repeated-measures ANCOVA with hyperbole as a within-subject factor and the order of headlines as a categorical covariate. Results showed that perceived hyperbole in the hyperbole-present condition was significantly higher than that in the hyperbole-absent condition ($M = 3.489$ vs. 5.217, $F(1, 92) = 50.746, p < 0.001$), suggesting that my manipulation was successful.

To test the main effect of hyperbole on reading intentions, I conducted a repeated-measures ANCOVA with reading intentions as the outcome variable and the order of headlines as a categorical covariate. Results are provided in Table 5. Results revealed that hyperbole significantly reduced reading intentions ($M = 3.652$ vs. 2.844, $F(1, 92) = 13.456, p < 0.001$), supporting H2a. To test the mediating role of interest, I conducted a similar mediation analysis as in Study 1. Results showed that hyperbole had a negative effect on interest ($\beta = -0.894, t(93) = -4.325, p < 0.001$), and interest had a positive effect on reading intentions ($\beta = 0.927, t(93) = 16.754, p <
The indirect effect of hyperbole on reading intentions through interest was again negative and significant, \((a*b\) path coefficient = -0.829, 95% CI = [-1.270, -0.431]), supporting H2b. The mediation analysis also showed that the direct effect of hyperbole on reading intention was not significant \((c’\) path coefficient = 0.010, 95% CI = [-0.231, 0.250]) (see Figure 4).

**Table 5. Results from Repeated-Measure ANCOVA in Study 2**

<table>
<thead>
<tr>
<th></th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>(F)</th>
<th>(P)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Reading Intentions</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Within-Subjects</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hyperbole</td>
<td>30.636</td>
<td>1</td>
<td>30.636</td>
<td>13.456</td>
<td>&lt; .001</td>
</tr>
<tr>
<td>Hyperbole × Headline Order</td>
<td>3.170</td>
<td>1</td>
<td>3.170</td>
<td>1.392</td>
<td>.241</td>
</tr>
<tr>
<td>Error (Hyperbole)</td>
<td>391.549</td>
<td>92</td>
<td>1.977</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Between-Subjects</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Headline Order</td>
<td>.313</td>
<td>1</td>
<td>.313</td>
<td>.059</td>
<td>.808</td>
</tr>
<tr>
<td>Error</td>
<td>487.437</td>
<td>92</td>
<td>5.298</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Figure 4. Mediation Results of Reading Intentions in Study 2**

Notes: *** for \(p < 0.001\)

Next, I conducted the mediation analysis, including humor and psychological contract violation as parallel mediators. The results showed that hyperbole had a positive effect on perceived humor \((\beta = 0.596, \, t(93) = 3.812, \, p < 0.001\)), but perceived humor had a non-significant effect on interest \((\beta = 0.073, \, t(93) = 0.546, \, p = 0.587\)). The indirect effect through perceived humor was not significant \((a*b\) path coefficient = 0.044, 95% CI = [-0.149, 0.227]). Thus, H1c was not supported. In contrast, hyperbole had a positive effect on psychological contract violation \((\beta =
0.535, \( t(93) = 3.988, p = 0.001 \), which in turn had a negative effect on interest (\( \beta = -0.696, t(93) = -4.661, p < 0.001 \)). The indirect effect through psychological contract violation was negative and significant (\( a*b \) path coefficient = -0.373, 95% CI = [-0.586, -0.193]), supporting H2c. The mediation analysis also showed that the direct effect of hyperbole on interest was significant (\( c' \) path coefficient = -0.564, 95% CI = [-0.990, -0.139]) (see Figure 5).

![Figure 5. Mediation Results of Interest in Study 2](image)

Notes: * for \( p < 0.05 \), and *** for \( p < 0.001 \)

2.3.2.4 Discussion

In Study 2, I replicated the negative, overall effect of hyperbole on reading intentions and the mediating effect of interest. I further explored how hyperbole influences interest through two competing mechanisms. The results suggest that hyperbole negatively influenced interest through psychological contract violation supporting H2. However, humor did not mediate the relationship between hyperbole and interest. Although hyperbole did increase perceived humor, perceived humor did not have a significant impact on interest. Therefore, I did not find support for H1.

The first two studies demonstrated the main effect and the mechanism through which hyperbole influences interest and reading intentions. One limitation of these studies is that they were focused on reading intentions which may not be a perfect proxy of reading behavior. To
overcome this limitation, I conducted a final study to test the effect of hyperbole on reading behavior.

2.3.3 Study 3

I conducted Study 3 on Amazon Mechanical Turk to replicate the main effect of hyperbole and test the applicability of my earlier findings to reading behavior.

2.3.3.1 Procedure

I recruited eighty-one participants from Amazon Mechanical Turk for this study. The cover story for this study was identical to the one used in Study 2. However, instead of asking participants to report their intention to read, I asked them to select one of the two headlines for which they would like to read the full article. The two stimuli headlines were identical to the ones used in Study 2 (see Table 4). These headlines were presented as news posts on one screen horizontally. That is, participants would be able to see one headline from the first set and one from the second set. Furthermore, one of the headlines would have hyperbole while the other would not. The presentation orders of headline sets and hyperbole conditions were counterbalanced.

2.3.3.2 Results

The results indicate that 67.9% of the participants chose hyperbole-absent headline, which is significantly different from chance (67.9% vs. 50%; z = 3.22, p = 0.001). Furthermore, I examined the main effect of hyperbole on reading behavior using a generalized mixed effects linear regression with random slopes for each subject. The analysis revealed a negative and significant main effect of hyperbole on reading behavior (β = -0.749, z = -3.148, p < 0.01).

2.3.3.3 Discussion

Results from Study 3 provided support for a negative effect of hyperbole on reading behavior. These results indicate that participants’ intention and behavior towards reading
hyperbolic headlines is consistent and aligned. That is, participants are less likely to read full articles of headlines that have hyperbole compared to headlines that do not have hyperbole.

2.4 GENERAL DISCUSSION

The use of attention-grabbing tactics is commonplace in news headlines because of the common belief that such tactics will increase interest and readership (Frampton, 2015). Accordingly, a large body of research was dedicated to the detection of attention-grabbing clickbait headlines on social media (Kadian et al., 2018; Shu et al., 2018; Zannettou et al., 2018). With a focus on social media users’ reactions to hyperbole, one of the commonly deployed clickbait tactics, I not only challenge this commonly held assumption but also explore possible mechanisms. I developed a theoretical model on the basis of two branches of expectation violation theory, and I proposed competing mechanisms with opposite predictions. Results from three studies provided converging evidence that the presence of hyperbole in headlines was not only ineffective in piquing user interest and enticing them to read the full news articles, but it backfires.

Table 6 presents a summary of the findings in the first two studies; I did not include Study 3 in this table because it was concerned with the outcome variable of reading behavior, which was not hypothesized.

<table>
<thead>
<tr>
<th>Hypotheses</th>
<th>Study 1</th>
<th>Study 2</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Hypothesis 1a.</strong> Hyperbole in news headlines has a positive effect on reading intention</td>
<td>Not supported</td>
<td>Not supported</td>
</tr>
<tr>
<td><strong>Hypothesis 1b.</strong> Interest mediates the positive effect of hyperbole in news headlines on reading intention</td>
<td>Not supported</td>
<td>Not supported</td>
</tr>
<tr>
<td><strong>Hypothesis 1c.</strong> Perceived humor mediates the positive effect of hyperbole on interest</td>
<td>Not explored</td>
<td>Not supported</td>
</tr>
<tr>
<td><strong>Hypothesis 2a.</strong> Hyperbole in news headlines has a negative effect on reading intention</td>
<td>Supported</td>
<td>Supported</td>
</tr>
<tr>
<td><strong>Hypothesis 2b.</strong> Interest mediates the negative effect of hyperbole in news headlines on reading intention</td>
<td>Supported</td>
<td>Supported</td>
</tr>
<tr>
<td><strong>Hypothesis 2c.</strong> Psychological contract violation mediates the negative effect of hyperbole on interest</td>
<td>Not explored</td>
<td>Supported</td>
</tr>
</tbody>
</table>
2.4.1 Theoretical Implications

This research makes several theoretical contributions. First, I shift the focus from news sharing (the dominant emphasis of the prior literature) to news reading, thus adding to the emerging literature on news consumption. Given the rise of fake news and its destructive influence, most research in IS, psychology, and computer science has examined the spread of fake news and various factors that can influence users’ intention to share the news (e.g., Kim et al., 2019; Pennycook et al., 2020; Vosoughi et al., 2018). On the other hand, news reading is one of the primary sources of revenue for news providers (Stocking, 2019). Recognizing the importance of news readership for news providers, some recent studies have started to look into antecedents of users’ interest and reading behavior, such as information amount conveyed through headlines and snippets as well as sentiment of the headlines (e.g., Dellarocas et al., 2016; Oh et al., 2022). Such investigations are necessary and valuable because news sharing and news reading were shown to have very different antecedents (Oh et al., 2022). I extend this burgeoning literature by exploring news headlines that are under the full control of news providers in social media.

Second, I contribute to the literature on hyperbole by revealing its unintended effects in the unique context of news industry. While prior research revealed factors that can increase interest and reading intentions (Hidi & Baird, 1986; Silvia, 2006), I reveal hyperbole as a context-specific antecedent that may not work as expected. Hyperbole has been touted as an effective strategy to grab users’ interest in advertising literature because of the positive effects of hyperbole on advertisement liking, product recall and buying intentions (Leigh, 1994; Stern & Callister, 2020). Similarly, it is commonplace in the news industry as a supposedly effective tactic in “clickbait” headlines. Instead, I provided consistent evidence for its backfiring effect when used in news headlines. These findings suggest that the appeal of hyperbole in attracting interest may not be
universal, and that there is a greater need to verify the effectiveness of various types of “clickbait” tactics commonly deployed by practitioners. As such, I also contribute to the emerging literature on the unintended consequences of using clickbait. While emerging evidence cautions against the use of clickbait for sharing purposes (Mukherjee et al., 2022), I extend this nascent literature by challenging the assumption that clickbait headlines increase clicks and news reading behavior.

