Persuasion and News Sharing: Sharer, Sharing Frequency, and Framing

THESIS

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Abstract

This study investigated three factors that might impact persuasion in health as well as message characteristics and individual differences related to health-news sharing. The source expertise cue was found to have a significant impact on message credibility and behavioral intention even when the source was a mere “sharer” of the message. An interaction effect between sharing frequency and framing was significant. However, sharing frequency did not function as a bandwagon cue. In regard to the intention to get a colonoscopy, loss-framed messages were shown to be more effective than gain-framed messages, but only when shared by a non-expert in the health field. The perceived novelty of a message and the behavioral intention to engage in the behavior the message was intended to promote were strongly correlated with news-sharing intention. Finally, public self-consciousness moderated the effect of behavioral intention on information-sharing intention. Theoretical and practical implications are also discussed.
Acknowledgments

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Introduction

The new media environment has dramatically changed the way people access and share news (Cappella, Kim, & Albarracín, 2014). People still get news from traditional news outlets, such as newspapers, magazines, and television networks, but they can also obtain it from various online media platforms, such as blogs, Facebook, and Twitter. This is possible because new media technology enables anyone to easily share news with others via these platforms.

According to the Pew Research Center (2014), 50% of social network site users in the US have shared news stories via social media sites. Further, some of the features of recently introduced media technology could lead to changes in perceptions of news articles. In other words, people’s perceptions of any given news item may depend on the cues that the delivery medium provides.

Health news is subject to the same conditions. Certainly, people search for health news and share it with others via new media technology. For example, medical doctors who want to communicate with a wide range of people often use blogs to share health news they have read. In addition, health experts, such as medical doctors, and people who are not usually considered experts on health can all share health news in the same fashion.
Regardless of whether the aim of sharing health news with others is to deliver facts or to persuade people to shape, change or, maintain health-related behaviors, it is worth noting the emphasis that new media places on sharing features, as these may increase exposure to health news. From the perspective of persuasion, questions arise in regard to the effectiveness of sharing health news because mere exposure does not guarantee a change in attitude much less a change in behavior. In communication-based interventions, however, getting people to read the target message is a necessary condition, although not a sufficient one.

Health news articles cover a wide range of conditions, treatments, and diagnostic procedures, including colonoscopy. As a polyp can take 10 to 15 years to develop into colorectal cancer, regular screening is very important and strongly recommended (American Cancer Society, 2014). However, in 2012, only 65% of adults in the US aged between 50 and 75 reported that they had undergone this procedure (Centers for Disease Control and Prevention, 2013). Given these figures, it is worth exploring how best to design health news in order to deliver the message that colonoscopy constitutes a critical diagnostic tool.

Research has shown that search engines, such as Google, and social media, such as Facebook and Twitter, are two of the most commonly used ways to seek and share health information on the Internet (Choudhury, Morris, & White, 2014). Given that these are important ways in which people seek health information, the current study examines how individuals perceive health news pertaining to colonoscopy posted to a blog and how the interactions between the message framing and the cues embedded in this medium
affect their behavioral intention to get a colonoscopy and their intention to share the news with others.
Literature Review

Colonoscopy

In 2011, 51,783 people in the US died from colorectal cancer, which is the second-leading cause of cancer-related deaths in the country (Centers for Disease Control and Prevention, 2011). Early detection of disease conditions has substantial benefits, such as reduced risk of death—and colorectal cancer is no exception (Frazier, Colditz, Fuchs, & Kuntz, 2000).

However, in 2012, only 65% of those aged between 50 and 75 reported that they had undergone a colonoscopy (Centers for Disease Control and Prevention, 2013). In order to increase the screening rate, it is necessary to determine the reasons that people do not get a colonoscopy and the kinds of messages and delivery mechanisms that are most likely to effectively promote this procedure.

One of the main reasons adults over 40 in the US have not undergone this procedure is that they have not thought about doing so (Shapiro et al., 2008). Another reason is that many people think that they do not need to get a colonoscopy. Based on these reasons, it is assumed that people do not have enough information about colonoscopy and/or that the message design and delivery are not effective enough to motivate people to get one. At least in regard to dissemination, it is worth exploring the effects that different kinds of message designs and delivery mechanisms have on the
intention to share health news.

Seeking and Sharing Health News

People often use search engines (e.g., Google, Bing, or Yahoo!) to find health information (Morahan-Martin, 2004; Rice, 2006). If they want to find health news using search engines, they may be directed to the official websites of traditional news organizations (e.g., CNN) or to websites specializing in health (e.g., WebMD). Also, they may find some health news on personal blogs where the bloggers share health news that they have obtained from the aforementioned websites. For example, a blogger may post a health news article from the New York Times on his or her blog with the goal of sharing the article with others.

By this time, social media, such as Facebook and Twitter, have become an important platform for sharing health information (Rice, 2006). At present, the vast majority of news articles available online can be shared via social media because most online media provide readers with a social media–sharing function. For instance, a Facebook or Twitter user who finds a health news article on the New York Times website that he/she wants to share can easily do so using the website’s various sharing plug-ins. Further, the Facebook or Twitter user may find the same news article on a personal blog. Regardless of where the news article is found, it can easily be shared via Facebook or Twitter.

Websites, blogs, and social media that have sharing functions often show the number of times articles or posts have been shared. This kind of cue may affect people’s perceptions of the health news they are exposed to.
In the online environment, information consumers are often overwhelmed by too much information. Theories of information processing suggest that in the online context, information consumers use cognitive heuristics to minimize the time and effort they expend on determining the credibility of information (Metzger & Flanagan, 2013). Credibility is traditionally ascertained by judging the information source (Hovland, Janis, & Kelley, 1953). According to the MAIN model proposed by Sundar (2008), any given medium offers many cues, including source cues, that can trigger the operation of a heuristic. The MAIN model suggests that there are four technological affordances or features embedded in the Internet: modality, agency, interactivity, and navigability. These affordances are associated with various heuristic cues that have an effect on a user’s judgment of the credibility of information thus presented.

In regard to sharing frequency, the bandwagon heuristic may play a role in perceptions of credibility. The bandwagon heuristic is triggered by bandwagon cues and refers to the tendency of individuals to believe that a certain opinion is correct when many others believe so. Thus, given that it indicates the “collective endorsement and popularity of the underlying content” (Sundar, 2008), the bandwagon heuristic can be influential in regard to perceptions of credibility. In other words, this kind of heuristic leads to a perception of high credibility. Knobloch-Westerwick, Sharma, Hansen, and Alter (2005) have demonstrated strong bandwagon effects. In their study, the bandwagon heuristic was elicited by the five-star rating scale (bandwagon cue) of the news.

