

VISIBILITY OF HEALTH NEWS OUTLET ATTRIBUTIONS ON FACEBOOK

OUTCOMES FOR CREDIBILITY PERCEPTIONS AND RECALL

A Thesis

presented to

the Faculty of the Graduate School
at the University of Missouri-Columbia

In Partial Fulfillment

of the Requirements for the Degree

Master of Arts

by

TAMAR WILNER

Dr. Michael Kearney, Thesis Supervisor

MAY 2018

The undersigned, appointed by the dean of the Graduate School, have examined the thesis entitled

VISIBILITY OF HEALTH NEWS OUTLET ATTRIBUTIONS ON FACEBOOK:

OUTCOMES FOR CREDIBILITY PERCEPTIONS AND RECALL

presented by Tamar Wilner

a candidate for the degree of master of arts,

and hereby certify that, in their opinion, it is worthy of acceptance.

Professor Michael Kearney

Professor Amanda Hinnant

Professor Timothy Vos

Professor Sarah Shipley Hiles

Professor Molly Vetter-Smith

DEDICATION

First, I would like to thank those who helped me discover where I needed to be, and gave me the tools to get me there. Among these I count the fabulous professors at Wesleyan University, especially Brian Fay (now Emeritus) and Steven Horst in the Department of Philosophy. Many kind souls in my working life also helped propel me to this place, by giving me the chance to explore my interests, and in their understanding of my ambition to go the academic route. Foremost among them is Jane Elizabeth, my friend and mentor. Back in 2014, when I knew only that I was desperate to do something about misinformation, she gave me opportunity after opportunity to put my skills to work and gain valuable exposure. Without her I likely would not have met the many talented researchers working in this field today; so in a sense, Jane and the American Press Institute were the start of it all. Jane has always been available to answer every question, reflect sensibly on every gripe, and locate venues for very good cocktails. You've been an incredible support and an inspiration, Jane.

My friends have also been rock-steady support as I griped and moaned about what I wanted to do, without having a clue how to do it. Dr. Cathy Baldwin has always been a giver of career advice par excellence, somehow unknitting balls of anxiety to reveal clear paths of progress. She has been so incredibly giving whilst overcoming every obstacle of her own. Thanks and love to you Cathy, I'm forever indebted.

Stephanie Vance has supported me in so many ways these past four years or so, you'd think I'd paid her for her friendship. As a psychology Ph.D. with deep statistical expertise, she frequently sorted out my confusion about methods and analysis. She was

more than just a sounding board, always eager to hear every dull twist and turn in my evolving career. And, no small feat, she convinced me that I could go beyond 6 miles... to 26.2. Stephanie, all successes of these past few years owe something to you.

Love and thanks go out to Rachel and Karen. Distance and the pressures of life often kept us from being constant conversationalists, but I knew you were there whenever I needed you, and still do. You are some of the best friends a girl could hope for.

Yet more love goes to the ultimate pillars of support, my mom and dad, Esther and Elliot Wilner. You were always, always there to talk, any time of day or night (well, maybe not after 9 p.m.). Your concern over every molecule of my well-being shows that your parental love is simply without measure or equal. Sometimes you were puzzled by my career choices, but in the end you always trusted in me to make the right decisions. And you were always, always proud. I love you both so much.

Finally, to my husband, Will Newton. If my parents were there every time I decided to call up with a minor grievance, you were the sounding board that got bombarded by those evanescent and meaningless particles, day in and day out. In return I got nothing but love, support, and really useful practical suggestions. You never shied from reading a paper draft or an application letter. You and Ranji filled my life with so much laughter and warmth. Too often, I'm sure, you shied from confiding your own stresses so as to offer a more stalwart support for my own. I surely don't thank you enough for all that you do. (Including motivating me on some very long runs.) And to repay you, now I am seeking to replicate your stresses of the early noughties by seeking a Ph.D. of my own! Thank you so much for the patience and the enthusiasm with which

you support the choices I make, and for being my biggest fan. I love you so much. This thesis is dedicated to you most of all.

ACKNOWLEDGEMENTS

My profound thanks go to all the professors at Missouri and beyond who gave me the confidence that I could tackle academic research, and not only do well, but make a career of it. These superb instructors included Ebony Reed, Beverly Horvit, Sarah Smith-Frigerio, Molly Vetter-Smith, Renee Martin-Kratzer, and Keith Greenwood. Special thanks to my friend and colleague Avery Holton of the University of Utah, who for reasons I still can't fathom, saw potential in a new master's student and gave her the opportunity to contribute to her very first conference poster. Avery, Beverly, and Ebony have opened doors for me that will lead to so much more in the future, and I'm very grateful to them.

Finally, my heartfelt thanks to my thesis committee – Michael Kearney, Amanda Hinnant, Tim Vos, Sara Shipley Hiles, and Molly Vetter-Smith – who have offered thoughtful feedback and demonstrated flexibility and understanding throughout the process. Thanks especially to Dr. Hinnant for helping me to get started, and to Dr. Kearney for committing his time on very short notice, and lending his extensive expertise in statistics and R. Mike, you've always been quick to give help and advice, at a time when you had plenty of other things going on – including your own wedding. Many thanks, best of luck and all happiness to you in the future.

TABLE OF CONTENTS

ACKNOWLEDGEMENTS.....	ii
LIST OF TABLES AND FIGURES.....	v
Chapter	
1. INTRODUCTION	1
Purpose Statement	4
Explication of Concepts.....	4
Preview	5
2. THEORETICAL FRAMEWORK.....	6
Theories of Credibility.....	6
Theories of Trust	8
3. LITERATURE REVIEW.....	11
The Rise of Social Media.....	11
The MAIN Model.....	14
Health News Credibility Online.....	15
Findings on Credibility and Social Media	17
Hypotheses	18
4. METHODS.....	23
Experimental Design	23
Participants.....	26
Procedures.....	27
Dependent Variables.....	28
Moderating Variables	29
Internal Validity and Reliability.....	30
Pre-registration	33

5. RESULTS/ANALYSIS.....	35
Descriptive Statistics.....	35
Hypothesis Testing.....	39
6. DISCUSSION.....	45
Internal Validity and Reliability	48
External Validity.....	49
7. CONCLUSIONS	52
REFERENCES	57
APPENDIX	65

LIST OF TABLES AND FIGURES

Table	Page
1. Political affiliation in experimental sample and national polling.....	38
2. Results for testing H_1 and controls	41
3. Results for testing H_2 (Model 2), H_{3a} (Model 3), H_{3b} (Model 4) and controls.....	43
4. Results for testing Model 5	46
5. Results for testing Model 6	47

Figure	Page
1. Age distribution of sample	36
2. Education distribution of sample	37
3. Employment distribution of sample.....	38
4. Results for testing H_{3b}	44

VISIBILITY OF HEALTH NEWS OUTLET ATTRIBUTIONS ON FACEBOOK:
OUTCOMES FOR CREDIBILITY PERCEPTIONS AND RECALL

Tamar Wilner

Dr. Michael Kearney, Thesis Supervisor

ABSTRACT

The internet has become a major source of health information, and the user-generated content found online, especially on social media, makes health misinformation a serious concern (Yang & Beatty, 2016). Two-thirds of U.S. adults now get news from social media (Pew Research Center, 2017c). Social media removes the traditional “gatekeepers” that control the flow of health information. As a result, fringe views can reach many more people (Kata, 2012). At the same time, public trust in and credibility of the U.S. media is at a near-record low (Gallup News Service, 2017; Pew Research Center, 2011). This study therefore investigated how social media users form credibility perceptions of posts from mainstream news organizations, using heuristics formed from both platform features and source cues, based on Sundar’s (2008) MAIN model. A 2x2 factorial, between-subjects design was used, with the independent variables of news outlet visibility (as it normally appears on Facebook, or in an enlarged format) and news outlet reputation (high, as represented by the BBC, or low, as represented by the *Huffington Post*). Results suggest that increasing the size of news outlet attribution on Facebook does indeed increase recall of the outlet name, but the effects of this size increase on credibility perceptions within my small sample of 205 participants were not significant. Alternative explanations are offered through the use of exploratory analysis.

