The Effect of Photographs on the Narrative Believability of Positively and Negatively Framed Stories

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Abstract

Countless news articles are published in print or digital form each day, creating a need to understand what makes stories attractive and believable. Salacious, oftentimes negative, news stories tend to effectively grab readers’ attention (Entman, 1993; Serani, 2011), and when the news stories are accompanied by photographs, readers’ interest in the articles is promoted (Knobloch et al., 2003). However, the extent to which negatively framed stories are perceived as believable is largely unknown. The current study examined whether a story’s valence (i.e., positive or negative) affects the believability of news articles, particularly in the presence of a photograph. It was hypothesized that the inclusion of a photograph within a negatively valenced story would increase believability. A total of 103 participants were recruited for the study, which was conducted as a 2 (Photograph: Present or Absent) x 2 (Overall Story Valence: Positive or Negative) between-subjects experimental design. Participants were randomly assigned to one of the study’s four conditions, where they read a positively or negatively valenced news article about an immigrant’s experience with Customs Border Patrol. The article was either accompanied or not accompanied by a photograph. Participants then completed a measure of narrative believability (Yale, 2013). Results revealed that negatively valenced stories were perceived as more believable than positively valenced stories, and this effect did not change with the presence or absence of a photograph. Findings have implications for how the news media should present (accurate) information to promote believability of content and further improve reader interest and engagement.

Keywords: photographs, valence, narrative believability, media coverage
The Effect of Photographs on the Narrative Believability of Positively and Negatively Framed Stories

A vast number of news stories, whether accurate or inaccurate, are published in print and/or digital form each day. For example, The Washington Post publishes an average of 500 articles per day (Meyer, 2016), making it nearly impossible for consumers to read and comprehend every story that is released. Therefore, understanding what attracts readers to stories and, ultimately, what makes the stories appear believable is incredibly important. A common journalism phrase reflects, “If it bleeds, it leads,” which means that salacious, oftentimes negative, news stories tend to effectively grab readers’ attention and engage them with the content (Serani, 2011). Recent news stories appear to follow this philosophy, as they are overwhelmingly negative, depicting crime, terrorism, economic turmoil, and governmental disarray (van der Meer et al., 2018). Relatedly, news stories accompanied by disturbing, rather than innocuous, images tend to promote readers’ completion of (even lengthy) articles (Knobloch et al., 2003). Therefore, when the news media describes and depicts information negatively (rather than positively) they appear to effectively engage readers and sustain their attention (Entman, 1993; Jackson, 2016). Although the news media may have strategies that engage readers with content, the extent to which the stories are believable and seemingly trustworthy is largely unknown. Consequently, the current study examined if story valence (i.e., positive or negative tone) affects the believability of news articles, and if the presence of a photograph contributes to narrative believability.

According to Agenda-Setting Theory, emphasizing certain story attributes (such as a story’s overall valence) affects story salience, which describes the noticeability and importance of a story for readers (Scheule & Tewksbury, 2007; Sheafer, 2007). In other words, the way a
news story is written – positively or negatively – affects how readers think about and perceive the content (Sheafer, 2007). News stories with high topic salience (Sheafer, 2007) tend to promote individuals’ perceptions of story credibility (Flanagin & Metzger, 2007; Mehrabi et al., 2009). Therefore, when highly salient information is presented to a reader, he or she tends to form judgements of the material as credible (Flanagin & Metzger, 2007).