Third, in addition to challenging the effectiveness of hyperbole in the news context, the proposed theoretical framework deepens the understanding of possible mechanisms and highlights the importance of users’ expectations in understanding news reading behavior. Communication norms develop gradually with repetitive use and evaluations (Kronrod & Danziger, 2013). For instance, repetitive use of hyperbole by advertisers may have contributed to its acceptance as a norm by consumers (Kronrod & Danziger, 2013). Similarly, repetitive use of advice in health communications may have contributed to it being accepted as normative (Searle & Searle, 1969). However, news is closely associated with the norm of facts and objective information (Schudson, 1981). As a result, the use of hyperbole going against this norm in news leads to psychological contract violation. Drawing on the expectation violation theory, the theoretical model integrates previously documented positive effects through perceived humor and a context specific negative pathway through psychological contract violation. This research highlights the importance of considering context-specific norms and social media users’ expectations in understanding and predicting user interest and reading intentions and behavior.

2.4.2 Practical Implications

First, the findings contribute to the practice of news headlines and online content creation. Many tabloid journalists and even mainstream news providers employ clickbait headlines to increase ad revenue because attention-grabbing tactics are assumed to generate user interest and
increase reading behavior (Golman et al., 2021; Kim & Dennis, 2019; Kim et al., 2019). The findings challenge this assumption and indicate that social media users can, counterintuitively, lose interest upon recognition of the tactics and then react negatively. I provide evidence that attention grabbing tactics such as the use of hyperbole are not only an ineffective strategy to entice user to read news, but they actually drive readers away. While it is assumed that social media users are in a hedonic mindset, their preferences for consuming amusing and humorous content may be context-dependent (Lee et al., 2018). That is, users might appreciate humor in contexts like advertisements, but this might not be the case in the news context. Therefore, news providers need to be acutely aware of the negative reactions from hyperbole and not apply this tactic blindly. Based on these findings, journalists and content creators may benefit from being more objective in providing information on social media.

Second, findings suggest that social media platforms intending to improve user engagement should reduce their exposure to clickbait headlines. Social media platforms such as Facebook and Twitter utilize content curation algorithms to maximize user engagement. That is, news posts that receive more user engagement (e.g., clicks and shares) are seen as more relevant and are ranked higher on newsfeeds of the social media users (e.g., Backstrom, 2013; Jahr, 2016). These findings suggest that clickbait headlines such as those using hyperbole may not receive more clicks, but they may receive less. Consequently, such headlines should be ranked lower on the newsfeed in order to avoid impeding user engagement. Social media platforms can tweak curation algorithms to promote objective and factual news headlines, and they can develop guidelines to educate content creators about the unintended consequences of relying on clickbait headlines on social media. These guidelines can improve user engagement and help content creators reach their intended audience on social media.
Third, the findings also have implications for public policy and research communications. The use of hyperbole is prevalent in university press releases (Sumner et al., 2014). In 2011, 33% to 40% of the press releases by Russel Group universities were found to have hyperbolic statements (Sumner et al., 2014). Additionally, mainstream news reporting on these research findings were also found to contain hyperbole (Sumner et al., 2014). It is reasonable for people in general to expect objective information from researchers. Therefore, researchers and public relationship departments at universities need to be more careful in using hyperbole in their statements and aware of its potential unintended effects. These results indicate that hyperbole in health (Study 1) and science (Study 2 and Study 3) reduce their tendencies of reading the complete news article. Therefore, use of hyperbole in university press releases to gain attention may also backfire, eroding public’s trust and reducing the impact of the scientific messages being delivered.

2.4.3 Future Research

This research also presents various opportunities for future research. First, I focused on the effect of attention-grabbing tactics in headlines on social media users’ interest and readership. However, attention-grabbing tactics might have more direct, unintended consequences for the news providers. For instance, headlines that use attention-grabbing tactics might increase the salience of the news provider, leading users to remember the news provider for violating journalistic objectivity norm. The primary outcome variable of interest is users’ intentions to read the full article of a news. Although the findings suggest that the use of hyperbole attention-grabbing headlines may also erode users’ trust in the news providers, more research is needed to explore the direct implications of such attention-grabbing tactics for news providers.

Second, this research focuses on hyperbole, a specific type of figure of speech which involves substitution of literal information with an exaggerated or impossible claims (McQuarrie
& Mick, 1996). However, there are other types of figures of speech that are used frequently in
advertisements and news headlines to grab user attention (Leigh, 1994). For instance, ellipsis is
used to create information gap by omitting information in the headline to pique reader’s curiosity
(Blom & Hansen, 2015). Rhetorical questions are often used for similar purposes (Lai & Farbrot,
2014). Future research can explore the effectiveness of these other types of figures of speech in
the news context.

Third, attention-grabbing headlines are used not only on social media but also on web
search engines and news aggregators. The common element across these different types of
platforms is the summary headline and an underlying hyperlink pointing to the full article on the
news provider’s website. Furthermore, the findings may be generalized to news consumption on
video sharing platforms like YouTube, where users see headlines and thumbnail images to decide
which video to watch. Users’ decision to view the video may depend more on the headline as
thumbnail images typically convey little or ambiguous information. When some news breaks out,
news providers may utilize attention grabbing tactics in the video headlines to increase views to
their news videos. More research is needed to test the robustness of the findings in these other
contexts.

Fourth, this research did not touch on the issue of fake news, although fake news creators
have been known to utilize attention grabbing tactics on social media (Kim & Dennis, 2019; Kim
et al., 2019). Little is known about how the use of attention-grabbing tactics in fake news headlines
may influence users’ interest and subsequent news consumption. Recent research on fake news
suggests that social media users are in a hedonic mindset and lack motivation to judge news
headlines (Moravec et al., 2020; Pennycook et al., 2020). On the other hand, there is evidence that
attention-grabbing headlines are processed more deeply and are more likely to be remembered
(Kronrod & Danziger, 2013). If social media users who encounter fake news in the form of attention-grabbing headlines (but are not aware of the fake nature of the news) are more likely to remember the misinformation, this represents a harmful consequence even if they are less likely to read the full content based on the findings by Kronrod and Danziger (2013). More work is needed to uncover the nuanced interactions between the veracity of the news and the use of attention-grabbing tactics in news headlines.

2.4.4 Conclusion

This research examines how and why hyperbole influences social media users’ interest and intention to read news. Through three laboratory experiments, I find converging evidence that hyperbole has a negative impact on users’ reading intention and behavior, and that this negative effect is mediated by psychological contract violation and interest. These findings suggest that the use of attention-grabbing tactics such as hyperbole have unintended impacts on social media users, and that the prevalent use of hyperbole as a common clickbait strategy is misguided.
CHAPTER THREE: EMOTIONAL AROUSAL AND NEWS READERSHIP IN SOCIAL MEDIA

3.1 INTRODUCTION

News reading is an important activity for social media users (Oh et al., 2022; Sismeiro & Mahmood, 2018). News on social media is typically provided in the form of a news post, which are snippets of full articles from news providers (Dellarocas et al., 2016). Despite controversies related to fake news (Spring, 2020), about one-third of US adults still view news posts on social media (Gramlich, 2021; Walker & Eva Matsa, 2021). This trend may have accelerated in recent years as the number of social media users grew by 10.5% during the COVID-19 pandemic (Kemp, 2020).

News reading on social media platforms is important not only for users, but also for social media platforms and news providers. In addition to increasing user engagement on social media platforms, news reading positively impacts news providers when social media users read full articles on the news providers’ website (Stocking, 2019). Because the print circulation of news has declined drastically in the past few years, news providers are increasingly relying on digital advertising revenues (Barthel, 2019; Grieco, 2020). In 2020, news providers’ digital advertising revenues accounted for 39% of the total revenues, up from 35% in 2019 (Barthel & Worden, 2021). Therefore, news providers depend on traffic from social media platforms to generate advertising revenues.

To entice users to read the full news article, news providers regularly utilize various tactics in the headlines intended to grab social media readers’ attention (Frampton, 2015; Gardiner, 2015).
In particular, enhancing arousal is a commonly used tactic (Gardiner, 2015). For example, “This is unbelievable! I have NEVER seen anything like THIS in my entire life! Wow” (Mukherjee et al., 2022). Arousal is defined as the intensity of emotion expressed in a text (Yin et al., 2017). A basis for the popularity of this practice is evidence that expressed arousal in news headlines increases sharing of news on social media (Berger, 2011; Berger & Milkman, 2012), and a common belief is that news reading and news sharing are similar behaviors. However, recent studies indicate that the antecedents for sharing and reading are different. For instance, Oh et al. (2016) provide evidence that headlines with positive valence drives news sharing whereas headlines with negative valence drives news reading. Similarly, another study that used neuroimaging data indicated that sharing was associated with greater activity in emotion related brain regions while reading was associated with greater activity in value related brain regions (Chan et al., 2022). Thus, the positive relationship between expressed arousal and news sharing may or may not apply to news reading (Gardiner, 2015). Sharing of a news post (which goes viral) may not necessarily lead to revenue for the news publishers unless the articles are read. If the antecedents to sharing and reading were incorrectly assumed to be the same, then the news publishers would be misguided, and they might implement tactics that end up hurting their revenues.

This research explores the following question: How, when and why does expressed arousal in news headlines influence social media users’ reading intention? Based on the Emotions As Social Information (EASI) theory (Van Kleef, 2009), I developed a research model to explain the effect of expressed arousal, and I contextualized news reading on social media using an actor-observer scenario (Yin et al., 2017). In this setting, news providers (actors) may enhance expressed arousal in headlines, and social media users (observers) react to the expressed arousal affectively.
and make inferences (such as the credibility of the news source). In practice, news providers not only vary expressed arousal but they may also withhold information to create an information gap, defined as the gap between what one knows and what one needs to know (Hardy III et al., 2019). Extending EASI, I propose information gap as a boundary condition for the effect of expressed arousal. Therefore, the theoretical model not only proposes affective and inferential processes that may underlie the effects of expressed arousal in news headlines, but also provides a context-specific boundary condition.