Chapter 1: Introduction

Opinion polls demonstrate that the credibility of and public trust in the U.S. media have fallen near-continuously for several decades (Gallup News Service, 2017; Pew Research Center, 2011). Some journalists contend that resolving this credibility crisis is key to the future of the business (e.g., Hare & Mantzarlis, 2016; Huang, 2016; Stearns, 2016).

But the news consumption experience has changed dramatically in the past several decades, leaving many questions about how audiences evaluate news outlet credibility. Today 85 percent of U.S. adults get news on mobile devices (Pew Research Center, 2017a). And on those tiny devices, the choice of outlets is far vaster than before. A bewildering array of online news startups, blogs, social media accounts, and podcasts offers an endless menu of news options, requiring the audience to make constant credibility assessments (Fletcher & Park, 2017). In addition, social media “atomizes” the news, doling it out in article-sized chunks, in contrast to the immersive, one-brand, full-newspaper experience of the past (Media Insight Project, 2017a). And on social media news is often stumbled across, not sought out (Pew Research Center, 2016). In 2017, two-thirds of U.S. adults got news from social media, with 20% saying they did so often (Pew Research Center, 2017c). But news is not the top reason people use social media. Individuals are drawn to social media – as the name implies – primarily for social reasons, such as seeing photos and updates from their friends and family (Pew Research Center, 2013).

These sweeping changes to news production, presentation and consumption indicate that old theoretical concepts may need to be updated (Bennett & Iyengar, 2008; Holbert, Garrett, & Gleason, 2010). This is particularly true for definitions of trust and credibility. Social media has upended traditional notions of “sender” and “receiver,” possibly invalidating the traditional scholarly notion of source credibility (Eysenbach, 2008), the credibility that audiences attribute to communicators, whether individuals or organizations (Metzger, Flanagin, Eyal, Lemus, & McCann, 2003). Research suggests that one’s credibility judgment of an article on Facebook is based much more on one’s trust in the sharer, than on one’s trust in the originating news outlet; and people also remember who posted the article more than which news outlet produced it (Media Insight Project, 2017b). One can no longer assume that if a person finds the *New York Times* credible, they will feel the same about a *New York Times* article. Instead, it appears that individuals’ message credibility assessments on social media arise from a complex interplay of source-related factors including source expertise, the user’s perceived similarity to the information sharer, and the collective judgment of large numbers of social media users (Edwards, Spence, Gentile, Edwards & Edwards, 2013; Lin, Spence, & Lachlan, 2016; Turcotte, York, Irving, Scholl and Pingree, 2015). These factors further interact with characteristics of the message itself, and of the receiver (Choi & Stvilia, 2015; Van Der Heide & Lim, 2016).

Meanwhile, the internet has become a major source of health information, with individuals increasingly acting as their own health information brokers (Van Slooten, Friedman, & Tanner, 2013). The user-generated content found online, especially on social media, makes health misinformation a serious concern (Yang & Beatty, 2016).

Online media have been implicated as a source of misinformation on topics including vaccines (Betsch et al., 2012; Dubé et al., 2013; Kata, 2010; Kata, 2012) nutrition (Nagler, 2014; Nagler & Hornik, 2012), water fluoridation (Seymour, Getman, Saraf, Zhang, & Kalenderian, 2015), and genetically modified food (Crichton & Petrie, 2015). While health communication scholars have criticized a number of destructive norms and tendencies practiced by science journalists in the mainstream media (Corbett & Durfee, 2004; Jensen et al., 2011), health journalists do follow a number of constructive norms that help them communicate accurate information to the public. These include extensive verification of the facts in their stories, a feeling of responsibility towards the audience, and an understanding that readers might act on the reported information (Hinnant, 2006). In contrast, social media removes the traditional “gatekeepers” that control the flow of health information. As a result, fringe views can reach many more people (Kata, 2012).

Gatekeeping theory has traditionally examined how news producers’ norms, routines and actions maintain “gates” that let some stories, information or viewpoints through, and keep others behind. But as Vos (2015) notes, scholars have recently expanded the framework to encompass not only how information flows through a news organization, but also how it flows to the audience. These flows can then influence reception effects (Thorson & Wells, 2015), especially on social media, whose users are not just audience members but themselves perpetrators of information. As Thorson and Wells write, “Extensive work remains to be done, for instance, looking at the assignment of credibility, relevance, and other judgments dependent on the flows through which a message has traveled on its way to the point of reception” (p. 37). A study of health news

credibility on social media adds to this understanding of how gatekeeping theory applies in a new media environment.

Purpose Statement

Because understanding how people form credibility perceptions of health news on social media is important both for news outlets' economic future and for readers' health knowledge, the purpose of the current study is to further the study of how social media users form credibility perceptions from the complex interplay of platform features and source cues on social media. This thesis will focus on the source cue of the news outlet name, and size of attribution given to that name.

Explication of Concepts

Drawing on the literature, it is possible to delineate a rough definition for "credibility," to aid in the identification of appropriate theory and methods. Credibility can be loosely described as a quality or perceived quality of a message, source or medium that may encompass accuracy, factuality, believability, trustworthiness, reliability, reputability, fairness, lack of bias, completeness, depth, expertise, respect for privacy, concern for community, and not being motivated by money (Hellmueller & Trilling, 2012; Kiouisis, 2001; Meyer, 1988). In general, though, certain credibility frameworks have gained prominence in the research literature. Scholars tend to agree on a threefold typology, distinguishing medium credibility, source credibility, and message credibility (Hellmueller & Trilling, 2012; Metzger et al., 2003). In particular, my study is concerned with the latter two concepts, and the leading definitions that have emerged for each. I follow McCroskey & Teven (1999) in defining source credibility as the perceived competence, trustworthiness and goodwill of a source of communication. I follow

Appelman & Sundar (2016) in defining message credibility as “an individual’s judgment of the veracity of the content of communication,” comprising accuracy, authenticity and believability.

Preview

This thesis is organized as follows: I begin by outlining the theoretical framework of my study, explaining the development of theories on credibility and trust, and describing the challenges posed to those theories by the rise of social media. Sundar’s (2008) MAIN model of credibility heuristics arose to address the challenges of online media, and I will use it to narrow the focus of my study. After a summary of research findings on health news, credibility and social media, I will outline my hypotheses and explain my study design. This used the Mechanical Turk online platform to engage U.S. residents 40 and older in a four-condition experiment. I then present results, discuss limitations and implications, and elaborate on possibilities for future research.

Chapter 2: Theoretical Framework

The purpose of this study is to investigate the influence of medium-specific and news source-specific cues on users' credibility judgments of Facebook posts. As outlined in the introduction, such a study is necessary because social media has dramatically changed how people consume news and how they think about sourcing and credibility.

Theories of Credibility

To measure credibility effects, we need to understand something of credibility theory's long history. Credibility research began more than 60 years ago, and the concept has received much attention since then (Hellmueller & Trilling, 2012), with the object of study spreading from interpersonal relations to the mass media, and finally to interactive media (Appelman & Sundar, 2016). Credibility measures have been used to predict media effects (Kohring & Matthes, 2007; Appelman & Sundar, 2016), and could also be used to study information processing, source confusion on the part of audiences, and how messages are perceived on social media (Appelman & Sundar, 2016).

