News video quality affects online sites' credibility

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Abstract
Exposure to low-quality news videos on a newspaper website led a younger audience to see the news organization as less credible and lacking in value. Findings offer a cautionary tale for news organizations because even a few low-quality news videos on a newspaper website might damage newspapers' fervent effort to attract a younger audience.

Keywords
online news, news videos, journalism, credibility, quality, experiments, analysis of variance, quantitative, information processing theory, newspapers

Decades of research have examined news quality and credibility and the interplay between these variables both online and off.[1] In general, people gravitate to high quality news and shun low-quality content. Much research has found a

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link between quality and credibility, such that low-quality content leads to perceptions of low credibility of news organizations that produce such content.[2] This study builds on the research by examining this dynamic in news videos posted on a newspaper website.

This is an important area of inquiry because in today's fast-paced, digital age people have many choices of content.[3] They sift through choices quickly, making split-second decisions about whether the content is credible.[4] Assessing content quality is part of this process of determining credibility. This study focused on news videos because they are becoming a main tool in newspapers' efforts to woo younger audience members,[5] as they attempt to stanch the financial hemorrhaging in an industry that has seen its print and classified advertising business model collapse.[6] Newspapers have already fired tens of thousands of journalists and have lost nearly half their advertising revenue, as they attempt to switch to an online revenue source.[7] In the midst of this crisis, newspapers will face even more dire circumstances if they do not attract a younger audience to replace their aging print readers.[8] News videos on newspaper websites are part of this effort[9] because young people enjoy online videos[10] and use them more frequently than some other forms of multimedia.[11] Yet, because videos are a relatively new platform at newspapers, staff members often have little videography or visual training, especially at smaller newspapers.[12]

Given this trend, it is likely that these videos lack quality, and low quality videos may result in lower credibility. Therefore, it is possible that newspapers—in their frantic drive to increase their younger audience—may unwittingly damage these efforts by providing low-quality videos that actually turn young people away. This current study sought to examine this issue by answering the following over-arching question: What influence does news video quality have on news consumers' perceptions of the videos as well as their perceptions of the credibility and value of the newspaper that produced the videos?

To answer these questions, this study used an online experiment with 212 college-age subjects. Quality was defined as people's perception of how much effort had gone into creating the videos, as well as the technical attributes of the videos.[13] Therefore, quality was distinct from mere attractiveness of the videos. Credibility of the newspaper encompassed how fair, accurate, trustworthy, objective and free of bias it was.[14] The project focused on college-age news consumers because this age group is historically the least likely to read newspapers online or in print;[15] however it is also the most important demographic to replace newspapers' aging readers.[16]

Literature Review

Newspaper Credibility

The study of news credibility has a long history.[17] Prior research, for example, has found that people perceive blogs as more credible than traditional news sources,[18] that newspapers are more credible than TV or online news[19] and that news credibility often depends on the reputation of the news organization that produced the content.[20] In general, research[21] suggests high-quality news content would lead to increased perceptions of credibility. In addition, what little research there is that explores how video quality influences credibility[22] suggests that exposure to poor-quality videos leads to

lowered assessments of credibility. This current study focused on credibility of the newspaper that produced the news videos, also called organizational source credibility.[23] Organizational source credibility refers to the idea that people imbue a particular organization—in this study a newspaper—with perceptions of trustworthiness and expertise.[24] In other words, they value content produced by that news organization based in part on the split-section decision they make assessing that organization's credibility.[25]

Cummins' and Chambers'[26] study of news videos comes closest to this current research, finding that people viewed broadcast video stories lower in production value as less credible. Their findings suggest that people would view a newspaper that produced low-quality content as less credible. However, their study also paves the way for this current study, which focused on newspaper rather than broadcast videos, and examined the credibility of the newspaper, itself, not of the video. Understanding newspaper videos separately from broadcast videos is vital because broadcast has a long history of producing videos, while videos are a relatively new yet growing platform for newspapers.[27]

Perceived Value of News Videos

News video quality was distinct in this study from perceived news video value. News video value was a measure of whether experimental subjects could detect and appreciate the video quality level. Value of the news videos was defined in two ways. Technical value included how well the videos were made and how much effort went into their creation.[28] Subjective value encompassed how engaging, enjoyable, good and interesting the videos were.[29] Studies of news suggest that people would seek out and value quality news videos. For example, Meijer[30] notes that quality is the main criterion for judging journalism, so journalists must consider news consumers' subjective experience of quality as they shape content. Another study found that people could tell if production values were low in broadcast news videos, and they perceived these videos as lacking in quality.[31] Quality links to credibility because people make a judgment as they process information. In making this judgment, quality would be part of their assessment.