On a blog, the number of times a health news post has been shared, however, does not capture the total number of individuals who like the post or consider the post credible
because a person who shares a piece of information with others does not necessarily like or endorse it and similarly not everyone who likes and/or endorses the information will share it. Yet, bandwagon cues can be inferred (J. Y. Lee & Sundar, 2013). People may share a blog post when they think others should read the post, such that the display of the number of times the blog post has been shared might trigger a bandwagon heuristic.

**Hypothesis 1 (H1):** Participants will consider health-news blog post has been shared many times to be more credible than one that has been shared a few times.

**Hypothesis 2 (H2):** Participants will report a higher intention to get a colonoscopy when the health-news blog post has been shared many times than one that has been shared a few times.

**Sources of Online Health News**

In reading a news item online, people often notice that it has more than one source. Sundar and Nass (2001) identified three types of sources in online news: visible sources, technological sources, and receiver sources. For example, when a person shares health news from the *New York Times* via a blog, the *New York Times* constitutes the visible source, the blog itself constitutes the technological source, and the person who has posted the news on the blog constitutes the receiver source. In other words, a person who has shared news online is also perceived as a news source.

When a message has multiple perceived sources, namely proximal and distal sources, the effect of the credibility of each source on message credibility varies depending on the extent of the respective receivers’ involvement in the topic (Kang, Bae, Zhang, & Sundar, 2011). When people are highly involved in the topic of a news article,
they tend to examine both proximal and distal sources in order to evaluate the article’s message. On the other hand, people who are not very involved in the topic tend to be influenced only by the proximal source assessing the message.

Assuming that people are not always highly involved in the topic of the news story they are reading, it is reasonable to expect them to view the person who shared the story as its source. For example, in the *New York Times* and blog example, the blogger is viewed as the source of the news.

In regard to blogs and health news, it may prove worthwhile to consider cues associated with the blogger. For example, if the profile of the blogger shows that he or she is a medical doctor, the *expertise heuristic* may be triggered (Sundar, 2008). Expertise is one of the two classical dimensions of source credibility—the other is trustworthiness (Hovland et al., 1953). Further, empirical tests have shown that a person with expertise relevant to a tweeted story, in this case a medical doctor, is likely to be seen as a credible source of health messages (J. Y. Lee & Sundar, 2013). When the source of a message is perceived as credible, then the message is also perceived as credible (Hovland et al., 1953), which, in turn, positively affects attitudes toward and the behavioral intention related to that message.

*Hypothesis 3 (H3)*: Participants will perceive a health news article about colonoscopy posted to a blog by a medical doctor as more credible than one posted by a layperson.

*Hypothesis 4 (H4)*: Participants will have a higher intention to get a colonoscopy on reading a health news article on colonoscopy posted to a blog by a medical
doctor than on reading one posted by a layperson.

Framing and Source Credibility

In order to address the message design issue, the current study looks at the prospect theory of Tversky and Kahneman (1981), which is one of the theories related to health message design. In health communication research, there are a number of studies on framing, based on which researchers have conducted a few meta-analyses (Gallagher & Updegraff, 2012; O'Keefe & Jensen, 2009).

According to prospect theory, people are more willing to take risks when they are faced with loss-framed messages than when faced with gain-framed messages. Consistent with this premise, research has shown that in general gain-framed appeals are more persuasive when they focus on behaviors that prevent a disease because prevention is considered to be associated with risk aversion (Ferrer, Klein, Zajac, Land, & Ling, 2012; Rothman, Bartels, Wlaschin, & Salovey, 2006). In contrast, loss-framed appeals are more persuasive when they focus on behaviors that detect a disease because detection is considered to be associated with risk-seeking.

Jones, Sinclair, and Courneya (2003) considered the relationship between framing and source credibility. Specifically, they examined how framing and source credibility affect the intention to exercise, which is categorized as prevention. They found that the participants in the gain-frame and high-credibility source condition showed a higher exercise intention than did the participants in the other conditions. Therefore, if the message (health news for the present study) is about colonoscopy detection, participants in the loss-frame and highly credible message condition can be expected to report a
higher intention to get a colonoscopy than those in the gain-frame and low-credibility message condition.

*Hypothesis 5 (H5)*: Participants exposed to a loss-framed news article posted to a blog will report a higher intention to get a colonoscopy than will those exposed to a gain-framed message.

*Hypothesis 6 (H6)*: Participants exposed to a loss-framed news article posted to a blog by a medical doctor will report a higher intention to get a colonoscopy than will those exposed to a loss-framed news article posted by a layperson, a gain-framed news article posted by a medical doctor, or a gain-framed news article posted by a layperson.

*RQ 1*: What are the interaction effects of framing, source expertise, and bandwagon cues on message credibility?

*RQ 2*: What are the interaction effects of framing, source expertise, and bandwagon cues on the behavioral intention to get a colonoscopy?

**News-sharing Intention**

Information or news sharing is a significant feature of new media. Cappella et al. (2014) presented some psychological motives and message characteristics that affect the information-sharing intention, such as the defense motivation, the accuracy motivation, and the impression- and relationship-management motivation. Other factors, such as the efficacy and novelty of information and emotions, are also expected to influence the intention to share information. However, very little research has been conducted on this
feature in persuasion research. Therefore, more empirical studies are required in order to advance our understanding of information-sharing phenomena.

According to at least one empirical study focused on identifying some of the characteristics that drive information-sharing in persuasive communication (Kim, Lee, Cappella, Vera, & Emery, 2013), people are more likely to share information when it is new, laden with positive emotion, and persuasive enough such that people express the intention to engage in the behavior targeted by the message (behavioral intention).

Drawing on Kim et al.’s (2013) study, which focused on anti-smoking (prevention) messaging, the current study tests two of the aforementioned characteristics, i.e., novelty and behavioral intention in colonoscopy (detection). If people perceive a news article about colonoscopy as new, they are expected to share it with others. Also, if people perceive a piece of information as persuasive enough to make them engage in the behavior the message is promoting, they may think that sharing it would make them look good. One study demonstrated that people are more willing to share content that they think will make them look good than to share content they think will make them look bad (Barasch & Berger, 2014). In terms of health news, it is assumed that people will perceive persuasive health news as making them look good rather than bad. Therefore, it is hypothesized that individuals who have a high intention to get a colonoscopy after reading related health news will be more likely to share the news about colonoscopy with others than will those have a low intention of getting a colonoscopy after reading the health news.
Hypothesis 7 (H7): The perceived novelty of a news article will be positively related to the intention to share the news with others.

Hypothesis 8 (H8): The intention to share a news article about colonoscopy will be positively related to the behavioral intention to get a colonoscopy.

Impression-management Motivation

Even before the advent of new media technology, people shared information with others by, for example, passing on a newspaper or magazine or forwarding emails. However, the extent to which information could be shared through such practices was very limited.