Researchers have grown concerned, however, about the lack of consistency in credibility measures (Appelman & Sundar, 2016; Metzger et al., 2003; Hellmueller & Trilling, 2012). Hellmueller and Trilling's analysis of 75 quantitative media credibility studies found that researchers frequently included outcomes, predictors or correlates of credibility in their instruments, mistaking them for part of the credibility construct. Examples include items asking if content was "well written," or if "it provides me with useful information" (p. 16). Appelman and Sundar report that before 2016, there was no scale exclusively measuring message credibility.

Assessing some of the most cited literature on credibility, however, we do find certain common components. Both Meyer (1988) and Appelman and Sundar (2016) propose believability as one major dimension of credibility. Most instruments, not surprisingly, include indicators of perceived accuracy or factuality (Appelman & Sundar, 2016; Kiousis, 2001; Meyer, 1988). Some indicators also emphasize the selection of facts and topics, and whether the outlet tells the “whole story” (Hellmueller & Trilling, 2012; Meyer, 1988). Several deal with the relationship between media outlet and community; notable among these is Meyer’s (1988) focus on affiliation with the community. Kiousis (2001) suggests that five indicators are repeatedly used throughout the literature: factuality, financial independence, respect for privacy, concern for the community, and whether the medium can be trusted.

Certain frameworks do stand out as having gained particular traction in the literature. Scholars largely agree on a threefold typology, distinguishing medium credibility, source credibility, and message credibility (Hellmueller & Trilling, 2012; Metzger et al., 2003). Source credibility tends to focus on the entity that appears to the receiver as a source of communication, which could include a media channel (such as a particular magazine) or a writer; the term does not generally refer to the quoted or paraphrased “sources” that journalists draw upon for their reporting (Sundar & Nass, 2001). McCroskey & Teven’s (1999) factor analysis, establishing competence, trustworthiness and goodwill as three core constructs of believability, is widely used as a guiding definition of source credibility.

Until recently there were few coherent definitions of message credibility, but Appelman & Sundar’s (2016) definition has emerged as one well suited for studies of

online media. Appelman and Sundar define message credibility as “an individual’s judgment of the veracity of the content of communication” (p. 63), with three reflective indicators: accuracy, authenticity and believability.

Theories of Trust

Closely related to credibility is the concept of trust. Although trust and credibility are often conflated in popular discourse, and occasionally in the research literature, I have found them to be two different (yet overlapping) concepts. Because scholars have examined credibility more thoroughly than trust, in both theoretical and empirical work, I choose to focus my study on an examination of credibility. But it is worth briefly delineating the two terms, to clear up theoretical confusion. This delineation is also important because of trust’s use as a concept in the journalism profession (Bergman, 2016; Hare & Mantzarlis, 2016; Harris, 2016; Schultz, 2016; Stearns, 2016; Trewinnard, 2016), and widespread concern about polls that find trust in journalism falling dramatically (Gallup News Service, 2017; Pew Research Center, 2011). Finally, delineation is important because of the value offered by several key empirical studies on trust, which offer important motivation for my study, but whose choice of terminology somewhat limits their generalizability.

Theoretical and empirical studies of trust have not occupied communication scholars nearly as much as credibility has, being more popular among researchers from sociology, psychology, economics, politics and organizational theory (Lee, 2011). As Jakob (2010, p. 593) notes, “Compared to credibility research almost no significant theories of media trust nor a larger body of empirical research focusing on trust exists.” The two concepts feel naturally linked, however, and some researchers have tried to

explicate this connection. Certain scholars argue that credibility is an aspect of trust (Brants, 2013; Tsfatı & Cappella, 2003). Others argue that trustworthiness is a dimension of credibility (Kiousis, 2001). Several components have been proposed as aspects of both trust and credibility, albeit by different researchers. These include accuracy, reliability and completeness (Brants, 2013; Hellmueller & Trilling, 2012; Kiousis, 2001; Kohring & Matthes, 2007; Meyer, 1988). Hellmueller & Trilling (2012) argue that while credibility research tends to operate on a fairly micro level, looking at factors such as message source and medium characteristics, trust research looks more widely at the media's function in society. Others use the terms fairly interchangeably (Kohring & Matthes, 2007; Turcotte et al., 2015). In short, communications researchers have had little success finding consensus on a definition or operationalization of trust (Kohring & Matthes, 2007).

I would argue that trust and credibility must be distinguished. Loosely speaking, trust is a disposition or relationship in which one party expects or feels a reliance on another, in spite of some uncertainty (Tsfatı & Cappella, 2003). Trust, therefore, cannot be an exact synonym for credibility, since credibility is a quality or attribute that one perceives. Given that communications theories of credibility have been explicated to much greater detail, including specific dimensions that pertain to medium, source and message credibility, my study draws mainly from credibility literature rather than that on trust. While it may be tempting to draw inferences from my results for the study of trust in journalism, such inferences are likely to be imprecise.

However, among studies of trust, I would make special mention of research conducted by the Media Insight Project, a collaboration of the Associated Press, the

American Press Institute, and NORC (formerly the National Opinion Research Center) at the University of Chicago. The collaboration's experiments suggest that people are more trustful of the news media they use most often, compared to "the news media" in general; and that perceptions of trustworthiness and accuracy on Facebook depend more on users' trust in the information sharer than on trust in the originating news outlet (Media Insight Project, 2017a; Media Insight Project, 2017b). Since there is significant crossover between trust and credibility, we might expect that some of the same patterns would apply to users' credibility assessments. In particular, my study examines the role that news source attribution plays in perceived message credibility. In doing so I hope to shift an important strain of empirical research towards a more theoretically grounded arena, which may allow a deeper understanding of the research problems at hand.

Chapter 3: Literature Review

The Rise of Social Media

As news went online in the 1990s and early 2000s, researchers began to recognize the potential of new media and platforms to affect credibility judgments, and to challenge pre-existing definitions of credibility. This process accelerated greatly with the introduction of social media, including Facebook in 2004 and Twitter in 2006. Eighteen percent of U.S. adults now report getting news often from social media, according to a Pew Research Center (2016) survey, compared to 28 percent who get news often from news media websites or apps, 20 percent from print newspapers, 25 percent from radio, and 57 percent from television. It's worth noting that even if Facebook is not the dominant source of news in people's lives, it delivers news to most of its users at least some of the time: 66 percent of Facebook users in the Pew poll said they have received news on the platform at some point. The process of news consumption on social media also differs significantly from that used with traditional media, given that social media serve a variety of functions besides providing news. Fifty-five percent of digital news consumers get online news while in the midst of performing other digital tasks, while only 44 percent specifically seek out the news (Pew Research Center, 2016).

The rise of these platforms has caused scholars to reexamine many aspects of credibility research – and challenged scholars to rethink gatekeeping (Vos, 2015). Social media, like blogs, allow any member of the public to write and publish his or her own thoughts. This democratization of publishing, beyond the reach of traditional gatekeepers, immediately raises questions about the accuracy of online content. The move online has

shifted us from a news ecology of scarcity to one of abundance (Metzger, Flanagin, & Medders, 2010). With the overwhelming amount of information now available to us, the responsibility for credibility assessment falls not to journalists, but to consumers. The current situation challenges readers to not only vet the credibility of the media they consume, but to think skeptically about the information they pass on to others. The new skills expected of audience members are supremely challenging, given that much of this content does not come from well-known news outlets, and therefore lacks the traditional credibility markers that readers and viewers used to rely upon (Westerman, Spence, & Van Der Heide, 2014). As Van Der Heide and Lim (2016) memorably put it, the essential research problem has become, “How do we know who to believe in an environment where *anyone* can say *anything* about *anything* to *everyone*”? (p. 673, emphasis in original).