Perceived Value of the Newspaper

This concept was distinct from how people viewed the videos themselves. Perceived value of the newspapers was defined, in accordance with prior research,[32] as whether news consumers thought the newspaper's work was professional and worth visiting again. Therefore, this concept spoke more broadly to the perception of the brand of the newspaper and how its audience members perceived this brand. Perceived value of the newspaper was defined as the consumer's overall assessment of the utility and worth of the product.[33] In the current study, perceived value of the newspaper that produced the videos was shaped by people's perception of the value of those particular news videos. So if they watched videos that were high quality, they would perceive the newspaper that produced the videos as valuable. In contrast, if they watched videos that were low quality, they would perceive the newspaper that produced these videos as lacking in value.

Theoretical Framework

Information processing theory provides theoretical support for this research. This theory proposes that when people assess messages, the process can take two routes, as people determine the validity of the message. When the content of the message is very important to them, they employ a systematic information-processing strategy, where they expend a great deal of effort to evaluate the message's arguments and validity.[34] However, for less important messages, they use "heuristic" processing, which involves relying on simple rules or prior knowledge—called "cognitive heuristics"[35]—to make quick decisions.

The theoretical concept of cognitive heuristics is useful to understanding the interrelationship between quality and credibility. Sources, messages and even the medium itself can be a cognitive heuristic—a cue that signals to a news consumer whether to view content as credible.[36] According to Sundar's[37] Modality, Agency, Interactivity and Navigability (MAIN) Model, the type of media platform triggers a cognitive heuristic and this leads to an assessment of media credibility. Because today's online environment provides an overload of information,[38] people become even more reliant on these cues as they sort through a plethora of offerings. Young people in particular are likely to make quick decisions about credibility,[39] based on these cognitive heuristics or cues. In the current study, video quality becomes a cognitive heuristic. As a result, information processing theory and the MAIN model would suggest that people assess the quality of the video and use that assessment as a cognitive heuristic – or cue – to make judgments about the value of the content as well as the credibility and value of the news organization that produced the content.

To test this assertion, this study compared exposure to low-quality videos with exposure to high-quality videos. These were compared to a control condition, where people were exposed to mixed-quality videos. Mixed quality was defined as one high-quality video, one low-quality video and one ambiguous-quality videos, as determined by a pre-test detailed in the method section. This was done to mimic real newspaper websites, which would likely contain a mix of quality rather than all high or all low.

Based on this theoretical framework and prior research, the following were proposed:

H1:

Compared to exposure to high-quality news videos, exposure to low-quality news videos will decrease news consumers' perception of the a) technical and b) subjective value of the videos.

H2:

Compared to exposure to high-quality news videos, exposure to low-quality news videos will decrease news consumers' perception of the a) credibility and b) value of the newspaper that produced the videos.

RQ1:

Will exposure to mixed-quality videos produce significant differences compared to exposure to high- or low-quality news videos?

Method

A three-condition experiment was conducted with quality (high, low, mixed/control) as a between-subjects variable. The experiment was embedded in an online survey created on Qualtrics, and subjects accessed the survey on their own computers through a link in an email. Qualtrics randomly assigned the 212 total subjects to view high-quality videos ($n = 69$), low- quality ($n = 74$), or control/mixed quality ($n = 69$). Pre-test participants who were not involved in the experiment had previously rated the quality of the videos, as detailed below. In every experimental condition, the order of the videos was randomized to control for any effect of the order of videos.[40] Then subjects completed a manipulation check and answered dependent variable questions detailed below.

Sample

Subjects were solicited through in-class recruitment and signs posted around campus at a university in the Southeastern United States. They each received a $15 gift card to Wal-Mart, funded by a university grant, for participating. The majority of the sample was female (71.2 percent) and the average age of subjects was 22.03 ($SD = 6.12$). More than half the sample was white (54.5 percent), followed by 33 percent blacks/African Americans, 3.8 percent other/multi-racial, 2.4 percent Asian/Pacific Islanders, 1.9 percent Hispanic/Latino, 1.4 percent Native American and 3 percent who declined to report a race. An effort was made to recruit subjects from outside mass communication and journalism majors. This was done because mass communication and journalism majors at the school where the study was conducted are required to take video-production courses as part of their degree and, therefore, may perceive video quality differently than would an average college student with no such training. The majority of subjects (77.9 percent) reported a major outside mass communication or journalism.