I conducted three experiments to test the hypotheses. Results from an initial experiment revealed a negative effect of expressed arousal on reading intention and that this effect was dependent on information gap. Two follow-up experiments revealed that the inferential process through source credibility explains the negative effect of expressed arousal on reading intention when information gap is high. When information gap is low, however, expressed arousal has no effect, and it arises from the existence of competing processes (i.e., source credibility inference and felt arousal) that cancel each other out.

This research makes three contributions to theory. First, the findings complement recent literature attempting to differentiate antecedents of news reading from previously established antecedents of news sharing on social media. Second, the theoretical model highlights the importance of persuasion inferences through source credibility against (and in addition to) the previously documented emotional contagion processes through felt arousal. Finally, I reveal a novel context-specific boundary condition for the impact of expressed arousal and go beyond the exploration of mechanism provided in prior literature. The findings of this essay also contribute to practice. First, this research provides evidence that news providers might lose traffic to their websites if they utilize expressed emotional arousal in their headlines on social media. Second, the
findings from this essay have implications for social media platforms managers to increase user retention on their platforms by modifying the length of social media posts.

3.2 THEORETICAL DEVELOPMENT AND HYPOTHESES

3.2.1 News Reading

Digitization of information has transformed news reading from traditional newspapers to digital platforms such as news websites and social media (Shearer, 2021). Recent events such as the COVID-19 pandemic have accelerated this trend of online news consumption (Savage, 2020). In 2021, US adults spent an average of 1300 hours on social media (Suciu, 2021). Despite controversies related to fake news and user privacy (e.g., Cambridge Analytica scandal) (Auxier, 2020; Granville, 2018), social media platforms remain popular, receiving viewership of more than 325 hours from users (Suciu, 2021) and generating more than 60% of the total advertising revenues among digital platforms in 2020 (Pew Research Center, 2021).

It is not surprising that many news providers attempt to generate advertising revenue on their websites by luring social media users through headlines intended to grab their attention. News consumption on social media is important for news providers (Oh et al., 2022). Social media users who browse news headlines on social media are likely to transition to news providers’ websites to read the full articles. Therefore, many news providers develop “catchy” headlines commonly referred to as “clickbait” (Kadian et al., 2018; Zhang et al., 2020). The popularity of this practice is based on the assumption that users are drawn to and are more likely to click on “clickbait” headlines (Gardiner, 2015). However, there is scant empirical evidence to support this assumption. Furthermore, prior research in this area has focused mostly on developing advanced machine learning methods to detect “clickbait” headlines (Kadian et al., 2018; Shu et al., 2018; Zannettou
et al., 2018). In contrast, little is known about the impact of “clickbait” tactics on news reading on the receiving end.

Three recent lines of inquiries have started to investigate the drivers of news reading on social media. The first line focused on user’s evaluation of source and content credibility (Kim & Dennis, 2019; Kim et al., 2019; Moravec et al., 2020; Moravec et al., 2022). The second line explored the characteristic of news providers’ website, such as user interface, referral channels and paywalls (Bar-Gill et al., 2021; Dellarocas et al., 2016; Oh et al., 2022; Sismeiro & Mahmood, 2018). The third line examined discrete emotions and expressed valence in news headlines (Deng & Chau, 2021; Oh et al., 2022). This research contributes to the third line of inquiry by exploring the role of expressed arousal in news headlines on social media. I focus on expressed arousal because its impact on news reading is assumed to be positive by both practitioners and researchers (Gardiner, 2015), but this assumption has not been empirically validated.

3.2.2 Expressed Arousal

Emotions are generally classified using the dimensions of arousal and valence (Niedenthal, 2008; Russell, 1980). Arousal refers to the degree of activation expressed by an individual, whereas valence refers to the degree to which an individual expresses positive (i.e., pleasant) or negative (i.e., unpleasant) affective states. In the context of news on social media, expressed arousal in news refers to the intensity of emotions embedded in a headline’s text. When communication occurs through text, one cannot observe the actual physiological states of the person expressing emotions; therefore, the writer’s expressed emotions need to be inferred from the text (Yin et al., 2017). Arousal can be expressed in news headlines explicitly through the use of intensifiers (e.g., “very,” “really”) (Harris & Paradice, 2007) or implicitly through the use of capitalization or exclamation marks (Allen, 1988; Schandorf, 2013).
News providers utilize expressed arousal in social media because it increases sharing (Berger, 2011; Berger & Milkman, 2012). However, news sharing and news reading on social media are different behaviors. For example, they are influenced by news valence differently: news with positive valence is shared more whereas news with negative valence is read more on social media (Oh et al., 2022). Therefore, we should not assume that expressed arousal will increase reading because arousal increases sharing. Next, I build on Emotions as Social Information Theory and develop a theoretical model to explain how, why and when expressed arousal influences reading in social media.

### 3.2.3 Emotions as Social Information Theory

Expressed emotional arousal can influence news reading on social media through the competing mechanisms of felt arousal and inferences of source credibility. I build on the theoretical lens of Emotions as Social Information (EASI) theory to explain these competing mechanisms. EASI is a psychological theory that explains the social functions of expressed emotions in an actor-observer setting (Van Kleef, 2009, 2010). According to EASI, emotions expressed by an actor can influence the observer’s behavior through completing mechanisms of affective reactions and inferential processes. That is, when an actor expresses emotions, the observer can react affectively to these expressed emotions and/or the observer can make deliberative inferences to understand why the actor expressed these emotions. EASI also posits that the relative strength of these mechanisms will be moderated by motivation of the observer to understand the actor’s expressed emotions. When the motivation of the observer is high, the mechanism of deliberative inferences will be strengthened, and the mechanism of affective reactions will be weakened. In contrast, when the motivation of the observer is low, the mechanism of affective reactions will be strengthened, and the mechanism of deliberative inferences will be
weakened. I will now describe the affective mechanism using felt arousal, the inferential mechanism using source credibility, and the moderating effect of motivation using information gap.

3.2.4 Felt Arousal

The first mechanism I propose is emotional contagion, whereby expressed arousal in news headlines can positively influence social media users’ felt arousal. In the context of social media, news providers frequently embed emotions in text of news headlines (Deng & Chau, 2021; Mukherjee et al., 2022). When social media users read these headlines, they may react affectively by increasing felt arousal, defined as the intensity of emotions or activation experienced by an individual (Berger, 2011). This process of spreading emotion from one entity to another is commonly referred to as emotional contagion (Hatfield et al., 1993). Emotional contagion is an established phenomenon and has been observed in a variety of settings (e.g., face-to-face interactions, text-based verbal communications) (Goldenberg & Gross, 2020; Peters & Kashima, 2015). A common example of emotional contagion can be seen when a person’s expressed laughter influences others to start laughing as well (Weber & Quiring, 2019).

A higher level of felt arousal should in turn have a positive impact on social media users’ news reading. Higher levels of felt arousal motivate people to take action and perform corresponding behaviors with regard to the focus of their attention (e.g., increased sharing of news, faster response to negotiations) (Berger & Milkman, 2012; Brooks & Schweitzer, 2011). In the case of news on social media, heightened emotional arousal felt by the users should prompt them to perform the action of news reading. Based on the arguments provided above, I propose the following hypothesis.

*Hypothesis 1: Expressed arousal in news headlines has a positive effect on reading intention.*
3.2.5 Source Credibility

Next, I propose that expressed arousal in news headline may also lead readers to make inferences about the news provider’s credibility. According to EASI, when an actor expresses emotions, the observer may make inferences about the actor’s characteristics and intentions (Keltner & Haidt, 1999; Van Kleef, 2009). Expression of emotions in news headline is intended to grab readers’ attention, and this tactic is generally employed by low credibility “tabloid” news providers to persuade users to read articles (Spillane et al., 2020). On the receiving end, people accumulate knowledge about the persuasion tactics, such as emotional arousal, used by others (Friestad & Wright, 1994). The accumulation of this knowledge is referred to as persuasion knowledge (Friestad & Wright, 1994; Kirmani & Zhu, 2007). When people detect the use of a persuasion tactic, it makes them suspicious about ulterior motives of the entity utilizing the tactic (Campbell, 1995; Kirmani & Zhu, 2007). In other words, the recognition of persuasion tactics leads people to doubt the credibility of the source that provided the information (Isaac & Grayson, 2017). Therefore, when people encounter expressed arousal in news posts, it should activate their persuasion knowledge about the news source, leading to inferences of low source credibility.

Lower levels of source credibility should dampen readers’ intention to read the news. Consumers rely on heuristic cues about the provider when making decisions about consuming a product (Gugerty & Link, 2020). In the case of news on social media, people use source credibility as a cue to make judgements about the information from the news provider (Johnson & Kaye, 2015). Evaluation of source credibility helps users make behavioral decision about reading the news articles (Deng & Chau, 2021; Kim & Dennis, 2019). A news provider that is perceived to have high credibility is likely to follow up the news headline with complete and credible information in the news article compared to a news provider that is perceived to have low
credibility. Therefore, source credibility will have a positive impact on social media user’s news reading. Taken together, I propose the following hypothesis.

*Hypothesis 2: Expressed arousal in news headlines has a negative effect on reading intention.*

### 3.2.6 Information Gap

Information gap will moderate the effect of expressed arousal on social media user’s news reading. News providers generally vary the amount of information provided on social media (Blom & Hansen, 2015). They construct headlines to hook potential readers, then wait to reveal key information in the body of the article. This variation creates information gap, defined as the gap between what one knows and what one needs to know (Hardy III et al., 2019). Perceiving an information gap increases the level of effort people are motivated to expend in order to understand the underlying information. EASI refers to this as epistemic motivation (Van Kleef, 2009, 2010). When information gap is high, epistemic motivation increases. As a result, when processing emotional information, people rely on their inferential process more than their affective process (Van Kleef, 2009, 2010). In other words, when information gap is high, people are more deliberate about understanding the information they are consuming, instead of relying on an automatic reaction. Consequently, we expect that when information gap is high, the negative effect of emotional arousal via source credibility will have a larger effect on reading intention, compared to when information gap is low.