At the same time that the dangers of online information awakened research interest in credibility, scholars found that the new forms of media also called into question some of their previous theories and models. Most notably, the advent of internet-based media complicated previous ideas about what counted as a source – already a somewhat confused notion. When credibility studies began under the interpersonal communications banner, “sources” were conceived of as individual speakers (Metzger et al., 2003). As media studies took up credibility research, “source” was variously used to describe reporters, individual news outlets, and media companies (Mackay & Lowery, 2011). Online media brought additional layers of complexity: as Sundar (2008) elaborates, you could receive an email from a friend containing information she found on a newsgroup. That might have come from another member of

the group, who got it from a newspaper website, which picked it up from a wire service. Each level of sourcing that the end user is privy to could have its own level of perceived credibility (Sundar, 2008).

Some researchers also realized that the very process of credibility assessment could work very differently online, compared with the old media of print, television and radio. Online media such as social networking sites allow users to judge credibility collaboratively, but too frequently, researchers only consider credibility assessment as an individual process (Metzger et al., 2010).

Scholars investigating the relative credibility that audiences ascribe to new and old media found mixed results. In surveys, people claim to have low levels of trust in what they read on social media. A recent poll found that only 4 percent of U.S. adults said they have a lot of trust in the information they get on social media, compared to 18 percent for national news organizations and 22 percent for local news organizations (Pew Research Center, 2016). Twenty-seven percent of college graduates say they have little to no trust in the news and information on Facebook, compared to 18 percent of those who attended some college and 14 percent of those with a high school education or less (Media Insight Project, 2016). But in focus groups with 109 adults across the U.S., Metzger et al. (2010) found that users employed social networking sites to help them evaluate and verify information and sources. And an analysis of 2015 survey data from 21,524 participants across 11 countries found that when it comes to online media, individuals with low trust in news media are more likely to prefer non-mainstream news sources, such social media, blogs and digitally native news outlets (Fletcher & Park, 2017) – a finding that supports the popular conception of social and alternative media as

a haven for those who have lost faith in the “system.” On the other hand, Fletcher & Park found that this correlation varies significantly by country and is fairly weak in the United States.

The MAIN Model

Researchers responded to changes in media technology with new or adapted theories of credibility. Among the most notable of these are Sundar’s (2008) MAIN (Modality, Agency, Interactivity, and Navigability) model, which attempts to explain how technological affordances – capabilities that shape the nature of a medium’s content – may influence credibility judgments, independently of perceived source credibility or content credibility. Sundar outlines four broad affordances of most digital media that may cue cognitive heuristics relating to information quality and in turn feed credibility assessments.

“Modality” refers to whether the information is text-based, visual, aural, or audiovisual. “Agency” refers to the varied ways in which online media refers to, and users conceive of, sources and originators. Agents could be sources in the more traditional sense of news organizations, or they could be collections of friends, mediating platforms such as Google News, or devices such as computers and televisions.

“Interactivity” has no universal definition, but it involves a combination of active participation on the part of the medium user, more dynamic content, and responsiveness to user needs. “Navigability” refers to features that allow the user to virtually transport herself – through hyperlinks, for example.

The four affordances – Modality, Agency, Interactivity, and Navigability – each cue between six and nine distinct heuristics, for a total of 29 heuristics. However, Sundar

does not suggest that every heuristic is triggered in every case. Rather, the four affordances can influence perceived credibility in a variety of ways, including by intensifying or diminishing content-based credibility effects. Sundar therefore suggests that researchers study how technological affordances cue various heuristics, and what the impact of those heuristics on credibility perceptions is – and only once this knowledge is sufficiently advanced should researchers move on to study the interactions between cues and between heuristics.

Because of the confusion Facebook introduces over sourcing, and unexpected credibility effects as demonstrated by the Media Insight Project (2017b) study, my study focuses on the Agency affordance. In particular, the results of my study may shed light on the authority heuristic (in which a source is judged to be expert or official, conferring credibility on the content).

Health News Credibility Online

In the realm of health information, it becomes especially crucial to understand the complex factors governing online credibility perceptions, because those perceptions influence what people believe, remember and act upon, and therefore their actual health and well-being. Health information presents one of the most vexing online credibility problems, and it represents an excellent domain in which to test Sundar's model. The internet is a major source of health information (Van Slooten, Friedman, & Tanner, 2013). People increasingly act as their own health information brokers, given that doctors now spend less time talking with their patients (Van Slooten, Friedman, & Tanner, 2013). Some scholars argue that the format of social media both reflects and encourages the trend towards a postmodern medical paradigm, in which patients play a greater decision-

making role, and trust in experts is eroded (Kata, 2012). Social media also encourages users to tell personal stories. While such stories could arguably serve prosocial purposes, they also paint a distorted picture – for example, in the case of negative experiences with vaccines (Betsch et al., 2012; Dubé et al., 2013).

Online misinformation can affect both attitudes and behavior and is one factor increasing the risk of epidemics of vaccine-preventable diseases (Poland & Jacobson, 2012). One study used peer-reviewed publications to catalogue countries where anti-vaccine movements affected pertussis vaccinations, and found that in these countries, morbidity and mortality from pertussis were 10-100 times higher than in the control countries (Gangarosa et al., 1998). The “everyone’s a publisher” attributes of the internet and in particular social media have therefore made health misinformation a serious concern, and credibility assessment crucial (Yang & Beatty, 2016).

Meitz, Ort, Kalch, Zipfel and Zursteige (2016) found that study participants judged online news as more credible than Facebook. At the same time, people are much more likely to find health-related posts on Facebook trustworthy and accurate when they are shared by trusted celebrities, but originate from an unknown news outlet, compared with posts produced by a trusted news outlet but shared by a non-trusted celebrity (Media Insight Project, 2017b). This study, while valuable, did not draw on or contribute to theoretical development in the field of credibility studies. My proposed study therefore seeks to add to the literature about the ways people evaluate credibility of online health information, specifically on social media.

Findings on Credibility and Social Media

Roughly since the launch of Facebook in 2004 and Twitter in 2006, media scholars have carried out empirical studies of how people form credibility judgments on social media. Sundar's MAIN model has influenced many if not most of these studies, acting as a spur to investigate particular cues and heuristics, and helping researchers to place their findings into a larger context of online credibility effects. Given the many cues and heuristics that Sundar proposes, studies employing his model have been wide-ranging in many respects. Few, however, investigate agency cues on Facebook.

Testing three types of agency-provoked heuristics against health-related content on Twitter, Lin et al. (2016) found that the strongest credibility effects came from the authority heuristic, in which users react to suggestions of an official or expert source. Two other types of agency heuristics also affected credibility judgments, but to a lesser degree. These were the identity heuristic, in which users perceive a source as a similar individual, associate or peer; and the bandwagon heuristic, in which the user values the wisdom of the crowd. The authors also found cumulative effects from various combinations of these cues.

Edwards and colleagues (2013) found that mock Twitter pages that featured higher scores from Klout, an automated indicator of user influence, were rated higher on two of McCroskey and Teven's (1999) three credibility dimensions, namely competence and character. Higher Klout scores did not, however, result in users being viewed as more caring.

A rare study employing the MAIN model for research on Facebook, as well as Twitter, found that personalized posts about mental health – that is posts, that situated

factual information within the context of personal experience – earned higher credibility ratings on Facebook than on Twitter (Yilmaz & Quintero Johnson, 2016). On the other hand, the experiment found that posts stating the factual information without the context of personal experience earned higher credibility ratings on Twitter than on Facebook. Yilmaz and Quintero Johnson theorized that the depersonalized tweets triggered the machine heuristic, which Sundar (2008) explains as the perception that a machine’s role in content production makes that content more objective and reliable.