Pre-test Procedures

Before the experiment, researchers took a series of steps to pre-test the videos used in the experiment to ensure they adequately depicted the quality levels of each condition. Two of the researchers, who had spent nearly two decades as newspaper journalists, selected 36 videos from a news website affiliated with a mid-sized newspaper in the Northeastern United States. This news site was used because it offers frequent videos, making it a suitable source for this project. Also, all videos were from the same newspaper that was physically distant from the university in the Southeastern United States where the pre-test and experiment were conducted. This was an effort to decrease any chance subjects would have pre-existing attitudes about the newspaper.

A total of 29 pre-test subjects were recruited from classes, and each was compensated with a $20 gift card to Wal-Mart, paid through a university grant. They were randomly divided into three groups, so they only had to watch 12 of the overall pool of 36 videos. Using earbuds, they watched the videos individually in a classroom with other students and then answered a series of questions explained below. On average, pre-test participants were 24.6 years old ($SD = 5.50$) and about half (55.5 percent) were women. The majority (69 percent) were white, 20.7 percent were black/African American and the rest where Asian/Pacific Islander, Hispanic/Latino, or multi-racial. Most (75.9 percent) were not mass communication or journalism majors.

Pre-test Quality Measure

Pre-test subjects rated the videos using two statements from prior research[41] to sort the videos into high- and low-quality groupings. These measures were: "Thinking of the news video you just viewed, rate your agreement with the following statements on a 1 (*strongly disagree)* to 7 (*strongly agree)* scale: "You can tell a lot of time and money has been invested in preparation, research, writing and producing this news video story" and "In terms of their technical quality and photography, these news video stories are well done."[42] Subjects also rated the overall quality of each video on a 1(*low*) to 7(*high*) scale. These three answers were averaged into an index for each video. Those indices with means of five or higher were considered "high quality," and those with means of lower than four were considered "low quality." Those with means at 4 were considered of ambiguous quality.

Experimental Stimuli

Of the 36 videos, those with the highest means were selected for use in the study as high-quality videos and those with the lowest means became low-quality videos. Next the reliability of each index was assessed using the Cronbach's α statistic. All videos used in the study had indices with Cronbach's α*'s* with high or acceptable reliability, ranging from .81 to .98. Next a series of paired *t* tests were conducted to establish that the means for the high-quality indices were significantly different from the means of the low-quality indices at $p < .05$. Finally, another series of paired *t* tests showed that the means for the indices for high-quality videos showed equal quality and that the means for the low-quality videos demonstrated equal quality. Any video was excluded from the stimuli if its index showed poor reliability or if its mean was not significantly different than means for the opposite condition. This procedure resulted in three low-quality and three high-quality videos. For the mixed-quality/control condition, one high-quality, one low-quality and one ambiguous-quality video were randomly selected. As a result, three videos served as stimuli for each condition.

Control Variable

Familiarity with the Newspaper

To check whether subjects were familiar with the newspaper that produced the stimuli videos, subjects answered the following before taking part in the experiment: "Please rate how familiar you are with the <name of the newspaper> and its online news website on a 1 (*not familiar at all*) to 7 (*very familiar*) scale."[43] Main experiment participants had little familiarity with the newspaper ($M = 1.45$, $SD = .98$). In hypothesis tests, familiarity with the newspaper was entered as a covariate to control for it in the analyses.

Manipulation Check

To ensure experiment participants detected the manipulation in video quality, a manipulation check was conducted. Participants were asked to "rate the overall quality of the 3 videos you just saw"[44] on a 1 (*low quality*) to 7 (*high quality)* scale. Overall, the manipulation was effective, $F(2, 209) = 27.87$, $p < .001$, $\eta^2 = .21$. Subjects in the

high-quality condition rated the videos higher (M = 4.81) than those in the control/mixed condition (M = 4.16) or those in the low-quality condition (M = 3.08). Post hoc Scheffe corrections showed significant differences between all groups at $p < .05$. Therefore, the experimental manipulation was successful.