However, information shared on the Internet has the potential to reach large numbers of people. A person with a lot of “Friends” on Facebook or “followers” on Twitter would probably be very motivated to manage his/her self-presentation because of the public nature of his/her profile compared with a person who neither has followers nor any expectation of acquiring any. In the latter context, it is reasonable to suggest that the person would not care about how others might perceive his/her sharing of health news via Facebook or Twitter. There are numerous ways to manage self-presentation, among which is providing gift information to other users (Lampel & Bhalla, 2007). By giving information to others, people manage how they present themselves. In other words, sharing information could constitute one way of managing self-presentation.

In regard to impression management and the sharing of information, it is worth considering an aspect referred to as public self-consciousness, which is an individual difference variable that explains why some people tend to adopt the perspective of others
Individuals with a high level of public self-consciousness care very much about their social appearance and the impression they make on others (Turner, Carver, Scheier, & Ickes, 1978). On this point, it may be that those who have a high level of public self-consciousness may not share information that shows them as flawed in any way. In regard to persuasive messages, those who have a high level of public self-consciousness would consider persuasive messages better than less persuasive ones for the purpose of impression management (see figure 1).

**Hypothesis 9 (H9):** Public self-consciousness will moderate the effect of behavioral intention on sharing news about colonoscopy.
Method

Design Overview

A 2 (source expertise cue: medical doctor (expert) vs. layperson (non-expert) × 2 (sharing frequency: high vs. low) × 2 (message frame: gain vs. loss) between-subjects experimental design was used to test the effects of expertise cues, sharing frequency, and message frames on message credibility, behavioral intention, and news-sharing intention.

Participants and Procedure

The U.S. Preventive Services Task Force (2008) recommends that people aged 50 or older undergo a colonoscopy. However, those with a family history of colon cancer should undergo a colonoscopy at age 40. Based on these recommendations and on a previous study (Ferrer et al., 2012), people were eligible to take part in the present study if (1) they were aged between 45 and 75 years old, (2) they had no history of cancer of any kind, and (3) they had not undergone a colonoscopy or had scheduled this procedure. The final sample comprised 281 participants, of whom 50.5% were male and 49.5% female, 89% were white, and 45.9% were married. Table 1 contains full participant characteristics.

Procedure

The experiment was conducted online. The study participants were randomly assigned to one of the eight experimental conditions. All the conditions featured the
<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean (SD)</th>
</tr>
</thead>
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<tr>
<td>Age</td>
<td>59.75 (7.61)</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Variable</th>
<th>Count (Percent of Sample)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>142 (50.5%)</td>
</tr>
<tr>
<td>Female</td>
<td>139 (49.5%)</td>
</tr>
<tr>
<td>Race</td>
<td></td>
</tr>
<tr>
<td>American Indian or Alaska Native</td>
<td>5 (1.8%)</td>
</tr>
<tr>
<td>Asian</td>
<td>6 (3.9%)</td>
</tr>
<tr>
<td>Black or African American</td>
<td>18 (6.4%)</td>
</tr>
<tr>
<td>White</td>
<td>250 (89.0%)</td>
</tr>
<tr>
<td>Other</td>
<td>2 (0.7%)</td>
</tr>
<tr>
<td>Marital status</td>
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<tr>
<td>Separated</td>
<td>6 (2.1%)</td>
</tr>
<tr>
<td>Living with a partner</td>
<td>12 (4.3%)</td>
</tr>
<tr>
<td>Widowed</td>
<td>23 (8.2%)</td>
</tr>
<tr>
<td>Divorced</td>
<td>57 (20.3%)</td>
</tr>
<tr>
<td>Married</td>
<td>129 (45.9%)</td>
</tr>
<tr>
<td>Never been married</td>
<td>54 (19.2%)</td>
</tr>
<tr>
<td>Family history of CRC</td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>30 (10.7%)</td>
</tr>
<tr>
<td>No</td>
<td>251 (89.3%)</td>
</tr>
<tr>
<td>Income</td>
<td></td>
</tr>
<tr>
<td>$14,999 or lower</td>
<td>43 (15.3%)</td>
</tr>
<tr>
<td>$15,000 to $24,999</td>
<td>47 (16.7%)</td>
</tr>
<tr>
<td>$25,000 to $34,999</td>
<td>47 (16.7%)</td>
</tr>
<tr>
<td>$35,000 to $49,999</td>
<td>40 (14.2%)</td>
</tr>
<tr>
<td>$50,000 to $74,999</td>
<td>53 (18.9%)</td>
</tr>
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<td>$75,000 to $99,999</td>
<td>27 (9.6%)</td>
</tr>
<tr>
<td>$100,000 to $149,999</td>
<td>15 (5.3%)</td>
</tr>
<tr>
<td>$150,000 to $199,999</td>
<td>4 (1.4%)</td>
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<tr>
<td>$200,000 and over</td>
<td>5 (1.8%)</td>
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<tr>
<td>Education</td>
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<tr>
<td>Some high school</td>
<td>4 (1.4%)</td>
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<tr>
<td>High school</td>
<td>67 (23.8%)</td>
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<tr>
<td>Some college</td>
<td>74 (26.3%)</td>
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<tr>
<td>Trade, technical, vocational training</td>
<td>22 (7.8%)</td>
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<tr>
<td>College</td>
<td>71 (25.3%)</td>
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<tr>
<td>Some postgraduate</td>
<td>12 (4.3%)</td>
</tr>
<tr>
<td>Postgraduate</td>
<td>31 (11.0%)</td>
</tr>
</tbody>
</table>

Table 1. Participant characteristics
same basic study procedures. However, the participants in each condition viewed only one of the two news article stimuli written for the purpose of this study.

First, the participants completed the pretest questionnaire, which was designed to measure their involvement in the issue, their public self-consciousness, and their health consciousness. Then, each participant read one of the two news articles about colonoscopy presented on a blog. In the high sharing-frequency condition, the blog post presented cues showing that the post had been shared 902 and 974 times via Facebook and Twitter, respectively. In the low-sharing-frequency condition, the blog post presented cues showing that the post had been shared fewer than one and three times via Facebook and Twitter, respectively. In the expert condition, the blogger was a medical doctor and a professor of medicine at a university. In the non-expert condition, the blogger was a layperson, specifically, a finance manager at the same university.

After reading the news article, the participants completed items measuring source credibility, message credibility, attitude toward colonoscopy, behavioral intention in regard to getting a colonoscopy, norms associated with colonoscopy, intention to share the news, media use, family history of colorectal cancer, and demographics. In addition, a manipulation check was performed.