Looking beyond the MAIN model, Turcotte et al. (2015) found that content recommendations by a single Facebook friend that the participant perceived as an “opinion leader” not only increased trust in the news outlet producing the content, but also increased intention to seek out news from the media outlet in the future. Looking at the role of comments on Facebook, rather than at the persuasiveness of those who share links, Winter, Brückner and Krämer (2015) found that negative user comments diminished the persuasiveness of news stories. The authors appear to conflate this persuasiveness with credibility, however, and did not publish the four items they used to measure participants’ judgments of credibility and text quality.

Taken as a whole, these findings suggest that a variety of agency-related heuristics, stemming from bandwagon, authority and identity cues, is likely to play a role when people judge the credibility of Facebook posts. To date, however, scholars have not focused on the relative contributions of these cues on Facebook.

Hypotheses

A number of mediating factors are likely to affect the relative influence of various agency cues on Facebook. As with any credibility formation, user factors of

demographics, user involvement and technology proficiency will likely play a part (Choi & Stvilia, 2015). Another set of variables that may play a part in agency-driven credibility assessment, though it is held constant on Facebook, is design characteristics.

On Facebook, some critics have argued, crucial pieces of information can go unnoticed. Most significantly, the uniform design of a Facebook feed, with news outlet names written in small, gray font, might mean that the names of these news outlets go overlooked (Gutterman, 2016). The names are written in all capital letters, which helps to maximize their allotted space (Robb, 2014) – but the space given to those letters is a small percentage of the post’s overall visual real estate.

Fogg’s (2003) prominence-interpretation theory proposes that people judge credibility in two stages: first, they must notice something (prominence); second, they must make a judgment about it (interpretation). It follows that if an individual does not notice a cue, he cannot use it to make a credibility judgment. “Prominence” is the likelihood that an element will be noticed or perceived, and this depends in part on individual characteristics such as user involvement, experience, aims, and cognitive traits. But it also depends on content and design – prominence in the more objective, physical sense, or what I will refer to as “visibility”. For example, Fogg writes, a large picture of a person in the center of a web page will likely be noticed.

If the small size of news outlet names on Facebook results in reduced prominence, then the potential influence of the news source name as an agency cue might be diminished on Facebook, as compared to the news outlet’s own website, or as compared to print and broadcast. It therefore seems reasonable to postulate that increasing the size of the outlet name news font (the “increased visibility condition,” as opposed to the

outlet's usual appearance on Facebook, what I will call the "normal visibility condition") would make that name more noticeable. We would then expect social media users to exhibit greater recall of the outlet name.

H₁: Recall of a news outlet name will be higher in the increased visibility condition, than when the outlet name is presented with the normal visibility.

Supporting Fogg's (2003) prominence-interpretation theory, several pieces of empirical evidence suggest that website design can influence credibility assessments. Yang and Li (2016) note that the background color of a website can act as an agency affordance cue, helping to communicate the identity of the source. This suggests that Facebook's universal blue background obliterates an opportunity for news outlets to hint at their brand and, by extension, their credibility. An experiment using simulated Facebook posts "shared" by well-known public figures, and drawing content from either the Associated Press or an invented news outlet, found that only about 2 in 10 participants could remember the news outlet (Media Insight Project, 2017b). In contrast, about 5 in 10 participants could remember who shared the post. The researchers suggest that this recall differential could account for a significant amount of the trust effects detected, namely that trust in the sharer had a greater impact on message assessment than did trust in the news outlet. But, the writers ask, "might that change if Facebook made the reporting source label more prominent?" (p. 10-11). It is notable that there was a significant difference in recall between the Associated Press and invented news outlet conditions: 26.5% in the AP conditions recalled correctly, versus 13% in the fake outlet condition. Still, a 26.5% recall rate does point to Facebook users failing to notice, embed or retain information about news organizations. In contrast, Pew Research Center (2017b)

found that when following links to online news articles, Americans could remember the news organization about 56% of the time. But they were much more likely to recall the name when they found the news through the news organization's own email or text alert, than when they found it through social media or a friend's recommendation.

Since Fogg (2003) theorizes that prominence prompts noticing, and that noticing a cue is a necessary condition for using that cue in credibility judgments, we can postulate:

H₂: Perceived message credibility will be higher in the increased visibility condition, than when the news outlet name is presented with the normal branding visibility.

We may also expect that when we increase the prominence of the news outlet name, that name will play a larger role in message credibility assessments, compared to the less prominent condition. Therefore:

H_{3a}: Perceived message credibility will be higher in the high reputation condition than in the low reputation condition.

H_{3b}: The difference in message credibility between the high reputation and low reputation conditions will be bigger in the increased visibility condition than in the normal visibility condition.

However, the relationship between prominence, recall and credibility may be complex. While it is likely that prominence improves recall, and both prominence and recall of a cue increase the cue's application to credibility judgments, recall is likely not necessary for a cue's use in credibility assessment. The Media Insight Project (2017b) results suggest participants may have been influenced by cues they could not recall. Only two in 10 participants remembered the news outlet name. But of those who saw the AP

article shared by someone they didn't trust, 29 percent said the information was well reported and trustworthy. One possible explanation for this outcome is that the news source name did inform these participants' credibility assessments – and that while the memory of their assessment persisted until they were questioned, the name of the actual news outlet did not.

Another potential confounding factor is that design features on Facebook might give the platform's content a greater overall credibility, as compared with headlines on a news website. People often look for organized information to help them minimize processing time and effort, and a cleaner, more attractive presentation seems to help them achieve that (Jung, Chung, & Rhee, 2017). Such strategies can help individuals deal with information overload, Jung and colleagues write. They found that even small variations in line breaks, bullet points and headings affected users' credibility judgments, with the more attractive formats increasing perceptions of credibility. It is arguable that reading headlines in Facebook's consistent format and font speeds up information processing, relative to a newspaper website, and therefore could result in higher perceived credibility. In fact, Jung and colleagues found that attractive presentation was a greater predictor of perceived message credibility than source expertise was.

Chapter 4: Methods

Experimental design

This study uses a 2x2 factorial, between-subjects design, with the independent variables of news outlet reputation (high or low) and branding visibility (increased or normal). This is a good method for my question because I am seeking to understand the role of the news organization name and of Facebook design elements in message credibility perceptions. A controlled, randomized trial offers the highest external validity for answering questions of cause and effects. While the researcher cannot conclude that the experiment's manipulation was necessarily the cause of the observed phenomena, she can bolster the case for such an argument by controlling as much as possible for confounding factors.

Stimuli and independent variables. Each participant was presented with a series of four mock Facebook posts, with limited functionality. This presentation did not contain links to any further pages. The posts each included one health news item posted by a fictional "friend." I included posts on four different health topics: Parkinson's disease, heart attacks, Alzheimer's, and peanut allergies. The topics were chosen because of their relatively non-controversial nature, their relative appeal to an over-40 audience (see Participants, below), and their variety (to try and prevent individuals' knowledge or attitudes on particular health topics from unduly influencing results).

The news items, based on real Facebook posts and articles by the BBC, were varied along two dimensions: news outlet reputation, and news outlet branding visibility. All stimuli are shown in the Appendix.