Dependent Measures

Perception of Technical Value of the News Videos

This concept relied on measures from prior research.[45] Subjects rated their agreement on a 1 (*strongly disagree*) to 7 (*strongly agree*) scale to the following statements: "You can tell a lot of money has been invested in the preparation, research and producing these news videos" and "In terms of technical quality, these news videos are well done."[46] These were averaged into an index with acceptable reliability, M = 3.80, SD = 1.61, Cronbach's α =.85.

Perception of the Subjective Value of the News Videos

This concept was measured using an adaption of the utility scale.[47] Using a 1 to 6 scale, subjects rated how well a series of adjectives described the videos they had just watched. Anchors were not enjoyable/ enjoyable, not engaging/engaging, not informative/informative, low quality/high quality, boring/interesting and bad/good with the positive adjectives anchoring the higher end of the scale. Results were averaged into an index, which had high reliability, M = 3.30, SD = 1.25, Cronbach's α =.94.

Perception of Credibility of Newspaper that Produced Videos

This concept was operationalized using measures from prior research.[48] Using a 1 to 7 scale, subjects rated the newspaper that produced the videos they just viewed on a series of adjectives. Anchors were unfair/fair, unbiased/biased, inaccurate/accurate, cannot be trusted/can be trusted, imbalanced/balanced, not believable/believable, not credible/credible and not objective/objective with a higher number anchoring the positive end. Answers were averaged into an index with high reliability, M = 4.86, SD = 1.18, Cronbach's α =.93.

Perceived Value of the Newspaper that Produced Videos

Subjects rated their agreement on a 1 *(strongly disagree)* to 7 (*strongly agree)* scale to a series of statements adapted from prior research.[49] Subjects were asked if a newspaper consistently made videos of the quality they just watched would they, "Rate it favorably" and "visit its website frequently."[50] Using the same scale, they rated whether this video quality level was what they "expected from a professional news organization" and what they would "think of a professional news organization if it consistently made videos of this quality."[51] Responses were averaged into an index with high reliability, M = 3.44, SD = 1.66, Cronbach's α =.94.

Findings

H1 predicted that exposure to low-quality news videos would decrease news consumers' perception of the a) technical and b) subjective value of the videos.

H2 proposed that exposure to low-quality videos would decrease news consumers' perception of the a) credibility and b) value of the newspaper that produced the videos. RQ1 asked whether ratings for subjects exposed to the control would differ from those exposed to the high- or low-quality videos for all the hypotheses. To test these hypotheses and answer the research question, a series of analyses of variance (ANOVAs) were conducted with quality (high, low, control) as a between-subjects factor. Scheffe post hoc corrections were used to compare contrasts between groups. Familiarity with the newspaper that created the videos was entered as a covariate to control for it in the analyses, but it is only reported if it showed a significant effect.

For H1a, results showed a main effect, F (2, 211) = 30.81, $p < .001$, $\eta^2 = .03$. As predicted, subjects exposed to high-quality videos were more likely to view them as technically well done ($M = 4.75$) than did those who watched low-quality videos ($M = 3.04$, $p < .001$) and those in the control condition who watched mixed-quality videos ($M = 3.67$, $p < .001$). The means for the control and low-quality conditions were significantly different at $p = .01$, answering RQ1. Familiarity with the newspaper shared some variance, F (1, 211) = 19.26, $p < .001$, $\eta^2 = .01$. This suggested that subjects who had some familiarity with the newspaper were more likely to view the high-quality videos as technically well done than were those with less familiarity. However, the effect of familiarity was not so great that it negated the main effect of quality. Therefore, H1a was supported.

For H1b, results showed a main effect, F (2, 211) = 22.42, $p < .001$, $\eta^2 = .02$. Subjects exposed to low-quality videos perceived them as having less subjective value ($M = 3.18$) than did those exposed to high-quality videos ($M = 4.44$, $p < .001$) or the control ($M = 3.84$, $p = .001$). Means for the control and high-quality conditions were significantly different at $p = .008$, answering RQ1. The data supported H1b.