*Hypothesis 3: The negative effect of expressed arousal on reading intention is greater for high information gap than for low information gap, such that a) expressed arousal has a negative effect on reading intention for high information gap, and that b) the negative effect of expressed arousal on reading intention for low information gap is weaker or non-existent.*
3.3 METHOD

I conducted three experimental studies to test these hypotheses. Study 1 manipulated expressed arousal and information gap to test the effect of expressed arousal on reading intentions for high and low information gap conditions. In Study 2A I focused on high information gap and explored the competing mechanisms of felt arousal and source credibility. Finally, in Study 2B I focused on low information gap and examined the mechanisms. Table 7 provides details about the relationships and the hypotheses that were examined in these studies.

<table>
<thead>
<tr>
<th>Study</th>
<th>Hypotheses Examined</th>
<th>Relationship Examined</th>
</tr>
</thead>
<tbody>
<tr>
<td>Study 1</td>
<td>Competing Hypotheses H1 vs. H2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>H3a and H3b</td>
<td></td>
</tr>
<tr>
<td>Study 2A</td>
<td>Explored Mechanisms</td>
<td></td>
</tr>
<tr>
<td>Study 2B</td>
<td>Explored Mechanisms</td>
<td></td>
</tr>
</tbody>
</table>

Table 7. Summary of Studies
3.3.1 Study 1

I conducted the first study by manipulating expressed arousal and information gap within-subjects. Each participant was asked to read and evaluate four news posts from social media. I used a within-subjects design because it reflects actual social media usage in which social media users browse one post after the other. Additionally, a within-subjects design increases the salience of manipulated variables.

3.3.1.1 Stimulus

I developed the stimuli by collecting headlines from *Scientific American* magazine. *Scientific American* is one of the oldest monthly published magazines. It publishes scientific articles for the general audience. The headlines I chose were inclusive, such that people of all ages could associate with them. Such generic headlines help reduce the effect of conformation bias that might be present in more polarizing topics (e.g., politics; see Moravec et al. (2020). I utilized capitalized words and exclamation marks to manipulate expressed arousal because they reflect verbal communication of high volume (e.g., shouting) and indicate a high level of arousal (Allen, 1988; Schandorf, 2013; Yin et al., 2017). Specifically, I manipulated expressed arousal by capitalizing the last three words in the headline followed by two exclamation marks (Lee, 2021; Yin et al., 2017). The news post text consisted of a headline and a snippet. The headline introduced the topic, but it did not reveal compete information to the readers. The snippet provided some information about the news. Information gap was manipulated by exclusion of snippet (high information gap) and inclusion of snippet (low information gap) in the social media post. To make the news posts realistic I included images along with the text. The final stimuli headlines and images have been provided in Table 8.
<table>
<thead>
<tr>
<th>Set</th>
<th>Low-Expressed Arousal</th>
<th>High-Expressed Arousal</th>
<th>Images used in Both Arousal Conditions</th>
</tr>
</thead>
</table>
| #1  | Scientists Find That Sparkling Water Can Make You Hungry  
    [Sparkling water may increase the hormone ghrelin that contributes to subjective experience of being hungry] | Scientists Find That Sparkling Water Can MAKE YOU HUNGRY!!  
    [Sparkling water may increase the hormone ghrelin that contributes to subjective experience of being hungry] | ![Image of Sparkling Water](image1.jpg) |
| #2  | Research Study Indicates That Salt Can Make You Gain Weight  
    [Eating a lot of salt can increase sodium levels and cause your body to retain more water, which can show up on the scale as extra pounds] | Research Study Indicates That Salt Can MAKE YOU GAIN WEIGHT!!  
    [Eating a lot of salt can increase sodium levels and cause your body to retain more water, which can show up on the scale as extra pounds] | ![Image of Salt](image2.jpg) |
| #3  | Researchers Show That Spices Can Reduce Your Weight  
    [Spices can speed weight loss by flushing impurities from your body and super-charging your metabolism] | Researchers Show That Spices Can REDUCE YOUR WEIGHT!!  
    [Spices can speed weight loss by flushing impurities from your body and super-charging your metabolism] | ![Image of Spices](image3.jpg) |
Table 8. (Continued)

<table>
<thead>
<tr>
<th>Set</th>
<th>Low-Expressed Arousal</th>
<th>High-Expressed Arousal</th>
<th>Images used in Both Arousal Conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td>#4</td>
<td>Scientific Study Showcases That Corn Oil Can Reduce Your Cholesterol [Corn oil reduces cholesterol much more effectively than olive oil because it contains lower levels of low density lipoproteins]</td>
<td>Scientific Study Showcases That Corn Oil Can REDUCE YOUR CHOLESTEROL!! [Corn oil reduces cholesterol much more effectively than olive oil because it contains lower levels of low density lipoproteins]</td>
<td><img src="image1.jpg" alt="Image" /></td>
</tr>
</tbody>
</table>

3.3.1.2 Procedure

A total of three hundred and fifty-one undergraduate students at a southern U.S. university participated in the study in exchange for course credit. In the cover story, I informed participants that news created by news providers is often provided as news posts on social media platforms. I then asked the participants to evaluate four news posts. The presentation order of the treatments and headlines sets was counterbalanced. Figure 6 provides an example of the news post shown to the participants.

![Image](image2.jpg)

**Figure 6. A Sample News Post for Study 1**
3.3.1.3 Measures

I asked participants to report their intentions to read the news after seeing each news post. I measured intention to read the full article on the news publisher’s website using a seven-point Likert scale, with three items adapted from Chen et al. (2014) (e.g., “How likely would you be to expend effort to read the full article of this news?”). For manipulation checks, I measured expressed arousal using a seven-point semantic differential scale, with three items adapted from Yin et al. (2017) (e.g., “Very passive/ Very active”). I also measured information gap using a 100 point percentage scale, with three items (e.g., “What percentage of the information in the news snippet remains to be discovered?”).

3.3.1.4 Results

First, I conducted a manipulation check for expressed arousal. I used a repeated-measures ANCOVA with expressed arousal as a within-subject factor and the order of headlines as a categorical covariate. Results revealed that perceived arousal in the low expressed arousal condition was significantly lower than that in the high expressed arousal condition ($M = 3.789$ vs. $4.304, F(1, 347) = 48.765, p < 0.001$). Then, I examined effectiveness of the manipulation of information gap by using a repeated-measures ANCOVA with information gap as a within-subject factor and the order of headlines as a categorical covariate. Results indicated that perceived information gap in the low information gap condition was significantly lower than that in the high information gap condition ($M = 54.816$ vs. $60.314, F(1, 347) = 35.598, p < 0.001$).

Next, I examined the main effect of expressed arousal on reading intentions and the moderating effect of information gap. I conducted a repeated-measures ANCOVA with reading intentions as the outcome variable and the order of headlines as a categorical covariate. Results are summarized in Table 9. These results revealed that expressed arousal significantly reduced
reading intentions ($M = 3.066$ vs. $2.853$, $F(1, 347) = 9.348$, $p = 0.002$), supporting H2. The interaction between expressed arousal and information gap was marginally significant ($F(1, 347) = 3.596$, $p = 0.059$). Pairwise comparisons showed that reading intention did not significantly differ between low and high expressed arousal in the low information gap conditions ($M = 3.033$ vs. $2.945$, $F(1, 347) = 0.959$, $p = 0.328$), but the difference in the high information gap conditions was significant ($M = 3.099$ vs. $2.761$, $F(1, 347) = 11.041$, $p < 0.001$). These results provide support for H3a, and H3b.

Table 9. Results from Repeated-Measure ANCOVA in Study 1

<table>
<thead>
<tr>
<th></th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Reading Intentions</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Within-Subjects</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Expressed Arousal</td>
<td>15.889</td>
<td>1</td>
<td>15.889</td>
<td>9.348</td>
<td>.002</td>
</tr>
<tr>
<td>Expressed Arousal × Headline Order</td>
<td>4.674</td>
<td>3</td>
<td>1.558</td>
<td>.917</td>
<td>.433</td>
</tr>
<tr>
<td>Error (Expressed Arousal)</td>
<td>589.776</td>
<td>347</td>
<td>1.700</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Information Gap</td>
<td>1.210</td>
<td>1</td>
<td>1.210</td>
<td>.658</td>
<td>.418</td>
</tr>
<tr>
<td>Information Gap × Headline Order</td>
<td>1.578</td>
<td>3</td>
<td>.526</td>
<td>.286</td>
<td>.836</td>
</tr>
<tr>
<td>Error (Information Gap)</td>
<td>638.427</td>
<td>347</td>
<td>1.840</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Expressed Arousal × Information Gap</td>
<td>5.481</td>
<td>1</td>
<td>5.481</td>
<td>3.596</td>
<td>.059</td>
</tr>
<tr>
<td>Expressed Arousal × Information Gap × Headline Order</td>
<td>6.432</td>
<td>3</td>
<td>2.144</td>
<td>1.407</td>
<td>.241</td>
</tr>
<tr>
<td>Error (Expressed Arousal × Information Gap)</td>
<td>528.913</td>
<td>347</td>
<td>1.524</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Between-Subjects</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Headline Order</td>
<td>29.718</td>
<td>3</td>
<td>9.906</td>
<td>1.156</td>
<td>.327</td>
</tr>
<tr>
<td>Error</td>
<td>2973.440</td>
<td>347</td>
<td>8.569</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

3.3.1.5 Discussion

The first study showed that expressed arousal negatively impacts reading intentions. I also provided evidence that information gap moderates this relationship, such that expressed arousal reduces reading intention for high information gap but not for low information gap. However, this
study has several limitations. First, I used images along with the headline in the stimuli. These images might distract subjects’ attention away from the news post headline with manipulated expressed arousal. Moreover, the images may also differ in their capability to activate felt arousal which can bring in confounds that might be difficult to control. Therefore, in the next studies I did not use images in the stimuli. Second, this study did not explore the mechanism through which expressed arousal influences reading intentions. Therefore, in the next studies I measured the mechanisms of felt arousal and source credibility.