Stimulus Materials

The messages presented to the participants pertained to the reasons for getting a colonoscopy. The loss- and gain-frame messages on colonoscopy from a previous research study (Ferrer et al., 2012) were adopted, but modified in order to take on the format of a news article.
As presented to the participants, the messages, i.e., the news articles, appeared to have been generated through the Associated Press. According to the condition to which the participant was assigned, the news article appeared to have been posted by either a medical doctor or a layperson in order to manipulate the expertise cues. In each condition, a section was included on the blog called “About me,” which indicated the blogger’s job.

The sharing frequency of the post was placed immediately above “About me.” Specifically, two numbers were given: one indicating the number of times the blog post had been shared via Facebook and another indicating the number of times the blog post had been shared via Twitter. For the high sharing frequency, the number was over 900 for Facebook and likewise over 900 for Twitter, whereas for the low sharing frequency the number was less than 5 for Facebook and likewise less than 5 for Twitter. For the eight stimuli, see Appendix A.

Measures

Pretest measures

The participants indicated their level of involvement in the issue through three 7-point Likert-type items from Maheswaran and Meyers-Levy (1990): “involving, personally relevant, interesting (1 = Not at all, 7 = Very much).” Three items ($\alpha = .84$) were averaged to create an overall measure of issue involvement ($M = 3.09, SD = 1.66$).

Health consciousness was measured with four 7-point Likert-type items from a Health Consciousness Scale (Michaelidou & Hassan, 2008). The four items ($\alpha =$
.88) were averaged to create an overall measure of health consciousness ($M = 5.70, SD = 0.93$).

Public self-consciousness was measured with one of the subscales of the self-consciousness scale (Scheier & Carver, 1985). This measure has seven 7-point Likert-type items including “I care a lot about how I present myself to others (1 = Not like me at all, 7 = A lot like me)” The seven items ($\alpha = .87$) were averaged to create an overall measure of public self-consciousness ($M = 4.25, SD = 1.30$).

**Posttest measures**

Source credibility, specifically the credibility of the blogger who had posted the news, was measured using a 7-point semantic differential scale from McCroskey and Teven (1999), which comprises 18 items measuring three dimensions: competence, trustworthiness, and good will. The items include unintelligent vs. intelligent and untrained vs. trained. Six items for each dimension were averaged to create overall measures of competence ($M = 5.67, SD = 1.09, \alpha = .91$), trustworthiness ($M = 5.77, SD = 1.05, \alpha = .95$), and good will ($M = 5.34, SD = 1.10, \alpha = .91$).

The participants’ perceptions of the message credibility of the news article were assessed using a modified version of an online news perception measure (Sundar, 1999). This is a 7-point Likert-type scale (1 = describes very poorly, 7 = describes very well) with six items for credibility and three items for quality. The nine items ($\alpha = .94$) were averaged to create an overall measure of message credibility ($M = 5.67, SD = 1.02$).

Attitudes toward colonoscopy were measured using four items from a 7-point bipolar scale from Maheswaran and Meyers-Levy (1990), Montano and Taplin (1991),
and Smith-McLallen and Fishbein (2008). The participants were asked to respond to items such as “My getting a colonoscopy [in the next year/when it is next recommended] is extremely bad – extremely good.” The four items ($\alpha = .84$) were averaged to create an overall measure of attitude toward colonoscopy ($M = 4.49, SD = 1.50$).

Two kinds of norms were measured: injunctive and descriptive. Injunctive norms were measured by responses to this question: “Do most people who are important to you think you should or should not get a colonoscopy in the next 12 months? (1 = definitely should not, 7 = definitely should)” ($MD = 4.99, SD = 1.58$). Descriptive norms were measured by responses to this question: “How many people who are most similar to you got a colonoscopy in the past year? (1 = none or very few, 7 = all or almost all)” ($MD = 3.53, SD = 1.78$). These questions were drawn from a study by Smith-McLallen and Fishbein (2008).

Behavioral intention to get a colonoscopy was measured using three behavioral intention items derived from a prior study (Ferrer et al., 2012). Seven 7-point Likert-type items were used, including items such as “I intend to get a colonoscopy sometime in the next 12 months (1 = strongly disagree, 7 = strongly agree).” Three items ($\alpha = .98$) were averaged to create an overall measure of behavioral intention to get a colonoscopy ($M = 3.18, SD = 1.95$).

In order to measure the participants’ intention to share the news, three items from previous research (Kim et al., 2013; C. S. Lee & Ma, 2012) and two items created by the researcher of the current study were employed. These are 7-point Likert-type scales including items such as “I intend to share the news with others via social media, such as
Facebook or Twitter (1 = very unlikely, 5 = very likely).” Although the news article in the present study was posted on a blog, the participants’ intention to share the news in other ways, such as via social media, email, mobile text, or off-line conversations, was measured. Five items ($\alpha = .91$) were averaged to create an overall measure of intention to share news ($M = 2.07, SD = 1.47$).

Message novelty was measured using two 7-point Likert-type items. One item was from a previous study (Kim et al., 2013) and the other was created by the researcher of the current study. Two items ($\alpha = .67$) were averaged to create an overall measure of message novelty ($M = 3.05, SD = 1.61$). For all the measures, see appendix B.
Results

Manipulation Check

The source expertise manipulation was checked by asking the participants to indicate the extent to which they agreed with two items, one of which was “The blogger is an expert in health information.” Responses to the two items ($\alpha = .93$) were averaged with the participants in the expert condition ($M = 5.85, SD = 1.21$) giving this item a significantly higher rating than did the participants in the non-expert condition ($M = 2.33, SD = 1.65, t(279) = 20.44, p < .001, d = 2.43$).

A chi-square test was performed to assess whether the participants had paid attention to the number of times the blog post had been shared via Facebook and Twitter. Specifically, for each medium, the participants were asked to indicate the number they had seen: less than 5 or over 900. The test was found to be statistically significant, $X^2(1, N = 279) = 236.75, p < .001$ for Facebook and $X^2(1, N = 279) = 227.97, p < .001$ for Twitter. Specifically, for Facebook, 96.4% of the participants in the high sharing-frequency condition chose “over 900,” whereas 95.7% of the participants in the low sharing-frequency condition chose “less than 5.” For Twitter, 96.5% of the participants in the high sharing-frequency condition chose “over 900,” whereas 93.6% of the participants in the low sharing-frequency condition chose “less than 5.”
A manipulation check question in regard to the message framing was asked. The participants rated the message on a 5-point bipolar scale (1 = Mostly about the gains from getting a colonoscopy, 5 = Mostly about the losses from not getting a colonoscopy). The participants in the gain-frame condition ($M = 1.20, SD = 0.56$) rated the message as more gain-framed than did the participants in the loss-frame condition ($M = 3.65, SD = 1.58, t(279) = -17.33, p < .001, d = 2.07$).