To better understand how elements of story saliency, such as story valence, influence perceptions of media coverage, Sheafer (2007) examined the effects of a news story’s evaluative tone on the perceived importance of the issue described. Within stories written about the economy, Sheafer (2007) hypothesized that highlighting the economy’s decline (i.e., using a negative tone) would result in evaluating the issue as more important than emphasizing the economy’s improvement (i.e., using a positive tone). Additionally, it was hypothesized that the frequency at which stories about the economy appeared in the media would affect the extent to which individuals identified the economy as an important problem. This was predicted to be particularly true when story tone was negative. Media coverage about the Israeli economy was counted and coded as either positive, negative, or neutral during a one-year period prior to the last 5 elections. Following each of these elections, a national survey was distributed by the Israeli National Elections Surveys Project to assess individuals’ opinions of Israel’s most pressing issues. The survey also included questions about the frequency and type of individuals’ media exposure. Results revealed that when stories about the economy were presented with a negative evaluative tone, individuals regarded the issue as more important. Additionally, the more frequently the media covered the economy, the more individuals named the economy as an important issue facing Israel. This finding was particularly true when the tone of the media coverage was negative. Sheafer’s (2007) research demonstrates that the frequency of publishing
negative stories influences how important (and, arguably, how believable) the public perceives a topic. 

In a separate test of Agenda-Setting Theory, Kim and Choi (2014) examined if story valence affects a news story’s believability. Specifically, Kim and Choi (2014) explored whether a news story’s positive or negative evaluative tone affected the perceived believability of corporate advertising. In the study, 235 participants were randomly assigned to read an article about a corporate crisis. Stories focused on a food poisoning crisis within a Burger King chain, where employees either intentionally used expired meat to save money or unintentionally used expired meat while rushing to fill orders. These stories were presented with either a positive (i.e., emphasizing the swift and adequate corporate response to the crisis) or negative (i.e., highlighting the slow and inadequate corporate response to the crisis) evaluative tone. After reading a story, all participants completed measures assessing their perceptions of the advertisement’s believability and corporation’s credibility. Results revealed that crisis type (i.e., intentional versus unintentional) significantly affected individuals’ perceptions of the advertisement’s believability, but evaluative tone did not. However, perceptions of the corporation’s credibility were more negative when the advertisement’s evaluative tone was negative. The research by Kim and Choi (2014) and Sheafer (2007) clearly demonstrates how elements of a story impact the perceived importance and credibility of information.

Although the evaluative tone of a news story can affect readers’ perceptions of its importance and credibility, news articles rarely comprise text independently. Usually, news articles include both text and photographs to aid in the development of the story, attract readers’ attention, and highlight important themes (Cope et al., n.d.). According to the Image Characteristics Effect, images or photographs increase readers’ engagement by aiding in
comprehension and appeal of information (Li & Xie, 2019). The presence of photographs can also be emotionally stimulating for a reader, as photographs allow individuals to feel more connected with the information described in text (Graber, 1996; Iver & Oldmeadow, 2005). Disturbing, rather than innocuous, images tend to elicit stronger emotional responses in individuals (Bratner et al., 2011; Knobloch et al., 2003) and, therefore, combining text and photographs may be a powerful way to promote an article’s believability.

To examine if the presence of photographs has the power to influence the perceived truthiness (i.e., believability) of claims, Newman et al. (2012) presented participants with information about celebrities that either was or was not accompanied by photographs. Specifically, participants were presented with the names of a series of celebrities who were either familiar or unfamiliar to the public. Each celebrity name was either accompanied or not accompanied by a photograph of the celebrity within his or her chosen profession (e.g., a politician would be pictured in a public speaking setting). After reading the celebrity names and viewing the associated photographs, participants were randomly assigned to read the claim, “This famous person is alive” or “This famous person is dead” (p. 971). Participants were then asked to rate the apparent truth of the claim. Results revealed that when claims about celebrities were accompanied by a photograph, the claims were perceived as more true than when the claims were not accompanied by a photograph. Interestingly, the effect of photographs on perceived truthiness of a claim was strongest when the celebrity was unfamiliar, rather than familiar, to the individual. Additionally, claims about famous people being alive, compared to dead, were also perceived as more believable to participants. The research by Newman et al. (2012) demonstrates that photographs promote information believability, because they (arguably) promote readers’ acceptance of the information. Although the research described previously
provides some information about how story content (text and photographs) affects story credibility, research is needed on whether presenting photographs within positively or negatively valenced stories influences narrative believability.