3.3.2 Study 2A and 2B

The purpose of Study 2A was to examine the negative effect of expressed arousal on reading intentions when information gap is high. Study 2B was conducted to examine the null effect of reading intentions when information gap is low. I also explored the mechanisms of felt arousal and source credibility in both studies.

3.3.2.1 Stimulus

I developed stimuli for this study by utilizing headlines from Study 1 (see Figure 7 for sample stimuli). I only used headlines for the high information gap condition. That is, I used headlines that have high information gap for both low and high arousal conditions. I included an additional exclamation mark, in Study 2A and 2B, to strengthen the manipulation of expressed arousal. For Study 2A, I only presented the news headlines. In contrast, for Study 2B I presented the news headlines along with the snippet.
3.3.2.2 Procedure

One hundred seventy-two undergraduate students from a southern U.S. university participated in exchange for course credit for Study 2A and one hundred seventy-one participants were recruited from Amazon Mechanical Turk for Study 2B. The cover story was identical to the one used in Study 1. However, in these studies I asked participants to evaluate two news posts instead of four. I used two news posts because I was only manipulating expressed arousal at two levels. Expressed arousal and reading intention were measured using the same scales as in Study 1. Felt arousal was measured on seven-point semantic differential scale, using three items adapted from Yin et al. (2017) (e.g., “Very passive/ Very active”). Source credibility was measured on a seven-point Likert scale, using three items adapted from Bhattacherjee and Sanford (2006) (e.g., “The source of the news seems trustworthy”).

3.3.2.3 Results

I examined the manipulation check for expressed arousal using a repeated-measures ANCOVA with expressed arousal as a within-subject factor and the order of headlines as a categorical covariate. Results from Study 2A showed that perceived arousal in the low expressed arousal condition was significantly lower than that in the high expressed arousal condition ($M = 3.637$ vs. $4.807$, $F(1, 170) = 66.639$, $p < 0.001$). Results from Study 2B indicated that perceived arousal in the low expressed arousal condition was significantly lower than that in the high
expressed arousal condition \((M = 3.448 \text{ vs. } 4.737, F(1, 169) = 58.898, p < 0.001)\) suggesting that the manipulation was successful in both studies.

Next, I tested the main effect of expressed arousal on reading intention, and I conducted a repeated-measures ANCOVA with reading intentions as the outcome variable and the order of headlines as a categorical covariate. Results are provided in Table 10. The results from Study 2A revealed that expressed arousal significantly reduced reading intentions \((M = 3.376 \text{ vs. } 3.033, F(1, 170) = 5.121, p = 0.025)\), supporting H2. Results from Study 2B indicated that arousal had a non-significant impact on reading intentions \((M = 3.746 \text{ vs. } 3.735, F(1, 169) = 0.005, p = 0.944)\). These results are provided in Table 11.

To examine the mediating role of felt arousal and source credibility, I conducted a parallel mediation analysis using the SPSS macro MEMORE (Montoya & Hayes, 2017). This bootstrapping method is more efficient in testing mediation in a within-subjects design compared to step-by-step approach provided by Judd et al. (2001). I used percentile bootstrap confidence interval method with 5000 samples. The results from Study 2A showed that expressed arousal had a negative effect on source credibility \((\beta = -0.386, t(171) = -3.503, p = 0.001)\), and source credibility had a positive effect on reading intention \((\beta = 0.439, t(171) = 4.364, p = 0.000)\). The indirect effect through source credibility was negative and significant \((a*b \text{ path coefficient } = -0.169, 95\% \text{ CI } = [-0.312, -0.053])\). In contrast, expressed arousal had a positive effect on felt arousal \((\beta = 0.550, t(171) = 3.614, p = 0.000)\), and felt arousal had a marginally significant positive effect on reading intention \((\beta = 0.138, t(171) = 1.875, p = 0.063)\). The indirect effect through felt arousal was not significant at 95% CI \((a*b \text{ path coefficient } = 0.076, 95\% \text{ CI } = [-0.032, 0.165])\) or 90% CI \((a*b \text{ path coefficient } = 0.076, 95\% \text{ CI } = [-0.012, 0.149])\). The effect size for the indirect
effect of source credibility was about two times greater than that of felt arousal. Therefore, these results provide support for H3a.

I conducted a similar mediation analysis for Study 2B because competing mechanisms could cancel each other out and explain the non-significant main effect of expressed arousal on reading intentions (Hayes, 2009; Lei et al., 2021). The mediation analysis revealed that expressed arousal had a negative effect on source credibility ($\beta = -0.349$, $t(170) = -3.074$, $p = 0.002$), and source credibility had a positive effect on reading intentions ($\beta = 0.450$, $t(170) = 5.008$, $p = 0.000$). The indirect effect through source credibility was negative and significant ($a*b$ path coefficient = -0.157, 95% CI = [-0.296, -0.052]). In contrast, expressed arousal had a positive effect on felt arousal ($\beta = 0.294$, $t(170) = 2.246$, $p = 0.026$), and felt arousal had a positive effect on reading intentions ($\beta = 0.576$, $t(170) = 7.443$, $p = 0.000$). The indirect effect through felt arousal was positive and significant ($a*b$ path coefficient = 0.170, 95% CI = [0.015, 0.328]). Therefore, these results provide support for H3b. The mediation results for Study 2A and 2B are provided in Figure 8.

Table 10. Results from Repeated-Measure ANCOVA in Study 2A

<table>
<thead>
<tr>
<th></th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Reading Intentions</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Within-Subjects</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Expressed Arousal</td>
<td>10.122</td>
<td>1</td>
<td>10.122</td>
<td>5.121</td>
<td>.025</td>
</tr>
<tr>
<td>Expressed Arousal × Headline Order</td>
<td>.513</td>
<td>1</td>
<td>.513</td>
<td>.260</td>
<td>.611</td>
</tr>
<tr>
<td>Error (Expressed Arousal)</td>
<td>336.030</td>
<td>170</td>
<td>1.977</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Between-Subjects</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Headline Order</td>
<td>.545</td>
<td>1</td>
<td>.545</td>
<td>.123</td>
<td>.726</td>
</tr>
<tr>
<td>Error</td>
<td>753.494</td>
<td>170</td>
<td>4.432</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 11. Results from Repeated-Measure ANCOVA in Study 2B

<table>
<thead>
<tr>
<th></th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Reading Intentions</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Within-Subjects</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Expressed Arousal</td>
<td>.011</td>
<td>1</td>
<td>.011</td>
<td>.005</td>
<td>.944</td>
</tr>
<tr>
<td>Expressed Arousal × Headline Order</td>
<td>.011</td>
<td>1</td>
<td>.011</td>
<td>.005</td>
<td>.944</td>
</tr>
<tr>
<td>Error (Expressed Arousal)</td>
<td>369.978</td>
<td>169</td>
<td>2.189</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between-Subjects</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Headline Order</td>
<td>3.847</td>
<td>1</td>
<td>3.847</td>
<td>.692</td>
<td>.407</td>
</tr>
<tr>
<td>Error</td>
<td>939.185</td>
<td>169</td>
<td>5.557</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Figure 8. Mediation Results of Reading Intentions in Studies 2A and 2B

Notes: * for p < 0.05, ** for p < 0.01, and *** for p < 0.001

3.4 GENERAL DISCUSSION

Three studies provided converging evidence that expressed arousal negatively influences reading intentions, and that this effect is stronger for high information gap compared to low information gap (see Table 12 for a summary of findings). Study 1 provided evidence for the main effect of expressed arousal on reading intentions and the impact of information gap on this relationship. Study 2A provided evidence for the negative mechanism of source credibility. Finally, the results of Study 2B explained the non-significant effect of expressed arousal through competing mechanisms of source credibility and felt arousal.
Table 12. Summary of Findings

<table>
<thead>
<tr>
<th>Hypotheses</th>
<th>Study 1</th>
<th>Study 2A</th>
<th>Study 2B</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Hypothesis 1:</strong> Expressed arousal in news headlines has a positive effect on reading intention.</td>
<td>Not supported</td>
<td>Not supported</td>
<td>Not supported</td>
</tr>
<tr>
<td><strong>Hypothesis 2:</strong> Expressed arousal in news headlines has a negative effect on reading intention.</td>
<td>Supported</td>
<td>Supported</td>
<td>Not supported</td>
</tr>
<tr>
<td><strong>Hypothesis 3:</strong> The negative effect of expressed arousal on reading intention is greater for high information gap than for low information gap, such that a) expressed arousal has a negative effect on reading intention for high information gap, and that b) the negative effect of expressed arousal on reading intention for low information gap is weaker or non-existent.</td>
<td>Supported</td>
<td>Supported (Only H3a)</td>
<td>Supported (Only H3b)</td>
</tr>
</tbody>
</table>