In sum, all three manipulations used in the present study were successful.

### Source Credibility

The source credibility measure employed in the current study had three dimensions: competence, trustworthiness, and good will. Researchers have been advised against using this measure as whole, because these dimensions represent unique constructs (McCroskey & Teven, 1999); therefore, each source credibility factor was examined separately.

First, the competence of the source was examined using a 2 (expertise cue: medical doctor vs. layperson) × 2 (sharing frequency cue: high vs. low) × 2 (message frame: gain vs. loss) between-subjects analysis of variance (ANOVA). No significant three-way interaction between expertise, sharing frequency, and framing was found on source credibility, $F(1, 281) = 0.002, p = n.s$. However, there was a significant two-way interaction between sharing frequency and framing, $F(1,281) = 5.16, p < .05, \eta^2 = .02$. As shown in Figure 2, when the message was loss-framed, the sharing frequency (many: $M = 5.38, SD = 1.13$ versus few: $M = 5.89, SD = 1.00$) negatively affected the perceived source competence. In other words, the participants in the loss-frame condition...
perceived the source as more competent when the blog post had been shared a few times, \( t(277) = -2.76, p < .01 \). A main effect of source expertise was found, \( F(1, 281) = 54.53, p < .001, \eta^2 = .17 \). Specifically, a medical doctor was perceived as more competent \( (M = 6.11, SD = 1.00) \) than a layperson \( (M = 5.23, SD = 1.00) \). Also, a main effect of sharing frequency was obtained, \( F(1, 281) = 4.30, p < .05, \eta^2 = .015 \). When the blog post had been shared a few times \( (M = 5.80, SD = 1.06) \), the source was considered having more expertise than when the post had been shared many times \( (M = 5.55, SD = 1.12) \).

Second, the trustworthiness of the source was examined and neither a three-way nor a two-way interaction was found. Like source competence, there was a main effect of
expertise, $F(1,281) = 13.13, p < .001, \eta^2 = .05$: a medical doctor was perceived as more trustworthy ($M = 5.99, SD = 1.01$) than a layperson ($M = 5.55, SD = 1.05$). Also, a main effect of sharing frequency was obtained, $F(1,281) = 4.01, p < .05, \eta^2 = .01$. When the blog post had been shared a few times ($M = 5.89, SD = 1.04$), the source was considered more trustworthy than when the post had been shared many times ($M = 5.65, SD = 1.05$).

Lastly, goodwill was assessed, and neither a three-way nor a two-way interaction was found. There was a main interaction effect of expertise, $F(1,281) = 8.36, p < .01, \eta^2 = .03$: a medical doctor was perceived as having more good will ($M = 5.72, SD = 1.08$) than a layperson ($M = 5.35, SD = 1.09$). Also, a main effect of sharing frequency was obtained, $F(1,281) = 3.99, p < .05, \eta^2 = .01$. When the blog post had been shared a few times ($M = 5.67, SD = 1.05$), the source was considered to have more goodwill than when the post had been shared many times ($M = 5.41, SD = 1.13$).

**Message Credibility**

No significant three-way interaction between source expertise, sharing frequency, and framing was found on message credibility. However, there was a two-way interaction effect between sharing frequency and framing, $F(1,281) = 4.60, p < .05, \eta^2 = .02$. Similar to the results for competence, when the message was loss-framed, the sharing frequency (many: $M = 5.38, SD = 1.10$ versus few: $M = 5.81, SD = 0.95$) negatively affected perceived source competence. In other words, the participants in the loss-frame condition perceived the message as more credible when the blog post had been shared
few times than when it had been shared many times, \( t(277) = -2.51, p < .05, d = 1.03. \)

It was hypothesized that the participants would consider a health news blog post that had been shared many times to be more credible than one that had been shared a few times (H1). No main effect of sharing frequency was found, \( F(1, 281) = 2.08, p = n. s. \) Therefore, H1 was not supported.

Also, a main effect of source expertise was not obtained, \( F(1, 281) = 3.82, p = n. s. \) Therefore, H3 was not supported.

**Behavioral Intention**

No significant three-way interaction between source expertise, sharing frequency, and framing was found on the behavioral intention to get a colonoscopy. However, there was a two-way interaction effect between expertise and framing, \( F(1, 281) = 4.81, p < .05, \eta^2 = .02. \) As shown in Figure 3, when shared by a layperson, the effect of the loss-framed message (\( M = 3.23, SD = 2.00 \)) on behavioral intention was significantly greater than the effect of the gain-framed message (\( M = 2.50, SD = 1.68, t(277) = -2.26, p < .05, d = 0.40 \)). On the other hand, when the message was shared by a medical doctor, the effect of the gain-framed message (\( M = 3.67, SD = 2.02 \)) on behavioral intention did not differ significantly from the effect of the loss-framed message (\( M = 3.39, SD = 1.93 \)). Therefore, H6 was not supported.

A main effect of expertise was found, \( F(1, 281) = 8.36, p < .01, \eta^2 = .03. \) Specifically, the participants showed a higher behavioral intention to get a colonoscopy when the blogger was a medical doctor (\( M = 3.52, SD = 1.97 \)) than when the blogger
was a layperson ($M = 2.86, SD = 1.88$). Therefore, H4 was supported. However, there was no main effect of sharing frequency. Therefore, H2 was not supported. Also, no main effect of framing was found. Therefore, H5 was not supported.

For behavioral intention, a three-way analysis of covariance (ANCOVA) was also conducted. The results were the same even when fear of colonoscopy and health consciousness were controlled.

**Sharing Intention**

It was tested whether perceived news novelty would be positively related to the intention to share the news with others. A significant correlation between message
Regression Results

<table>
<thead>
<tr>
<th>Intention to share the news regressed on:</th>
<th>Coeff.</th>
<th>T</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>1.3817</td>
<td>2.9303</td>
<td>.0037</td>
</tr>
<tr>
<td>Behavioral Intention (BI)</td>
<td>-.0877</td>
<td>-.6204</td>
<td>.5355</td>
</tr>
<tr>
<td>Public Self-Consciousness (PSC)</td>
<td>.0707</td>
<td>.6415</td>
<td>.5217</td>
</tr>
<tr>
<td>Interaction (BI × PSC)</td>
<td>.1079</td>
<td>3.5577</td>
<td>.0004</td>
</tr>
</tbody>
</table>

Table 2. Regression for moderation

novelty and sharing intention was found, \( r(279) = .26, p < .001 \). Therefore, H7 was supported. It was hypothesized that perceived news novelty would be positively related to the intention to share the news with others (H8). A correlation between these two variables was statistically significant, \( r(279) = .56, p < .001 \). Therefore, H8 was supported.