For H2a, findings showed a main effect, F (2, 211) = 11.90, $p < .001$, $\eta^2 = .01$. Those in the low-quality condition ($M = 4.37$) saw the newspaper that produced the videos as less credible than did those in the high-quality condition ($M = 5.25$, $p < .001$) and those in the control ($M = 4.99$, $p = .003$). No significant differences were found between means in the control, compared to the high-quality condition ($p = .51$), answering RQ1. Support was found for H2a.

Results for H2b showed a main effect, F (2, 211) = 27.46, $p < .001$, $\eta^2 = .04$. Subjects exposed to low-quality videos viewed the newspaper that produced the videos as having less value ($M = 2.66$) than did those exposed to high-quality videos ($M = 4.38$, $p < .001$) or the control ($M = 3.36$, $p = .03$). Means for the control and high-quality conditions were significantly different, $p = .001$, answering RQ1. However, familiarity with the newspaper shared some variance, F (1, 211) = 9.47, $p = .002$, $\eta^2 = .01$. This finding suggested that those with greater familiarity with the newspaper rated its value as lower if they were exposed to low quality than did those who were unfamiliar with the newspaper. However, the effect of familiarity was not so great that it eliminated the main effect of quality. H2b was supported.

Discussion

A main aim of this study was to explore the effect of poor-quality news videos on the coveted audience for newspapers' continued survival—college-age people. Based on information processing theory,[52] this study hypothesized that news consumers

would link video quality to newspaper credibility. As a result, exposure to low-quality videos would compel people to view the newspaper that produced them as having less value and credibility. Overall the findings show that younger news consumers can detect quality differences in news videos and this leads them to value high-quality videos over low-quality videos. Those exposed to low-quality videos saw them as lacking in technical value as well as subjective value, a measure of how much they enjoyed, liked and felt engaged by the videos. In addition, this study found that people exposed to low-quality videos had a diminished view of both the credibility and the value of the newspaper that produced the videos.

This study found that people exposed to low-quality videos had a diminished view of both the credibility and the value of the newspaper that produced the videos.

These findings explore a medium—newspaper news videos—that has received almost no study,[53] yet is deserving of attention because of the key role videos are playing as newspapers attempt to reverse their recent declines.[54] Finally, this study linked two areas of research that have received a great deal of study—news quality and news credibility—by exploring how the two relate in an increasingly popular platform for news delivery, the video.

Theoretical Ramifications

From a theoretical perspective, the main contribution of this research was to apply the concept of cognitive heuristics[55] to news videos, where it has not before been tested. The MAIN model[56] that stems from information processing theory suggests that quality of a news video would trigger a cognitive heuristic—or cue—that would inform news consumers' perception of the credibility and value of the newspaper that produce the videos. This supports the idea that cognitive heuristics may be aspects of news content—such as quality—not just sources, messages or different types of platforms as earlier research suggests.[57]

Practical Implications

Clearly, this study found that even subtle differences in quality have an effect. Significant differences were found in exposure to low-quality videos, compared to both high quality and mixed quality for both technical and subjective value of the videos and value of the newspaper that produced the videos. Overall, these findings suggested that even a few low-quality news videos on a newspaper website will damage newspapers' fervent effort to use videos as one means to attract a younger audience.[58] While younger people gravitate to videos,[59] this study demonstrated that they can detect quality differences, and those differences have an effect on how they view the videos and the newspaper that produced them. In this study, subjects had the lowest preference for low-quality videos, followed by mixed quality and high quality. This is

telling because it suggested that newspapers must be particularly careful to ensure all or at least most of their videos are high quality. Even a mix of quality could lead people to view the newspaper less favorably. However, for newspaper credibility, there were no significant differences between mixed- and high-quality videos. This may offer some positive news for newspapers. Perhaps only a few poor videos will not damage their credibility. Yet, caution should be taken because it is unclear from these findings how many poor-quality videos lead to deficits in credibility. Future research must parse out how much poor quality will lead younger audiences to assume the whole site or the entire newspaper that produced it is lacking.

Limitations and Future Research

Some limitations of this research should be acknowledged. This study focused on how the quality of news videos influenced how a younger audience viewed the credibility and value of the newspaper that produced the videos. Future studies should examine news videos in concert with other aspects of the website, such as slide shows, audio stories, text, images, data visualizations and interactive social media tools, to provide a fuller picture. In addition, there is great merit in considering the same hypotheses with other groups of people, such as older audience members or young people who are not in college, to see if their perceptions would be similar.

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