The current study examines if the presence of a photograph makes a story more believable to a reader, particularly when the overall valence of the story is negative. Based on previous research, it is hypothesized that stories accompanied by a photograph will be perceived as more believable than stories without a photograph. Additionally, it is hypothesized that negatively valenced stories will be perceived as more believable than positively valenced stories. Finally, though both positively and negatively valenced stories are expected to be enhanced by the presence of a photo, this is expected to be especially true for negatively valenced stories.

Method

Participants

A total of 103 undergraduate students (77 female, 26 male) ages 18-33 ($M = 19.86, SD = 2.03$) from a midsized private university in the Midwest were recruited to participate in this study. The majority of participants were White, reported being in their first three years of college, and identified as having a neutral political affiliation (see Table 1 for basic demographic information). Students voluntarily signed up to participate via the School of Psychology’s participant pool. In exchange for their involvement in the study, students received 15 minutes of participant pool credit. The study was conducted in small groups of up to 15 students and took place in classrooms on campus.

Design
The study was conducted as a 2 (Photograph: Present or Absent) x 2 (Overall Story Valence: Positive or Negative) between-subjects factorial design. The dependent variable was Narrative Believability.

**Materials**

**News Article**

Adapted from a real news article by Ainsley et al. (2018), a story about an immigrant child’s death after travelling to the United States described the quick and competent (e.g., positive valence) or slow and negligent (e.g., negative valence) medical attention the girl received from Customs Border Patrol (CBP). A photograph, taken by Moore (2019), was either present or absent within the story (see Appendix A). The photo depicted a young, visually distraught, immigrant girl standing next to a CBP vehicle watching her mother interact with a border agent.

**Narrative Believability**

The extent to which the news stories were perceived as believable was measured using an adapted version of Yale’s (2013) 12-item Narrative Believability Scale. The scale is comprised of four, three-item, subscales: plausibility, completeness, consistency, and coverage. Participants rated each item using a 7-point Likert scale ranging from 1 (Very Low) to 7 (Very High). Items on the scale were averaged to (a) reflect an overall believability score (i.e., all 12 items) and (b) reflect the perceived believability for each subscale (i.e., plausibility, completeness, consistency, and coverage). Higher scores reflect greater perceived believability.

**Procedure**

The study was conducted as a 2 x 2 between-subjects factorial design. Participants read an informed consent document prior to their participation. Participants were then randomly
assigned to one of the study’s four conditions where they read a short news article about the quick and competent (positive valence) or slow and negligent (negative valence) medical treatment provided to an immigrant girl by Custom Border Patrol. A photograph of an immigrant girl was either present or absent within the story. After reading a news article, participants were asked to complete the Narrative Believability measure (Yale, 2013). Participants then responded to two manipulation check items to assess their memory of the story content and the presence or absence of a photograph within the story. Finally, participants completed a demographic form asking about their gender, age, race/ethnicity, and year in college. Participants were then thanked and debriefed.

**Results**

To test the prediction that the presence of a photograph in a negatively valenced story would be perceived as more believable than when the photograph was absent, a 2 (Photograph: present vs. absent) x 2 (Overall Story Valence: positive vs. negative) between-subjects analysis of variance (ANOVA) was conducted with average Narrative Believability as the dependent variable. The main effect of Overall Story Valence was significant, revealing that negatively valenced stories ($M = 4.70$, $SD = .42$) were perceived as more believable than positively valenced stories ($M = 4.35$, $SD = .50$), $F(1, 99) = 14.57$, $p < .001$, $\eta^2_p = .13$. The main effect of the Photograph was not significant, revealing that stories accompanied by a photograph ($M = 4.49$, $SD = .51$) were not perceived as more believable than stories unaccompanied by a photograph ($M = 4.57$, $SD = .47$), $F(1, 99) = .88$, $p = .35$, $\eta^2_p = .01$. The interaction between the Photograph and Overall Story Valence was not significant, $F(1, 99) = .28$, $p = .60$, $\eta^2_p = .003$.