Finally, the Johnson-Neyman technique was employed with PROCESS (Hayes, 2014) to test the hypothesis that public self-consciousness would moderate the effect of behavioral intention on sharing news about colonoscopy. The analysis shows that the model explains 48% of the total variance against the null model, \( R^2 = .39, F(3,277) = 59.81, p < .001 \). For a model summary, see Table 2 and Figure 4. In this model, a single value of significance was identified at 2.2524 with all statistically significant moderator

<table>
<thead>
<tr>
<th>Public Self-Consciousness</th>
<th>Interaction</th>
<th>SE</th>
<th>t</th>
<th>p</th>
<th>95% Confidence Limits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Lower</td>
</tr>
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<td>2.2524</td>
<td>.1554</td>
<td>.0789</td>
<td>1.9686</td>
<td>.050</td>
<td>.0000</td>
</tr>
</tbody>
</table>

Table 3. Significance value for conditional effect.
values found above 2.2524 on a 7-point scale (Table 3). Conversely, all values below 2.2524 were not statistically different from zero. This indicates that when the participants scored less than 2.2524 on the public self-consciousness scale, public self-consciousness did not have a statistically significant impact on the effect of behavioral intention on sharing news about colonoscopy.

Overall, the analysis demonstrates that when participants showed higher public self-consciousness, their behavioral intention to get a colonoscopy was more likely to positively impact their intention to share the news about colonoscopy with others.
Discussion

This study looked at factors that might impact persuasion in the context of health messages: expertise cues, sharing frequency, and framing. In accord with previous research, the current study confirmed that the source of a message is important to its persuasiveness. Moreover, the current study demonstrated that people do care who is sharing a message. Therefore, the proximal source of the message had a great impact on perceived message credibility and behavioral intention (H3, H4). This means that the same message can be perceived differently simply based on the person who posted it on a blog, Facebook, or Twitter.

Sharing frequency did not impact message credibility and behavioral intention on its own. Yet, it did have an effect on message credibility when the message was loss-framed. Further, it is of great interest that sharing frequency had a negative influence on message credibility. Specifically, when a message had been shared a few times, the participants considered it more credible than when it had been shared just a few times. This result is the opposite of Hypothesis 1 and quite counterintuitive. However, the result suggests that we need to look at sharing frequency from a different angle. J. Y. Lee and Sundar (2013), for example, found that people tend to perceive content as less credible when an expert with many followers has retweeted a message than when an expert with a few followers has done so. If the negative relationship between sharing frequency and
message credibility in their study and the current study were not just by chance, there are at least two possible explanations.

First, sharing frequency may not function as a bandwagon cue. For example, on Facebook, if a person clicks “Like” for a post, that post will be seen on his/her Facebook friends’ walls. In this case, the number of “Likes” could be perceived as the sharing frequency. However, this is not always the case. Similarly, bandwagon cues and sharing frequency may be related somehow, but the latter may not be the same as the former. Thus, a worthwhile direction for future research would be to investigate how people perceive sharing frequency.

The second possible explanation relates to the source. For both studies, the sources were proximal, rather than original. Therefore, when the source of a message is not the original one, sharing frequency might backfire. As source credibility mostly has a positive impact on message credibility, if sharing frequency backfires, the message is perceived less credible. The source credibility analysis in the present study showed that sharing frequency had a negative impact on the three dimensions of source credibility. Therefore, this explanation might constitute the reason for this unexpected result.

Unlike Hypothesis 5, framing did not have a significant impact on the behavioral intention to get a colonoscopy, which is not particularly surprising because the framing hypothesis has not always been supported. For example, Lauver and Rubin (1990) showed that gain- and loss-framed messages had an equal effect on promoting screening tests (detection). Also, O'Keefe and Jensen (2009) suggested that the effect of loss-framed messages on detection behavior is only slightly statistically meaningful.
However, the current study showed that framing exerts effects on behavioral intention as well as on message credibility when interacting with expertise and/or sharing frequency. When the blogger was a non-expert, a loss-framed message was more effective than a gain-framed message in terms of persuasion. This implies that it may be necessary for the framing hypothesis to incorporate other factors to identify some boundary conditions.

The present study also investigated what influences the intention to share information. Consistent with Hypothesis 7, the perceived novelty of a message strongly correlated with sharing intention. Also, when the message actually persuaded people to engage in (or more precisely to state that they would engage in) the targeted behavior, that message, as compared with messages that did not have this effect, was more likely to be shared with others (H8). These results may serve as a basis for finding a fundamental mechanism underlying the sharing of information. In addition, these results have important practical implications for health campaigns. It may be helpful to design a health campaign message that avoids drawing on clichés, so that people would like to share the message with others. Further, in the context of a health campaign, it is clearly important to offer people multiple ways to share the message with others, online and offline, so that any one person who has been persuaded by a message can could spread that message to many.

In the past, the sharing of information among private laypeople principally took place in a private way. However, thanks to new media technology, the sharing of information among this group has taken on an increasingly public character. In this sense,
the relationship between public self-consciousness and information-sharing demonstrated in the current study is important to information-sharing research.

This study, however, does have some limitations. First, the participants were all between 45 and 75 years old. In addition to the fact that such a sample cannot be considered representative, there is the important consideration that members of this group may differ significantly from a broader sample of the population in terms of perceptions about cues available on the Internet. For example, sharing frequency might not mean the same to this group as it does to younger people who are more likely to be habitually exposed to and engaged in new media technology. Second, experimental studies performed online are subject to unexpected and uncontrolled behaviors. This limitation could be somewhat reduced with attention check items (e.g., “For quality-control purposes, please check strongly agree for this question”), but this would not be a perfect solution.

Future research should focus on perceptions pertaining to sharing frequency. As discussed, sharing frequency may not function as a bandwagon cue. However, whether it is a bandwagon cue or not, it did show a significant effect on message credibility and should be explored further in this regard. Further, how message framing works in online settings is a worthwhile research direction to pursue, as the online context presents numerous cues that may interact with framing.
References


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Appendix A: Study Stimuli
NEW YORK (AP) — Everyone is at risk for colorectal cancer, but a sure way to decrease your chances is to get early detection.

Early detection means that finding a cancerous polyp before it has had a chance to spread to other parts of the body. It is recommended that adults aged between 50 and 75 should get a colonoscopy every 10 years.

The benefits of getting a colonoscopy include:

1. Preventing the disease: A colonoscopy can often detect polyps long before a person notices any symptoms. If you get a colonoscopy, doctors can find and remove precancerous polyps before they have a chance to turn into cancer, thus preventing the disease.

2. Making it easy to treat: People whose cancer has not spread have a greater chance of surviving than those whose cancer has already spread. If you catch colorectal cancer early by getting a colonoscopy, it is easier to treat. Finding cancer early also means more treatment choices.