3.4.1 Theoretical Implications

This research makes three key contributions. First, the findings contribute to the literature on social media user behaviors (e.g., reading, sharing). Previous literature on social media behaviors assumes a positive relationship with expressed arousal because arousal increases sharing (Berger, 2011; Berger & Milkman, 2012). However, user behaviors on social media are not constrained to sharing. This research focuses on reading, which is another important element of user behavior on social media and challenges the commonly held belief that emotionally arousing headlines increase news readership on social media (Gardiner, 2015). Contemporary literature bundles social media user behaviors without explicating the differences between them or how these behaviors are influenced by the same of different mechanisms (Kim & Dennis, 2019; Kim et al., 2019; Moravec et al., 2020; Oh et al., 2022). This research highlights the importance of focusing on individual behaviors because antecedents of these behaviors can be different (Oh et al., 2022).
Second, this research contributes to the emerging literature on emotional expressions in social media. Traditionally, emotions are characterized using the core dimensions of valence and arousal (Niedenthal, 2008; Russell, 1980). While both dimensions are important, IS scholars have primarily focused on examining valence and its effect on readership (Aggarwal et al., 2012; Oh et al., 2022; Singh et al., 2014). This research explores arousal which is a relatively less studied dimension of emotion. One exception is the recent study by Deng and Chau (2021), who explore the negatively valenced discrete emotions of anger and sadness that differ in arousal. I think that by focusing on a fundamental dimension of emotion these findings can be applied to a range of discrete emotions. Furthermore, this research captures the nuanced impact of expressed arousal through competing pathways and highlights the importance of persuasion inferences through source credibility against the previously documented social contagion process through felt arousal (Berger, 2011)

Third, I explore a context-specific boundary condition of information gap for the impact of expressed arousal. Understanding this boundary condition is important because news providers frequently use emotional arousal in headlines and vary information gap in the news on social media. Consequently, the social media user’s intention to read is driven by the interaction of arousal and information gap. These findings suggest that the effect of expressed arousal can be shut off when the information gap is low. Prior literature on emotional arousal has primarily focused on understanding the mechanisms. For instance, Deng and Chau (2021) explained the impact of discrete emotions on news readership through perceived author effort. Similarly, Berger (2011) provided evidence that users share news because of felt arousal. This research goes beyond mechanisms and provides a boundary condition for the impact of expressed arousal in the news context.
3.4.2 Practical Implications

First, the findings of this essay speak to the practice of attention-grabbing headlines on social media. Several content producers recommend use of expressed arousal in news headlines (Gardiner, 2015; Hayha, 2021), but the findings from this essay highlight that such recommendations may rely on untested assumptions. That is, expressed arousal in news headlines can reduce news readership. Therefore, news providers and content producers may need to think about the tradeoff of utilizing emotional expressions in headlines on social media. On one hand, emotional arousal can increase sharing of news (Berger, 2011). While on the other hand emotional arousal can reduce news readership, as shown in the study.

Second, the findings can help social media managers improve user experience on their platforms. Social media platforms provide varying amounts of characters for writing posts. For instance, Twitter allows 280 characters while Facebook allows 63,206 characters in a post (Shleyner, 2018). The results highlight that reducing information gap (i.e., providing relevant information along with a headline) can counter the negative impact of expressed arousal. Therefore, social media platforms might provide separate space for headlines and corresponding snippet, allowing news providers to highlight the main topic and provide complete information to the social media users.

3.4.3 Future Research

This research opens up several opportunities for future research. First, future research can examine user’s news consumption behavior after they have decided to read the full article. The research explains how, why and when emotional arousal influences social media users’ behavioral intentions to read the news article. Future research can build on this study and explore users’ news consumption behavior on news providers websites. Understanding the downstream information
consumption impacts of using emotions in headlines can reveal important mechanisms that can complement contemporary research that indicates the importance of emotion dynamics (e.g., volatility in valence) (Berger et al., 2021) and information previews (Choi et al., 2019).

Second, this research does not focus on fake news or phishing, although fake news and phishing have been associated with attention-grabbing headlines (Kim & Dennis, 2019; Kim et al., 2019; Tian & Jensen, 2019). Users believe fake news headlines because they consume information on social media using a hedonic mindset (Moravec et al., 2020; Pennycook et al., 2020). However, attention-grabbing headlines are more likely to be remembered (Kronrod & Danziger, 2013). Therefore, understanding the consequences of using attention-grabbing tactics in fake news calls for more research.

Third, future studies can explore the effect of expressed arousal in different contexts on social media. The findings reveal that emotional arousal is not welcome in news readership on social media. However, there could be contexts in which emotion is appropriate. For instance, emotional arousal is frequently employed in user generated content on video sharing platforms like YouTube. Many YouTubers and content generators vouch for the attention-grabbing clickbait headlines (Nimmin, 2017). However, the lack of empirical evidence to support the use of expressed arousal makes YouTube a fertile space for future research.

3.4.4 Conclusion

News consumption on social media plays a very important role for news providers. Therefore, it is important to understand the role of emotional expressions in social media. This research explores how, when and why expressed arousal influences news readership in social media. I hypothesized competing mechanisms to explain the impact of expressed arousal on news readership. In addition, I also explored a context specific boundary condition for the underlying
mechanisms. The study highlights the importance of studying emotional expressions in social media and opens up interesting avenues for future research.
CHAPTER FOUR: CONTRIBUTIONS, AND FUTURE RESEARCH

4.1 INTRODUCTION

My dissertation examines the impact of attention-grabbing tactics on news reading on social media. Digitization has drastically changed how we consume news. The decline in newspaper circulation and non-digital advertising revenues indicates that people have shifted from newspapers to digital platforms for news consumption (Barthel, 2019; Grieco, 2020). Among digital platforms, revenues for social media platforms are increasing. For instance, Facebook generated about 40% of the total digital advertising revenues in 2018 and about 45% in 2020 (Barthel, 2019, 2021; Grieco, 2020). Social media platforms serve as one of the most important digital platforms since more than half of the US adult population still follows news on social media platforms (Shearer & Mitchell, 2021).

Social media platforms act as information intermediaries and allow news providers to post news headlines on social media platforms. These news providers face a lot of competition on social media platforms. To get users from social media platforms to the news websites, news providers compete not only with other news providers but also with social media activities (e.g., friends reactions, messages, online reviews). Therefore, many news providers utilize attention-grabbing tactics to increase news readership (Zhang et al., 2020). However, there is scant evidence to support the practice of using attention-grabbing tactics.

My dissertation challenges the assumption that attention-grabbing tactics always work and increase news readership. I examine the most frequently used attention-grabbing tactics such as hyperbole and emotional arousal and provide evidence that the use of such attention-grabbing
tactics can actually backfire and reduce news readership. Through multiple lab experiments, I showcase why and how hyperbole and expressed arousal reduce news reading on social media.

4.2 CONTRIBUTIONS

4.2.1 Theoretical Implications for IS Research

This dissertation makes several theoretical contributions. First, this dissertation shifts the focus of research from news sharing to news reading and contributes to the emerging literature on news consumption in IS. Prior IS research on news sharing explains the destructive effects of fake news on social media platforms (e.g., Kim & Dennis, 2019; Kim et al., 2019; Moravec et al., 2020). However, research on news reading is equally important because it is one of the most important sources of revenue for the news providers (Stocking, 2019). Acknowledging the importance of news consumption for news providers, recent IS literature has examined the antecedents of news reading intention and behaviors (Dellarocas et al., 2016; Oh et al., 2022). These investigations are important because sharing and reading are driven by different antecedents (Oh et al., 2022). My dissertation contributes to the growing news consumption literature in IS and examines the role of news headline content that is within the complete control of the news providers.

Second, this dissertation contributes to IS literature by revealing the context dependent nature of attention-grabbing tactics in news readership on social media. Hyperbole has been used in advertising because it increases product liking and buying intentions through the mechanism of humor (Stern & Callister, 2020). However, this dissertation reveals that when used as an attention-grabbing tactic on social media, hyperbole has a negative impact on news reading. Therefore, it is important to understand the context dependent nature of hyperbole. My dissertation goes beyond just establishing the main effect and reveals the context dependent mechanism of psychological contract violation that explains how hyperbole reduces news reading. The theoretical framework
provided in Chapter 2 highlights the importance of understanding users’ expectations of news on social media. The research framework draws on expectation violation theory and integrates the positive mechanism of perceived humor from prior literature and the context dependent negative mechanism of psychological contract violation. Chapter 2 reveals the importance of understanding context dependent norms that influence social media users reading intention and behavior.

Third, the dissertation highlights the role of expressed emotional arousal in news reading on social media. Among the two dimensions of emotions, IS scholars have primarily focused on the dimension of valence and its impact on social media behaviors (Aggarwal et al., 2012; Oh et al., 2022; Singh et al., 2014). Chapter 3 of the dissertation examines arousal that is a relatively less studied dimension of emotion in IS (Deng & Chau, 2021). I reveal the impact of expressed arousal on news reading through the competing mechanisms of felt arousal and source credibility and highlight the importance of persuasion inferences against the previously documented emotional contagion processes (Berger, 2011). In Chapter 3, I go beyond exploring mechanisms and examine the context dependent moderating role of information-gap. In summary, I explain the nuanced role of arousal on news reading on social media by developing a theoretical framework using emotions as social information theory to explain the mechanisms and establish a novel boundary condition.

4.2.2 Practical Implications

4.2.2.1 Practical Implications for News Provider Websites

News providers utilize attention-grabbing tactics to get users from social media platforms to their news websites for generating ad revenues. However, this practice may not always deliver the intended outcome for the news providers. Through my dissertation chapters, I inform practice about the context dependent nature of hyperbole. First, news providers may benefit by providing users with more objective headlines. Findings from Chapter 2 of the dissertation reveal that
hyperbole has a negative impact on news reading because the use of hyperbole in a news headline violates the psychological contract users have with the news providers. Users may expect news providers to provide objective headlines (Calcutt & Hammond, 2011; Schudson, 1981). However, when news providers resort to using hyperbole as an attention-grabbing tactic, users might perceive this act as a psychological contract violation with the news provider. This psychological contract violation will have a negative impact on users’ news reading intention and behavior. Therefore, news providers can provide objective news to the users to increase news readership.

Second, news providers may have to think about the trade-off between news reading and news sharing when they use arousal in news headlines on social media. On the one hand, arousal might increase sharing of news through the automatic process in which arousal expressed in the news headlines increases users felt arousal and sharing (Berger, 2011). On the other hand, arousal can reduce news readership, as shown in Chapter 3 of this dissertation. If the news providers would like to reach broader audiences on social media, then using arousal in a news headline might be beneficial. However, if the news providers care more about generating advertising revenues by getting users from social media platforms to their news websites, then using arousal in a news headline might backfire.