Reputation. For the “high reputation” conditions, the posts were attributed to the BBC. An open-ended item in a survey of 8,728 U.S. users of mainstream news websites (Kearney, 2017) found that the most trusted news outlets are, in order, *The Economist*, public television, Reuters, the BBC, National Public Radio, PBS, *The Guardian*, *The Wall Street Journal*, *The Los Angeles Times* and the *Dallas Morning News*. From this list I eliminated *The Economist* from consideration because, while the outlet does occasionally cover health, it tends to focus more on policy and business than on actionable health advice. The next choice, “public television,” is not a specific news outlet. It is unclear how well the London-based Reuters is known in the U.S., while in a study of 2,901 Americans with online access, 76 percent of respondents said they recognized the BBC name (Pew Research Center, 2014). The Pew study, like Kearney’s work, found the BBC to be among the most trusted outlets. And Pew also found that compared to other outlets, the BBC has some of the most consistent trust across the ideological spectrum. I therefore chose the BBC for the “high reputation” conditions.

For the “low reputation” conditions, the posts were attributed to the *Huffington Post*. Kearney (2017) found that the 10 least trusted news outlets (that is, those most likely to be named in an open-ended question as not trusted by respondents) were Occupy Democrats, *Buzzfeed*, *Breitbart*, “social media,” U.S. president Donald Trump, *Infowars*, *Yahoo*, “internet,” *The Huffington Post* and *The Blaze*. Since Occupy Democrats, *Breitbart* and *Infowars* are focused on politics rather than health, and both have a highly partisan readership, we can eliminate them from consideration. Likewise we can rule out Trump, “social media” and “internet,” because these are not news outlets; and *Yahoo*, because it frequently posts to Facebook content created by other news outlets, but under

the *Yahoo* brand, thus creating a confounding layer of source confusion. Distrust in *Buzzfeed* is fairly even across the political spectrum, but using this outlet's name creates a believability issue: *Buzzfeed* is fairly well known for its distinctive voice, include "clickbait" style headlines. Pairing the *Buzzfeed* name with straightforward, hard news-style health headlines could well create confusion that could confound the results of this study.

I therefore chose to use *The Huffington Post* for my "low reputation" news outlet. The choice is perhaps not ideal, because trust in *The Huffington Post*, as far as it exists, is heavily skewed towards liberals. But trust in this outlet is still low among all political persuasions, with 18% of respondents trusting it for news about government and politics, compared to 36% for the BBC (Pew Research Center, 2014). *The Huffington Post* recently rebranded itself as *HuffPost* and introduced a new logo, but as these changes are fairly recent, the old name and logo are likely to be more recognizable. I therefore used the name "*The Huffington Post*" together with the older logo.

Visibility. For the "normal" condition, the news organization name appeared at the standard size and color (grey) used on the Facebook platform. As when a friend shares a news article in real life, the post did not include a news outlet logo. For the "increased visibility" condition, the news organization name appeared in a black font, bold, and slightly larger (approximately 12 pixels, compared to 10 pixels for the normal condition). In the increased visibility condition, the posts also featured the news organization's logo, at a size of 52 pixels by 52 pixels.

Except for these two manipulated variables, the health news posts were identical in all conditions; they included the same wording in the headline and text, and the same

photo, from condition to condition. The fictional “friends” sharing the Facebook post had the same profile photos, from condition to condition.

Participants

My study focuses on individuals 40 years and older. Older people are more likely than millennials to say that a news outlet’s status as “one they’ve always used” is important (Media Insight Project, 2016), which indicates that they are more likely to place intrinsic value on the name brand of a news outlet. Yang and Beatty’s (2016) meta-analysis of 20 studies, all investigating the correlation between perceived expertise or trustworthiness and perceived credibility, found that older people are more skeptical of health information. Specifically, Yang and Beatty found that estimated mean effect size decreased by .01 for every year that average participant age increased. Mean ages of studies in the review fell between 14.4 and 51.9, with 11 of the 20 studies having a mean age under 30, and 19 having a mean age under 40. Metzger et al. (2013) speculate that because of their greater life experience, older Internet users have cognitive access to more authority-related cues.

I have therefore defined my population as U.S. residents age 40 years and older, which is older than the U.S. median of 37.9 years old (U.S. Census Bureau, n.d.), but young enough to allow a sizeable pool of potential respondents on the Mechanical Turk platform, which tends to skew young (see below). The population of U.S. adults 40 and above numbered 153,190,269 as of 2016 (researcher’s own calculations, drawing from U.S. Census Bureau, 2014). For this study, I sought 50 individuals per condition, for a total of 200 participants, but ended up with slightly more participants (see Descriptive Statistics, below.) The required sample size was calculated using G*Power, a publicly

available tool for computing power analyses. My goal was to obtain .8 power, to detect a medium effect size of .2 at the standard .05 alpha error probability.

Participants were recruited using Mechanical Turk (MTurk), an online marketplace where participants complete tasks (Amazon, n.d.) in return for small payments, usually a dollar or less (Amazon, 2017). Participants who completed the study were paid \$1 each, funded by the researcher. The experiment was advertised using the following recruitment text:

TITLE: U.S. residents 40+, answer a survey about health news on social media

DESCRIPTION: Take a survey about health news on social media. Participants in this survey must live in the U.S. and must be 40 years or older.

KEYWORDS: Survey, experiment, social media

Procedures

First, I carried out an online pilot study with eight acquaintances (two per condition) to test that the conditions in my study did successfully manipulate the desired independent variables of news outlet reputation and branding visibility. Each pilot participant completed the experiment in full, and was also asked six additional questions: 1) Why do you think you noticed/did not notice the name of the news organization? 2) Had you heard of this news organization before you took this survey? 3) Did the name of the news organization name seem unusually small, unusually large, or about what you'd expect? 4) Did you notice a logo for the news organization? 5) Why do you think you did/did not notice a logo? 6) Do you have any feedback for the researchers on the design of this study? I then conducted brief telephone interviews with each participant, gathering any further feedback they had on the manipulations, instrumentation, or overall

experimental design. Based on the pilot study, I was satisfied that my four sets of stimuli manipulated the desired independent variables.

For the experiment itself, my intention was to screen participants to ensure they met the criteria for inclusion in this study. To be included, all participants needed to be 40 or over, and they must be current Facebook users. In addition, task creators on MTurk can rate users on their task performance, and it is possible to request users with 95% or higher approval ratings. I included this 95% threshold as a criterion for my participants.

Before they began the experiment proper, participants were provided with an informed consent document, and were told that they were indicating their agreement by continuing with the experiment. The experimental stimuli and questions were then presented. Random sampling assigned each participant to one of four conditions:

- a) High reputation news outlet and normal branding visibility.
- b) High reputation news outlet and increased branding visibility.
- c) Low reputation news outlet and normal branding visibility.
- d) Low reputation news outlet and increased branding visibility.

Dependent Variables

Following the presentation of the stimuli, participants were asked a series of questions about the manipulated post, loading onto two dependent variables: 1) message credibility, and 2) news outlet recall. Users were prevented from using their “back” button to review the stimuli, and they were prevented from re-starting the experiment.

Message credibility. This variable was operationalized using Appelman and Sundar’s (2016) message credibility instrument. This consisted of an overarching question, “How well do the following adjectives describe the news item you just read?”

following each of the stimuli posts. The question was followed by the three adjectives – accurate, authentic and believable – that comprise Appelman & Sundar’s message credibility instrument. Each adjective was paired with a seven-item Likert scale, from 1 (describes very poorly) to 7 (describes very well).

News outlet recall. Recall was tested with two questions. Early on after viewing all the stimuli, participants were asked the open-ended question, “What news organization wrote the news items?” An open-ended question was used as it is the truest measure of recall, since there are no answer choices to trigger participants’ memories. Later in the experiment, participants were asked to select the news outlet name they saw from four multiple-choice answers. This question is included mainly as a manipulation check and is described in the Internal Validity and Reliability section, below.

Moderating Variables

I included a number of covariates for exploratory analysis purposes:

News outlet credibility. This was measured using Meyer’s (1988) outlet credibility instrument, which he also calls a “believability index.” This asks participants to indicate the extent to which the news outlet is described by five descriptions: fair, unbiased, tells the whole story, accurate, and can be trusted. For consistency’s sake, I converted the index from a five-point to a seven-point Likert scale.