3. Bringing peace in mind: With a colonoscopy, chances are good that you will find out that your colon is healthy, and you can relax and not worry about whether you have colorectal cancer.

Figure 5. Stimulus for the expert, high sharing frequency and gain-frame condition.
Risks of neglecting a colonoscopy

Here is a news article about colonoscopy. I believe it will help you understand the risks of neglecting a colonoscopy.

NEW YORK (AP) — Everyone is at risk for colorectal cancer, but a sure way to increase your chances is to avoid early detection.

Late detection means that finding cancer after it has spread to other parts of the body. It is recommended that adults aged between 50 and 75 should get a colonoscopy every 10 years.

The risks of neglecting a colonoscopy include:

1. Failing to prevent the disease: A colonoscopy can often detect polyps long before a person notices any symptoms. If you do not get a colonoscopy, doctors will not be able to find and remove precancerous polyps before they turn into cancer, thus failing to prevent the disease.

2. Making it hard to treat: People whose cancer has spread have a greater chance of dying than those whose cancer has not spread. If you do not catch colorectal cancer early by avoiding getting a colonoscopy, it is harder to treat. Not finding cancer early also means fewer treatment choices.

3. Harming peace in mind: Without a colonoscopy, you will not find out whether your colon is healthy, and you may keep worrying about whether you have colorectal cancer.

Figure 6. Stimulus for the expert, high sharing frequency and loss-frame condition.
Benefits of Getting a Colonoscopy

Here is a news article about colonoscopy. I believe it will help you understand the benefits of getting a colonoscopy.

NEW YORK (AP) — Everyone is at risk for colorectal cancer, but a sure way to decrease your chances is to get early detection.

Early detection means that finding a cancerous polyp before it has had a chance to spread to other parts of the body. It is recommended that adults aged between 50 and 75 should get a colonoscopy every 10 years.

The benefits of getting a colonoscopy include:

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2. Making it easy to treat: People whose cancer has not spread have a greater chance of surviving than those whose cancer has already spread. If you catch colorectal cancer early by getting a colonoscopy, it is easier to treat. Finding cancer early also means more treatment choices.

3. Bringing peace in mind: With a colonoscopy, chances are good that you will find out that your colon is healthy, and you can relax and not worry about whether you have colorectal cancer.

Figure 7. Stimulus for the expert, low sharing frequency and gain-frame condition.
Risks of neglecting a colonoscopy

Here is a news article about colonoscopy. I believe it will help you understand the risks of neglecting a colonoscopy.

NEW YORK (AP) — Everyone is at risk for colorectal cancer, but a sure way to increase your chances is to avoid early detection.

Late detection means that finding cancer after it has spread to other parts of the body. It is recommended that adults aged between 50 and 75 should get a colonoscopy every 10 years.

The risks of neglecting a colonoscopy include:

1. Failing to prevent the disease: A colonoscopy can often detect polyps long before a person notices any symptoms. If you do not get a colonoscopy, doctors will not be able to find and remove precancerous polyps before they turn into cancer, thus failing to prevent the disease.

2. Making it hard to treat: People whose cancer has spread have a greater chance of dying than those whose cancer has not spread. If you do not catch colorectal cancer early by avoiding getting a colonoscopy, it is harder to treat. Not finding cancer early also means fewer treatment choices.

3. Harming peace in mind: Without a colonoscopy, you will not find out whether your colon is healthy, and you may keep worrying about whether you have colorectal cancer.

Figure 8. Stimulus for the expert, low sharing frequency and loss-frame condition.
Benefits of Getting a Colonoscopy

Here is a news article about colonoscopy. I believe it will help you understand the benefits of getting a colonoscopy.

NEW YORK (AP) — Everyone is at risk for colorectal cancer, but a sure way to decrease your chances is to get early detection.

Early detection means that finding a cancerous polyp before it has had a chance to spread to other parts of the body. It is recommended that adults aged between 50 and 75 should get a colonoscopy every 10 years.

The benefits of getting a colonoscopy include:

1. Preventing the disease: A colonoscopy can often detect polyps long before a person notices any symptoms. If you get a colonoscopy, doctors can find and remove precancerous polyps before they have a chance to turn into cancer, thus preventing the disease.

2. Making it easy to treat: People whose cancer has not spread have a greater chance of surviving than those whose cancer has already spread. If you catch colorectal cancer early by getting a colonoscopy, it is easier to treat. Finding cancer early also means more treatment choices.

3. Bringing peace in mind: With a colonoscopy, chances are good that you will find out that your colon is healthy, and you can relax and not worry about whether you have colorectal cancer.

Figure 9. Stimulus for the non-expert, high sharing frequency and gain-frame condition.
**Risks of neglecting a colonoscopy**

NEW YORK (AP) — Everyone is at risk for colorectal cancer, but a sure way to increase your chances is to avoid early detection.

Late detection means that finding cancer after it has spread to other parts of the body. It is recommended that adults aged between 50 and 75 should get a colonoscopy every 10 years.

The risks of neglecting a colonoscopy include:

1. Failing to prevent the disease: A colonoscopy can often detect polyps long before a person notices any symptoms. If you do not get a colonoscopy, doctors will not be able to find and remove precancerous polyps before they turn into cancer, thus failing to prevent the disease.

2. Making it hard to treat: People whose cancer has spread have a greater chance of dying than those whose cancer has not spread. If you do not catch colorectal cancer early by avoiding getting a colonoscopy, it is harder to treat. Not finding cancer early also means fewer treatment choices.

3. Harming peace in mind: Without a colonoscopy, you will not find out whether your colon is healthy, and you may keep worrying about whether you have colorectal cancer.

Figure 10. Stimulus for the non-expert, high sharing frequency and loss-frame condition.
NEW YORK (AP) — Everyone is at risk for colorectal cancer, but a sure way to decrease your chances is to get early detection.

Early detection means that finding a cancerous polyp before it has had a chance to spread to other parts of the body. It is recommended that adults aged between 50 and 75 should get a colonoscopy every 10 years.

The benefits of getting a colonoscopy include:

1. Preventing the disease: A colonoscopy can often detect polyps long before a person notices any symptoms. If you get a colonoscopy, doctors can find and remove precancerous polyps before they have a chance to turn into cancer, thus preventing the disease.

2. Making it easy to treat: People whose cancer has not spread have a greater chance of surviving than those whose cancer has already spread. If you catch colorectal cancer early by getting a colonoscopy, it is easier to treat. Finding cancer early also means more treatment choices.

3. Bringing peace in mind: With a colonoscopy, chances are good that you will find out that your colon is healthy, and you can relax and not worry about whether you have colorectal cancer.