4.2.2.2 Practical Implications for Social Media Platforms

This research has implications for social media platforms as well. First, social media platforms can improve user engagement by focusing on news headline content. Social media platforms utilize algorithms to manage content and improve user engagement on their platforms. These algorithms are used to rank news posts on the social media users’ news feeds (Backstrom, 2013; Jahr, 2016). Findings from Chapter 2 indicate that news headlines with hyperbole have a negative impact on social media users’ engagement. Therefore, social media platforms can tweak
their algorithms to give more weight to objective and factual news headlines to improve user engagement. In addition, social media platforms can develop guidelines to inform news providers and content creators about the unintended consequences of using attention-grabbing tactics on social media. These guidelines can improve user engagement on social media and help news providers and content creators reach their intended audience.

Second, findings from this dissertation can help social media platforms manage user attrition. Different social media platforms employ different social media post lengths. For instance, Twitter allows 280 characters while Facebook allows 63,206 characters in a post (Shleyner, 2018). Social media platforms might utilize the post lengths to increase information gap for the social media users. High information gap will increase information processing motivation of the users and make them think deliberatively about the news headline. Consequently when a news provider resorts to using emotional arousal in a news headline, it will reduce users reading. Therefore, social media platforms might be able to keep the users on their platforms by modifying the length requirement of social media posts.

4.3 FUTURE RESEARCH

This dissertation opens many avenues and opportunities for future research. First, I only focus on two of the most important types of attention-grabbing tactics in this dissertation. Future research might examine the impact of other important and frequently used attention-grabbing tactics. For instance, news providers frequently create news headlines with information gap, defined as the gap between what one knows and what one needs to know (Hardy III et al. 2019). This practice of using information-gap relies on the assumption that information gap always generates curiosity and increases news readership. However, there is a lack of empirical evidence to support this assumption in the context of social media. Information gap is a frequently used
attention-grabbing tactic on social media (Lagerwerf et al., 2016) and can influence news reading through competing mechanisms. On the one hand, information gap can generate curiosity and increase social media users’ propensity to read the full article on the news provider’s website. On the other hand, information gap can activate users’ persuasion knowledge and reduce news reading on social media. Users may perceive use of information gap in news as an attempt to persuade them to read the news (Lagerwerf et al., 2016). Prior marketing literature indicates that consumers accumulate knowledge and form theories about the persuasion tactics used by service providers (Friestad & Wright, 1994). The accumulation of this knowledge is known as persuasion knowledge (Friestad & Wright, 1994; Kirmani & Zhu, 2007). Activation of persuasion knowledge can make users suspicious about the ulterior motives of the service provider (Campbell, 1995; Kirmani & Zhu, 2007). In the context of news on social media, information gap in a news headline is more likely to activate social media users’ persuasion knowledge. Consequently, social media users are likely to perceive news providers’ manipulative intent and will be less likely to read the full articles on the news providers website.

Future research can also explore user behavior on news providers’ websites. My dissertation examines the mechanisms and boundary conditions that explain user’s news reading intentions and behaviors on social media platforms. However, there is a lack of understanding on how users might consume information on the news providers websites. For instance, social media users may select the news that they would like to read and move from the social media platform to the news provider’s website to read the full article. Once these users reach the news provider’s website, they might either focus their attention on the specific article (exploitation) or they might read other news headlines on the news website (exploration). Recent literature suggests that information consumption might be driven by different motivations based on users long-term
interest and urges (Dan et al., 2020). Therefore, future research can examine these diverging news consumption behaviors.
REFERENCES


Gardiner, B. (2015, Accessed March 31, 2022). You'll be outraged at how easy it was to get you to click on this headline. *Wired Magazine.* [https://www.wired.com/2015/12/psychology-of-clickbait/](https://www.wired.com/2015/12/psychology-of-clickbait/)


https://www.nytimes.com/2018/03/19/technology/facebook-cambridge-analytica-explained.html


https://medium.com/the-brave-writer/how-to-create-emotional-headlines-for-your-next-posts-82666a120bf7


# APPENDIX A: A LITERATURE REVIEW ON NEWS CONSUMPTION IN INFORMATION SYSTEMS RESEARCH

## APPENDIX A.1 LITERATURE REVIEW TABLE

<table>
<thead>
<tr>
<th>Research</th>
<th>Study/Theory</th>
<th>Method/Constructs</th>
<th>Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dellarocas et al. (2016)</td>
<td><strong>Study:</strong> Studied the effect of news aggregators design parameters (e.g., length of news snippet) on news consumption on news providers website</td>
<td><strong>Context:</strong> News consumption on news providers website through news aggregator <strong>Theory:</strong> Information foraging theory and choice overload theory</td>
<td><strong>Method:</strong> Field experiment <strong>DV:</strong> Probability that a user will click to read the full article on news providers website <strong>Findings:</strong> Increasing length of news posts reduces probability that a user will read the full article on the news providers website</td>
</tr>
<tr>
<td>Oh et al. (2016)</td>
<td><strong>Study:</strong> Studied the effect of paywall on news providers website on social media sharing and news website visits</td>
<td><strong>Context:</strong> News website paywall, news WoM on social media and consumption of news on providers website</td>
<td><strong>Method:</strong> Difference-in-differences model analysis of natural experiment <strong>DV:</strong> News sharing on social media and number of visits to the news providers website <strong>Findings:</strong> Paywall on news provider’s website has a negative impact on social media news sharing. Furthermore, paywall negatively moderates the effect of news sharing on social media and news readership on the news providers website</td>
</tr>
</tbody>
</table>
### APPENDIX A.1 (Continued)

<table>
<thead>
<tr>
<th>Research</th>
<th>Study/Theory</th>
<th>Method/Constructs</th>
<th>Findings</th>
</tr>
</thead>
</table>
| Sismeiro and Mahmood (2018) | **Study:** Examined the effect of social media outage on news providers website page visits  
**Context:** News consumption on news providers website through social media | **Method:** Regression analysis of natural experiment  
**DV:** News website page views during and after outage of social media platform | Social media platforms have a complimentary effect on news consumption on news websites. Outage of social media resulted in loss of about $2000 per hour for the news provider |
| Kim and Dennis (2019) | **Study:** Examined the effect of information presentation format and source information in social media posts on news believability and social media behaviors  
**Context:** News presentation and credibility on social media  
**Theory:** Cognitive dissonance theory | **Method:** Online experiments  
**IV:** Presentation format (headline primacy, source primacy) and source rating  
**DV:** News believability and social media user behaviors | News posts from unknown sources with low ratings had a negative impact on news believability. Additionally, believability positively influenced reading of articles on the news providers website |
| Kim et al. (2019) | **Study:** Examined the effect of social media posts ratings on news believability and social media behaviors  
**Context:** News credibility on social media  
**Theory:** Reputation theory and cognitive dissonance theory | **Method:** Two online experiments  
**IV:** Expert rating, user article rating and user source rating  
**DV:** News believability, and social media user behaviors | Low expert and user article ratings negatively influenced believability of social media posts. Furthermore, social media posts that are believed are more likely to influence reading of full article on the news providers website |
APPENDIX A.1 (Continued)

<table>
<thead>
<tr>
<th>Research</th>
<th>Study/Theory</th>
<th>Method/Constructs</th>
<th>Findings</th>
</tr>
</thead>
</table>
| Moravec et al. (2020) | Study: Examined the effect of fact-checking interventions on news believability and social media behaviors  
Context: Fact-checking news on social media  
Theory: Cognitive dissonance theory | Method: Three online experiments  
IV: Fact checking interventions designed for system 1 (intuitive), system 2 (deliberative) and combination of the two  
DV: News believability and social media user behaviors | Fact-checking interventions designed for system 1 and system 2 as well as the combination of the two are effective in reducing believability of fake news posts. Furthermore, believability positively influenced reading of full articles on the news providers website |

| Bar-Gill et al. (2021) | Study: Examined the effect of social vs nonsocial referral of news headlines on news consumption on news providers website  
Context: News consumption on news providers website through social media and email service | Method: Field experiment and regression analysis of archival data  
DV: Number of articles accessed, and time spend in a visit to the news providers website | Social media increases selective consumption of news such that users read fewer articles but have higher reading completion rates on the news providers website |

| Deng and Chau (2021) | Study: Examined the effect of expressed anger and sadness in news headlines on news believability and social media behaviors  
Context: Fake news on social media  
Theory: Emotions as social information and appraisal-tendency framework | Method: Two online experiments  
IV: Expressed anger and sadness in social media news posts  
DV: News believability and social media user behaviors  
Mediator: Perceived author’s cognitive effort | Expressed anger in social media headlines has a negative impact on news believability and this effect is mediated by perceived author’s cognitive effort. In contrast, expressed sadness does not impact news believability. Finally, believability positively impacts social media users’ intention to read article on the news providers website |
<table>
<thead>
<tr>
<th>Research</th>
<th>Study/Theory</th>
<th>Method/Constructs</th>
<th>Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oh et al. (2022)</td>
<td><strong>Study:</strong> Examined the effect of news headline and article sentiment on social media sharing and news consumption on providers website <strong>Context:</strong> News sentiment, news sharing on social media and consumption of news providers website</td>
<td><strong>Method:</strong> Simultaneous equation model <strong>DV:</strong> News sharing volume on social media and visits to the news providers website</td>
<td>Headlines sentiment is negatively associated with news readership on the news providers platform such that one-unit increase in headline sentiment is associated with a 10.86% decrease in page views on the news provider’s website</td>
</tr>
</tbody>
</table>
APPENDIX B: APPENDIX FOR CHAPTER TWO

APPENDIX B.1 DEMOGRAPHIC TABLE

<table>
<thead>
<tr>
<th>Study #</th>
<th>Sample</th>
<th># of Participants</th>
<th># of Male Participants</th>
<th>Participants Originally from US (%)</th>
<th>Average Age</th>
<th>Participants Achieved/Achieving Bachelor’s Degree or (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Study 1</td>
<td>Students</td>
<td>192</td>
<td>111</td>
<td>81.77%</td>
<td>20</td>
<td>100%</td>
</tr>
<tr>
<td>Study 2</td>
<td>MTurk</td>
<td>94</td>
<td>37</td>
<td>96.80%</td>
<td>45</td>
<td>88.29%</td>
</tr>
<tr>
<td>Study 3</td>
<td>MTurk</td>
<td>81</td>
<td>37</td>
<td>98.76%</td>
<td>39</td>
<td>87.65%</td>
</tr>
</tbody>
</table>

APPENDIX B.2 VARIABLES MEASURED IN STUDIES 1-3

Participants rated the items on a seven-point Likert scale, ranging from 1 (“strongly disagree”) to 7 (“strongly agree”), except where indicated.