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1 Twelve participants failed one of the two manipulation check items. Analyses reported below were conducted for all participants (N = 103) and only those who passed both manipulation check items (N = 91) and results revealed no differences. Therefore, results reported below include data from the entire sample.
To examine which of the subscales on the Narrative Believability measure may be responsible for differences in participants’ perceptions of the stories, four additional between-subjects factorial ANOVAs were conducted with the plausibility, consistency, completeness, and coverage subscales of the Narrative Believability scale as the dependent variables. Results revealed that negatively valenced stories were perceived as more plausible and consistent than the positively valenced stories, $F$s(1, 99) > 5.15, $ps < .025$, $\eta_p^2 \geq .05$, but not more complete or well covered, $F$s(1, 99) < 0.06, $ps > .81$, $\eta_p^2 \leq .001$ (see Table 1). Across the ANOVAs, the main effects of Photograph were not significant, $F$s(1, 99) < 1.25, $ps > .27$, $\eta_p^2 \leq .01$ (see Table 2). Finally, the ANOVAs revealed no significant interactions between Photograph and Overall Story Valence, $F$s(1, 99) < 0.72, $ps > .40$, $\eta_p^2 \leq .01$.

**Discussion**

The purpose of the current study was to examine whether a story’s valence affects the believability of news articles, particularly in the presence rather than absence of a photograph. Results revealed that negatively valenced stories were perceived as more believable than positively valenced stories, particularly because they were perceived as more plausible and consistent. The presence or absence of a photograph did not appear to impact story believability.

The present findings suggest that story valence may influence how believable individuals perceive stories. Consistent with prior findings on narrative believability (Kim & Choi, 2014; Sheafer, 2007), the current study demonstrates that negatively valenced stories are more believable to readers. One possible explanation for this finding is that readers tend to prefer (Sacerdote et al., 2020), and are more frequently exposed to, negative media (van der Meer et al., 2018). Consequently, an article presented in a less familiar or more novel way (e.g., positively valenced) may have seemed less believable (Abrajano et al., 2017) and more implausible than
articles presented in a more familiar and less novel way (e.g., negatively valenced). Additionally, because negative information tends to be more salient and stimulating for individuals (Rozin & Royzman, 2001), readers may have been more inclined to believe the negatively valenced story. Such explanations suggest that future researchers should examine the possible explanations for why negatively valenced stories are so believable.

The current study also examined whether photographs affect the believability of stories. Inconsistent with prior findings, suggesting that photographs aid in maintaining readers’ interest in stories (Gibson, 1991; Knoblach et al., 2003), the current study revealed that the presence of a photograph did not influence readers’ perception of a story’s believability. One possible explanation for this finding is that, in the current study, the photograph may have been perceived as a decorative addition to the story and not necessarily an essential (and additive) element. Therefore, the photograph would have failed to meaningfully affect readers’ perceptions of the article (Magner et al., 2010). Future research could use a variety of photographs, potentially with different degrees of emotional “power”, to examine the effects of photographs on a story’s believability.

**Limitations and Future Directions**

Despite many strengths of the current study, it has limitations that may promote future research. For example, the partisan context of the story (i.e., immigration and Border Control’s behaviors) may have affected how readers evaluated the news articles (Taber & Lodge, 2006). Participants who held strong beliefs about immigration prior to participating in the study may have based their responses more heavily on pre-existing knowledge than the materials presented to them throughout the study. Despite the current study’s use of random assignment to condition, which should eliminate this concern, future studies could include a measure assessing
individuals’ attitudes toward immigration to understand if a certain partisan attitude is more likely to lead a reader to believe stories.

Another possible limitation of the study is participants’ relatively brief exposure to the news articles. Literature on media framing (i.e., emphasizing or deemphasizing certain aspects of a story to influence a reader’s interpretation of the material) suggests that framing effects typically occur after individuals are exposed to a variety of similarly framed articles over an extended period of time (Bos et al., 2016). Although the current study did find that negatively valenced stories were perceived as more believable than positively valenced stories, future studies could expose participants to a variety of stories with the same frame or extend the length of time individuals are exposed to a story. With this method, the extent to which story valence affects story believability can be understood.