News outlet favorability. This consisted of one question, “What is your opinion of this news organization?”, to be answered on a seven-point Likert scale, from “strongly like” to “strongly dislike.”

Daily Facebook usage. The screener question on Facebook use also served as a moderating variable, asking participants to specify the number of hours they use

Facebook per day, on average, from a scale of 0 to 8 hours (using a slider with increments of 0.1 hours).

Motivation for Facebook use. This consisted of one question, based on Pew Research Center (2013): “For each of the following, is this a major reason, minor reason, or not a reason you use Facebook?” Participants rated each motivation on a seven-point Likert scale. The motivations presented were “to share my photos or my videos,” “to post personal updates,” “to chat or message with friends and family,” “to get news about events and issues that involve more than just my friends and family,” “to see what friends and family are up to,” “to play games,” “to see photos and videos from friends and family,” and “other.”

Demographics and politics. Participants were then asked a series of demographic questions, covering gender, race/ethnicity, education level, employment status, and household income. Finally, participants were asked their political affiliation with a seven-point Likert scale, from “strong Democrat” to “strong Republican.”

After participants completed the experiment, the online testing platform thanked them for their participation, asked for their MTurk identification number, and provided a randomly generated code. Participants entered the code into MTurk, and when I confirmed a match between ID and code, I paid all qualifying participants.

Internal Validity and Reliability

A multiple-choice question asked participants, “What was the topic of the posts?”, and presented four choices: sports, politics, health and music. Participants who selected an answer other than health were considered to have failed this attention check, and their responses were excluded from further analysis. Additional participants were recruited,

and randomly but evenly distributed among the four conditions, until I collected at least 200 valid responses.

Originally, I intended for the question, “Did you notice the name of the news organization that wrote the items,” to serve as an attention check in combination with the multiple-choice question, “Please indicate which news organization wrote the news items you saw.” If the results of these questions do not align with each other, or with the open-ended news source recall question, I reasoned, the participant will have failed to pay attention. However, upon reflection I decided that many of these combinations of responses would be poor indicators of whether the respondent was paying sufficient attention to the experiment – especially given that a key concept being investigated was itself the notice that users pay to news attributions on social media. In the end, I eliminated participants for failing two recall-related attention checks. One involves providing a correct open-ended recall but an incorrect multiple-choice recall. In the second such check, I eliminated participants who answered “yes” to the “noticing” question, without providing an answer to the open-ended question.

I explain further below.

Open-ended recall and multiple-choice recall. If the former answer is incorrect and the latter is correct, this is a natural demonstration of a person’s tendency to better recall when prompted. If the open-ended recall is correct but the multiple-choice recall is incorrect, however, this appears to indicate a lack of attention. No individuals failed in this manner. One participant did fail to respond to the multiple-choice question, having answered the open-answer question correctly, but as this person also failed to complete the experiment, he or she was eliminated from analysis.

Open-ended recall and “Did you notice the name?” If an individual indicates that he or she noticed the name, but also gets the open-ended recall question wrong, there are several possibilities. One is simply that the participant made a mistake about which news organization published the post. One respondent made this error. Another possibility is that the participant misunderstands what counts as a news organization. One respondents made this error, saying “Facebook.” Neither of these indicate a failure of attention, but instead a failure of memory or understanding. However, if a participant answers that they noticed a name, but doesn’t provide the name, that does seem to indicate a lack of attention.

If a participant says “No” to the question about noticing, but does in fact answer the open-ended question correctly, this would seem to indicate a lack of attention. No participants failed this test. However, 6 participants answered “Not sure” despite having answered the open-ended question correctly. The most likely explanation for this is confusion about what the question is asking, or perhaps a lack of confidence. It does not seem reasonable to assume a lack of attention.

Multiple-choice recall and “Did you notice?” If a participant says they noticed the news organization name, and then gets the multiple-choice question wrong, they could simply be mistaken. If a participant says they did not notice the name, but then answers the multiple-choice question correctly, this indicates that their memory may have been jogged by the choices presented to them.

In creating their message credibility instrument, Appelman and Sundar (2016) considered measures of validity, including content, criterion, and construct validity, and of reliability, including item and scale reliability. Their content validity check was

essentially a consideration of face validity, which they assessed as high. For criterion validity, the researchers performed a paired t-test between results from their instrument and journalists' credibility assessments of the same articles, and found a Cohen's d of .619, which they said corresponds to a moderate to large effect.

For construct validity, Appelman and Sundar compared their instruments with measures that they eliminated from consideration over the course of their study, including whether the message was authoritative, reliable, reputable and trustworthy; and with related constructs that they also tested for, including liking and newsworthiness. Positive correlations indicated a high convergent validity. Conversely, they found that models yielded a better fit when message credibility and related variables were allowed to freely covary, compared to when the researchers assumed all variables to be perfectly correlated. This demonstrates high discriminant validity.

For item and scale reliability, the researchers found a Cronbach's α of .87, suggesting high reliability; and they also found that a significant proportion of variance for each of the three scales could be explained by the latent construct of message credibility.

For the five-item measure of news outlet credibility, Meyer (1988) found an alpha of .83, with each individual item having an alpha of .78 to .80. Each item correlated with the five-item total at between .603 and .678.

Pre-registration

After running the pilot test, but before running the full experiment, I pre-registered my study with the Open Science Framework, a free service of the Center for Open Science (Wilner, 2018). Pre-registration commits the scholar in advance to a plan

for gathering and interpreting data, ensuring the integrity of the hypothesis testing process, and may help other researchers who wish to build upon the study (Center for Open Science, n.d.)

Chapter 5: Results and Analysis

Descriptive statistics

I collected 260 results in all. In the first two runs, totaling 19 results, I failed to fully restrict the audience for the experiment announcement to the target population of people 40 years and older. Therefore, these 19 results were disregarded. Another 2 individuals began the experiment but did not move beyond the first question. I then dropped participants who did not complete the message credibility questions.

The remaining results were then examined for attention check failures. Four respondents failed the attention question, “Which of the following best describes the topic of information displayed in the mock Facebook posts?,” by answering “sports” or “politics,” or giving no answer. This left a total of 207 valid responses. Then I removed those who failed the recall-related attention checks described above. This brought the total number of valid responses to 205.

The survey platform Qualtrics randomly assigned these participants to four conditions, with the size of each condition resulting as follows:

High visibility, high reputation: 53

High visibility, low reputation: 52

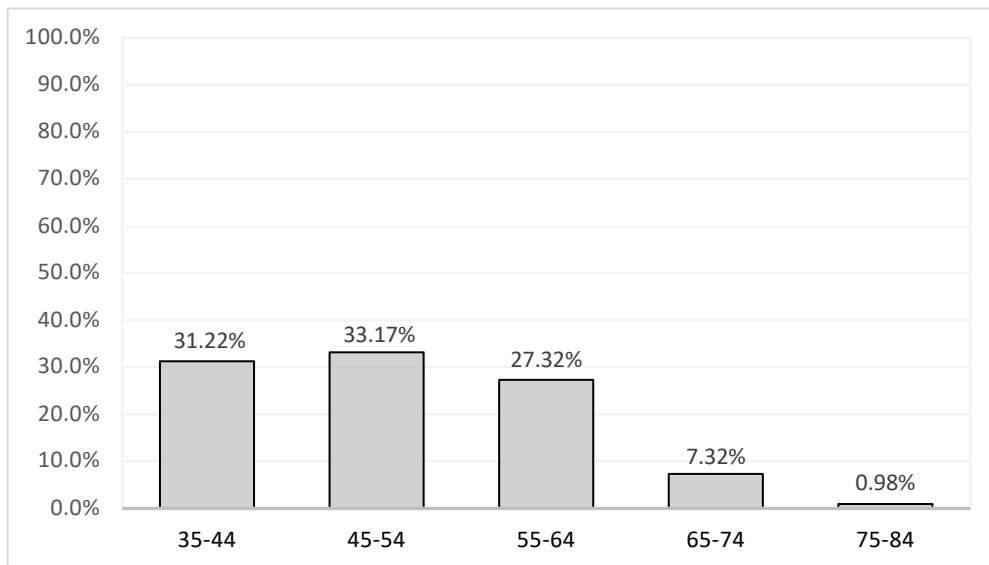
Normal visibility, high reputation: 47

Normal visibility, low reputation: 53

Age and gender. The mean age of participants was in the range between 45 and 54 years old (see Figure 1). The participants were 61.5% female, which is substantially higher than the proportion in the national over-40 population, which is 52.7% female and 47.3% male (researcher’s calculation, from U.S. Census Bureau, 2010).