Reading intentions: (Chen et al., 2014) (used in Studies 1 and 2)

Imagine you have 30 minutes of spare time to read some news articles. How likely would you be to

- Read the full article of this news?
- Expend effort to read the full article of this news?
- Check out what the full article of this news says?

Interest (Silvia, 2005) (used in Study 1)

Please indicate the extent to which you agree or disagree with the following statements.

- I found this news post interesting
- I thought this news post was boring (reverse coded)
• I would be interested in reading other news posts by this author

*Interest* (Silvia, 2005) (used in Study 2)

Please indicate the extent to which you agree or disagree with the following statements.

• I found this news post interesting
• I would be interested in the topic of this news post
• I thought this news post was boring (reverse coded)

*Perceived humor* (Warren & McGraw, 2013) (used in Study 2)

Overall, how would you describe the feelings expressed in this news post?

• Not at all humorous / Very humorous
• Not at all funny / Very funny
• Not at all amusing / Very amusing

*Psychological contract violation* (Wang & Wang, 2019) (used in Study 2)

Please indicate the extent to which you agree or disagree with the following statements.

• The news' author failed to meet its obligations to you
• The news' author did a good job of meeting its obligations to you (reverse coded)
• The news' author fulfilled most important obligations to you (reverse coded)

*Hyperbole* (Callister & Stern, 2007; Huang, 2020) (used in Studies 1 and 2)

In your opinion how exaggerated is the information in the news post?

• Not exaggerated at all / Highly exaggerated
• Does not contain any exaggeration / Contains a lot of exaggeration
• Can be taken literally / Can be taken figuratively
**Reading behavior** (used in Study 3)

Imagine, that you have only 5 minutes to read a news article. Because of this time constraint you will have to decide and select only ONE news post to read the full article.

**APPENDIX B.3 SUMMARY STATISTICS**

**Table B.3.1 Summary Statistics Study 1**

<table>
<thead>
<tr>
<th>Variables</th>
<th>Hyperbole Absent</th>
<th>Hyperbole Present</th>
<th>Cronbach’s α</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reading Intentions</td>
<td>3.638 (1.816)</td>
<td>3.189 (1.910)</td>
<td>.959</td>
</tr>
<tr>
<td>Interest</td>
<td>3.765 (1.41)</td>
<td>3.309 (1.407)</td>
<td>.782</td>
</tr>
</tbody>
</table>

**Table B.3.2 Summary Statistics Study 2**

<table>
<thead>
<tr>
<th>Variables</th>
<th>Hyperbole Absent</th>
<th>Hyperbole Present</th>
<th>Cronbach’s α</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reading Intentions</td>
<td>3.659 (1.891)</td>
<td>2.840 (1.988)</td>
<td>.987</td>
</tr>
<tr>
<td>Interest</td>
<td>4.148 (1.832)</td>
<td>3.255 (1.829)</td>
<td>.909</td>
</tr>
<tr>
<td>Perceived Humor</td>
<td>2.017 (1.421)</td>
<td>2.613 (1.812)</td>
<td>.961</td>
</tr>
<tr>
<td>Psychological Contract Violation</td>
<td>3.606 (1.234)</td>
<td>4.141 (1.428)</td>
<td>.840</td>
</tr>
</tbody>
</table>

**APPENDIX B.4 SERIAL MEDIATION ANALYSIS WITH HUMOR AND PSYCHOLOGICAL CONTRACT VIOLATION**

I conducted additional mediational analysis to rule out alternate explanations. In the analysis, I included humor and psychological contract violation as serial mediators. The results for the impact of hyperbole on interest through humor and psychological contract violation showed that hyperbole had a positive effect on humor ($\beta = 0.596$, $t(93) = 3.812$, $p < 0.001$), but humor had a non-significant effect on psychological contract violation ($\beta = 0.177$, $t(93) = 1.927$, $p = 0.057$). Psychological contract violation had a negative effect on interest ($\beta = -0.696$, $t(93) = -4.661$, $p < 0.001$). The indirect effect through humor and psychological contract violation sequentially was not significant ($a*b$ path coefficient $= -0.074$, 95% CI $= [-0.221, 0.026]$). The
mediation analysis also showed that the direct effect of hyperbole on interest was significant (c’ path coefficient = -0.564, 95% CI = [-0.990, -0.139]) (see Figure B.4.1.). Therefore, results from this mediation analysis suggest that the impact of hyperbole on psychological contract violation is unlikely to be mediated by perceived humor.

Notes: * for p < 0.05, ** for p < 0.01, and *** for p < 0.001

**Figure B.4.1 Mediation Results of Interest in Study 2**
APPENDIX C: APPENDIX FOR CHAPTER THREE

APPENDIX C.1 DEMOGRAPHIC TABLE

<table>
<thead>
<tr>
<th>Study #</th>
<th>Sample</th>
<th># of Participants</th>
<th># of Male Participants</th>
<th>Participants Originally from US (%)</th>
<th>Average Age</th>
<th>Participants Achieved/Achieving Bachelor’s Degree or (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Study 1</td>
<td>Students</td>
<td>351</td>
<td>195</td>
<td>73.78%</td>
<td>19.88</td>
<td>100%</td>
</tr>
<tr>
<td>Study 2A</td>
<td>Students</td>
<td>172</td>
<td>65</td>
<td>68.60%</td>
<td>22.34</td>
<td>100%</td>
</tr>
<tr>
<td>Study 2B</td>
<td>Mturk</td>
<td>171</td>
<td>70</td>
<td>95.90%</td>
<td>41.69</td>
<td>85.38%</td>
</tr>
</tbody>
</table>

APPENDIX C.2 VARIABLES MEASURED IN STUDIES 1, 2A AND 2B

Participants rated the items on a seven-point Likert scale, ranging from 1 (“strongly disagree”) to 7 (“strongly agree”), except where indicated.

*Reading intentions:* (Chen et al., 2014) (used in Studies 1, 2A and 2B)

Imagine you have 30 minutes of spare time to read some news articles. How likely would you be to

- Read the full article of this news?
- Expend effort to read the full article of this news?
- Check out what the full article of this news says? (not used in study 1)
- Browse the full article on the news website? (used only in study 1)

*Information gap:* (used in Study 1)

On a scale from 0 (None) to 100 (Almost everything), please respond to the following questions.

- What percentage of the information in the news snippet remains to be discovered?
• What percentage of the information in the news snippet remains to be understood?

• In general, what percentage of the information in the news snippet remains to be explored?

Expressed Arousal: (Yin et al., 2017) (used in Studies 1, 2A and 2B)

Overall how would you describe the feelings expressed in this news post?

• Very passive / Very active

• Very mellow / Very fired up

• Very low energy level / Very high energy level

Felt Arousal: (Yin et al., 2017) (used in Studies 2A and 2B)

Overall how would you describe your feelings after reading this news post?

• Very passive / Very active

• Very mellow / Very fired up

• Very low energy level / Very high energy level

Source Credibility: (Jensen & Yetgin, 2017; Pavlou & Dimoka, 2006) (used in Studies 2A and 2B)

Please indicate the extent to which you agree or disagree with the following statements.

• The source of the news seems trustworthy

• The source of the news seems credible

• The source of the news seems reliable
APPENDIX C.3 SUMMARY STATISTICS

Table C.3.1 Summary Statistics Study 1

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Reading Intentions</td>
<td>3.033 (1.919)</td>
<td>3.098 (1.852)</td>
<td>2.944 (1.816)</td>
<td>2.761 (1.795)</td>
<td>.969</td>
</tr>
</tbody>
</table>

Table C.3.2 Summary Statistics Study 2A

<table>
<thead>
<tr>
<th>Variables</th>
<th>Low Expressed Arousal</th>
<th>High Expressed Arousal</th>
<th>Cronbach’s α</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reading Intentions</td>
<td>3.377 (1.790)</td>
<td>3.032 (1.781)</td>
<td>.969</td>
</tr>
<tr>
<td>Felt Arousal</td>
<td>3.393 (1.343)</td>
<td>3.943 (1.606)</td>
<td>.926</td>
</tr>
<tr>
<td>Source Credibility</td>
<td>3.680 (1.611)</td>
<td>3.294 (1.508)</td>
<td>.987</td>
</tr>
</tbody>
</table>

Table C.3.3 Summary Statistics Study 2B

<table>
<thead>
<tr>
<th>Variables</th>
<th>Low Expressed Arousal</th>
<th>High Expressed Arousal</th>
<th>Cronbach’s α</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reading Intentions</td>
<td>3.750 (1.980)</td>
<td>3.739 (1.949)</td>
<td>.981</td>
</tr>
<tr>
<td>Felt Arousal</td>
<td>3.487 (1.465)</td>
<td>3.782 (1.705)</td>
<td>.953</td>
</tr>
<tr>
<td>Source Credibility</td>
<td>4.175 (1.405)</td>
<td>3.826 (1.523)</td>
<td>.984</td>
</tr>
</tbody>
</table>
APPENDIX D: COPYRIGHT PERMISSION DOCUMENTS

APPENDIX D.1 COPYRIGHT PERMISSION FOR CHAPTER ONE

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