Figure 11. Stimulus for the non-expert, low sharing frequency and gain-frame condition.
Risks of neglecting a colonoscopy

Here is a news article about colonoscopy. I believe it will help you understand the risks of neglecting a colonoscopy.

NEW YORK (AP) — Everyone is at risk for colorectal cancer, but a sure way to increase your chances is to avoid early detection.

Late detection means that finding cancer after it has spread to other parts of the body. It is recommended that adults aged between 50 and 75 should get a colonoscopy every 10 years.

The risks of neglecting a colonoscopy include:

1. Failing to prevent the disease: A colonoscopy can often detect polyps long before a person notices any symptoms. If you do not get a colonoscopy, doctors will not be able to find and remove precancerous polyps before they turn into cancer, thus failing to prevent the disease.

2. Making it hard to treat: People whose cancer has spread have a greater chance of dying than those whose cancer has not spread. If you do not catch colorectal cancer early by avoiding getting a colonoscopy, it is harder to treat. Not finding cancer early also means fewer treatment choices.

3. Harming peace in mind: Without a colonoscopy, you will not find out whether your colon is healthy, and you may keep worrying about whether you have colorectal cancer.

Figure 12. Stimulus for the non-expert, low sharing frequency and loss-frame condition.
Appendix B: Measures
**Involvement.** How do you feel about colonoscopy? (1 = Not at all, 7 = Very much)

- Involved
- Personally relevant
- Interesting

**Health consciousness.** Please rate your level of agreement with the following statements. (1 = Strongly Disagree, 7 = Strongly Agree)

- I’m alert to changes in my health.
- I’m usually aware of my health.
- I take responsibility for the state of my health.
- I’m aware of the state of my health as I go through the day.

**Public self-consciousness.** Please rate your level of agreement with the following statements. (1 = Strongly Disagree, 7 = Strongly Agree)

- I'm concerned about my style of doing things.
- I care a lot about how I present myself to others.
- I'm self-conscious about the way I look.
- I usually worry about making a good impression.
- Before I leave my house, I check how I look.
- I'm concerned about what other people think of me.
- I'm usually aware of my appearance.

**Source credibility.** Please rate the blogger (Carey Morris) on each of the following words/phrases.

- Unintelligent 1 2 3 4 5 6 7 Intelligent
- Untrained 1 2 3 4 5 6 7 Trained
- Doesn’t care about me 1 2 3 4 5 6 7 Care about me
- Dishonest 1 2 3 4 5 6 7 Honest
- Doesn’t have my interests at heart 1 2 3 4 5 6 7 Have my interests at heart
- Untrustworthy 1 2 3 4 5 6 7 Trustworthy
- Inexpert 1 2 3 4 5 6 7 Expert
- Self-centered 1 2 3 4 5 6 7 Not self-centered
- Not concerned with me 1 2 3 4 5 6 7 Concerned with me
- Dishonorable 1 2 3 4 5 6 7 Honorable
- Uninformed 1 2 3 4 5 6 7 Informed
• Immoral 1 2 3 4 5 6 7 Moral
• Incompetent 1 2 3 4 5 6 7 Competent
• Unethical 1 2 3 4 5 6 7 Ethical
• Insensitive 1 2 3 4 5 6 7 Sensitive
• Stupid 1 2 3 4 5 6 7 Bright
• Phony 1 2 3 4 5 6 7 Genuine
• Not understanding 1 2 3 4 5 6 7 Understanding

Message credibility. The content of the blog post is… (1 = describes very poorly, 7 = describes very well)

• Accurate
• Believable
• Unbiased
• Fair
• Objective
• Informative
• Clear
• Coherent
• Well-written

Attitude. My getting a colonoscopy in the next 12 months is…

• Bad 1 2 3 4 5 6 7 Good
• Unpleasant 1 2 3 4 5 6 7 Pleasant
• Not useful 1 2 3 4 5 6 7 Useful
• Unimportant 1 2 3 4 5 6 Important

Injective norm. Do most people who are important to you think you should or should not get a colonoscopy in the next 12 months? (1 = Definitely should not, 7 = Definitely should)

Descriptive norm. How many of the people who are most similar to you got a colonoscopy in the past year? (1 = None or very few, 7 = All or almost all)

Behavioral intention. Please rate the following statements. (1 = Very unlikely, 7 = Very likely)
• How likely is it that you will INTEND to a colonoscopy in the next 12 months?
• How likely is it that you will TRY to a colonoscopy in the next 12 months?
• How likely is it that you WILL get a colonoscopy in the next 12 months?

**Sharing intention.** I intend to share the information presented in the blog post with others via… (1 = Very unlikely, 7 = Very likely)

• Social media such as Facebook or Twitter
• Email
• Texting
• Conversation
• Other ways (e.g., printing the article out and sharing it in person)

**Message novelty.** Please rate your level of agreement with the following statements. (1 = Strongly Disagree, 7 = Strongly Agree)

• The health information presented in the blog post is new to me.
• I am familiar with the health information presented in the blog post.

**Manipulation check for source expertise.** (1 = Strongly Disagree, 7 = Strongly Agree)

• The blogger, Carey Morris, is an expert in health information.
• The blogger, Carey Morris, is a health professional.

**Manipulation check for sharing frequency.**

• How many times has the blog post been shared via Facebook?
  o Less than 6
  o Over 900
• How many times has the blog post been shared via Twitter?
  o Less than 6
  o Over 900

**Manipulation check for message framing.** Which of the following most accurately describe the information provided by the blog post?

• Mostly about the gains from getting a colonoscopy
• Somewhat about the gains from getting a colonoscopy
• Neither about the gains from getting a colonoscopy nor about the losses from NOT getting a colonoscopy
• Somewhat about the losses from NOT getting a colonoscopy
• Mostly about the losses from NOT getting a colonoscopy

**Gender.** What is your gender?

• Male
• Female

**Age.** In what year you were born?

**Race.** Please specify your race.

• American Indian or Alaska Native
• Asian
• Native Hawaiian or other Pacific Islander
• White
• Other

**Education.** What is the highest level of education you have completed?

• Some high school
• High school graduate
• Some college
• Trade, technical, vocational training
• College graduate
• Some postgraduate work
• Post graduate degree

**Income.** What was your total household income before taxes during the past 12 months?

• $14,999 or lower
• $15,000 - $24,999
• $25,000 - $34,999
• $35,000 - $49,999
• $55,000 - $74,999
• $75,000 - $99,999
• $100,000 - $199,999
• $150,000 - $199,999
• $200,000 or over

**Marital status.** Marital status.

• Separated
• Living with a partner
• Widowed
• Divorced
• Married
• Never been married

**Family history of colorectal cancer.** Do you have any family members or relatives who had or has colorectal cancer?

• Yes
• No