Finally, the current study attempted to add to existing literature examining what ultimately attracts readers to news articles and makes the articles appear believable. Research in this area may help inform ways to raise awareness about important social justice issues. Because the majority of adults believe that fabricated news leads to confusion about important societal issues (Bialik & Matsa, 2017), examining the ways in which journalists may eliminate such confusion and provide clear and believable stories to readers is important. Consequently, one possible extension of the current study, that is not a result of a limitation, includes examining how negative media affects individuals’ memories of a story; for example, researchers could examine whether or not negatively valenced stories affect how individuals remember a narrative and if this memorability is what affects story believability.

Conclusion
To better understand the extent to which stories are perceived as trustworthy to readers, more research should be conducted on the effect of photographs in positively and negatively valenced stories. The current findings revealed that readers perceive negatively valenced stories as more believable than positively valenced stories, and the believability of these stories was unaffected by the presence or absence of photographs. These findings have implications in the news media, as perhaps authors may want to focus on the negative features of a story to encourage readers’ engagement with and understanding of the content. In an age where individuals tend to be skeptical of the news media (Strömbäck et al., 2019), research on helping the public feel more comfortable with true information presented to them is valuable.
References


EFFECT OF PHOTOGRAPHS ON FRAMED STORIES

https://www.psychologytoday.com/us/blog/two-takes-depression/201106/if-it-bleeds-it-leads-understanding-fear-based-media


Table 1

*Demographic Information*

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**Political Affiliation**

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Table 2

*Means (and Standard Deviations) Associated with the Effects of Framed Stories on the Narrative Believability Subscales*

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<tr>
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<th>Negatively Framed</th>
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<td>5.37 (1.39)</td>
<td>5.94 (1.13)</td>
</tr>
<tr>
<td>Completeness</td>
<td>3.84 (.82)</td>
<td>3.81 (.60)</td>
</tr>
<tr>
<td>Consistency</td>
<td>4.39 (1.47)</td>
<td>5.22 (1.22)</td>
</tr>
<tr>
<td>Coverage</td>
<td>3.82 (.89)</td>
<td>3.82 (.96)</td>
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Figure 1. The significant main effect of Story Valence on Narrative Believability of the story.
Appendix A

News Articles

Seven-year-old girl who died at border [did not receive medical care for 90 minutes/received medical care within 10 minutes].
The death of Jakelin Caal raises [questions about/awareness of] the Border Patrol’s procedures.

El Paso – A 7-year-old Guatemalan girl who died in the custody of U.S. Customs and Border Protection (CBP) waited for [an hour and a half/only 10 minutes] after her arrival to receive emergency medical care after showing symptoms of dehydration, officials said Friday.

Jakelin was severely dehydrated after crossing the border illegally into New Mexico with her family and more than 60 other migrants. Medical personnel [were not/were] staffed in the remote area where they were held, known as Antelope Wells, the officials said.

Before the group left Antelope Wells by bus to be transferred to a border station, Jakelin’s mother reported that she was ill and vomiting. By the time she arrived at the border station in El Paso an hour-and-a-half later, she was not breathing. CBP [withheld necessary/quickly provided] medical support to revive the girl, [and/but] she died of cardiac arrest with her mother by her side.

Customs and Border Patrol Commissioner Kevin McAleenan testified before Congress on Tuesday that the border stations were [not well/well] equipped to handle any children who crossed the border.

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2 The highlighted text indicates the differences in wording between the positively and negatively valenced conditions. The photograph was either present or absent from the news article.
In November, over 25,000 immigrants crossed as part of a family with children and over 5,200 children crossed without a guardian, having [negative/primarily positive] effects on the health and well-being of immigrants [like/except] in Jakelin’s case.

"Our infrastructure is [incompatible/compatible] with this reality. Our border patrol stations and ports of entry [were not/were] built to handle [either/both] families or children," said McAleenan.

Immigration advocates have [criticized/praised] the Trump administration for [not properly/properly] staffing ports of entry to process asylum claims from immigrants who cross the border legally and for [not doing/doing] enough to address the humanitarian concerns of immigrants who make the dangerous journey between legal ports of entry.