The proposal for this thesis called for stratified sampling, to achieve near-identical gender proportions among the conditions. This step was eliminated due to lack of time and expertise. The random sampling did result in a fairly equitable gender distribution across conditions.

Figure 1. Age distribution of sample

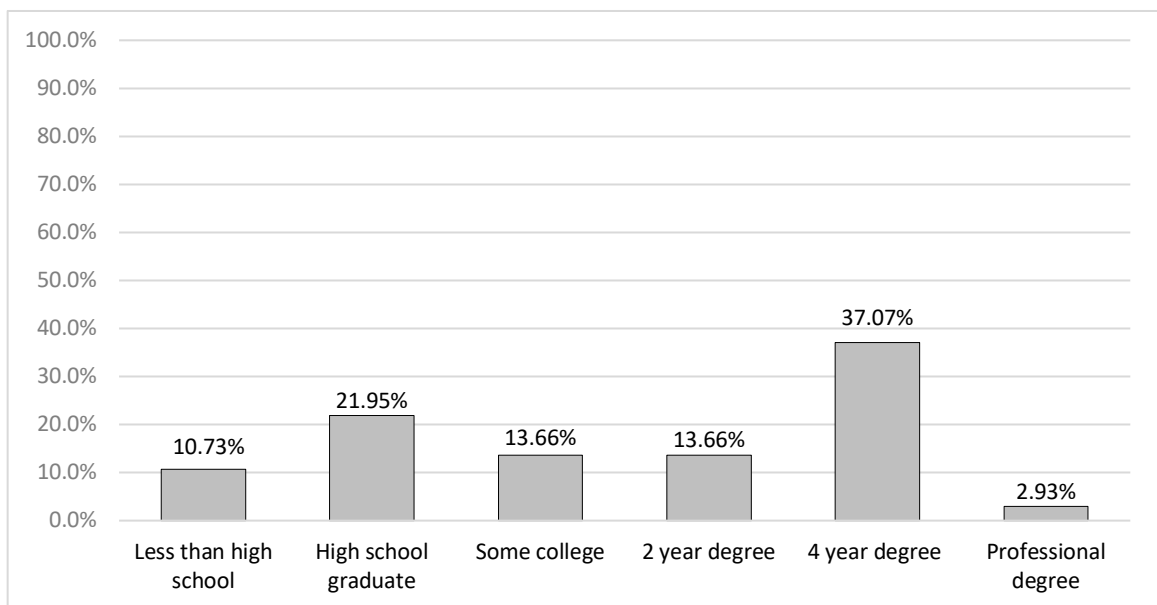


Race, education, employment, income, politics. Racially, my sample was 87.3% White, exceeding the 73% national average for the over-40 population. Only 1% of participants were Hispanic or Latino, and only 6.8% Black, compared to 10% and 11%

respectively for the U.S. over-40 population (researcher’s calculations, based on U.S. Census Bureau, 2016a).

Mean education for my sample fell between “some college” and “2 year degree” (see Figure 2). In my sample, 89.3% had a high school diploma or higher, comparable to the 87% for the U.S. adult population aged 25 and over (U.S. Census Bureau, 2016b). Forty percent of my sample had a bachelor’s degree or higher, compared to 30% in the U.S. Census.

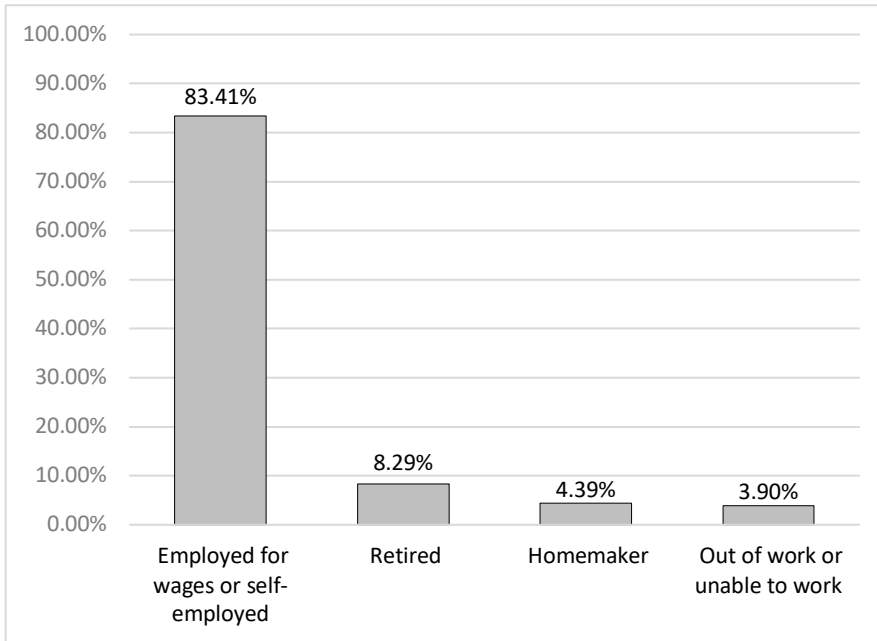
Figure 2. Education distribution of sample



Mean income was in the \$50,000 to \$59,000 range, placing my sample on par with the median U.S. household income of \$57,617 (U.S. Census Bureau, 2016c).

Distribution for employment is shown in Figure 3, below. In contrast, in March 2018 the seasonally adjusted unemployment rate was 4.1 percent (Bureau of Labor Statistics, 2018).

Figure 3. Employment distribution of sample



Mean political affiliation for the sample was between “lean Democrat” and “neither Democrat nor Republican.” On the seven-point scale, if we consider responses between -1 and 1 as being equivalent to Independents, with responses less than -1 being Democrats and responses more than 1 being Republicans, we find the following distribution (Table 1), which I have compared to Pew Research Center (2018) data.

Table 1. Political affiliation in experimental sample and national polling.

	Democrat	Independent	Republican
Sample data	35%	45%	20%
Pew (2018) data	33%	37%	26%

Message credibility. Mean message credibility was 4.64 on a seven-point scale, with a standard deviation of 1.01. There was slight variation among the component items of this construct: mean accuracy was 4.38, mean authenticity was 4.68, and mean believability was 4.85.

Recall. I coded correct answers for the open-answer, news outlet recall question. Common misspellings, abbreviations and partial matches of the correct answer counted as correct. If a given respondent offered more than one news organization name, his or her response counted as incorrect. If Qualtrics data indicated that a respondent saw the question but did not answer it, this lack of response counted as an incorrect answer. Based on this coding, 62% of participants were able to recall the name of the news organization when answering an open-ended question. Standard deviation was 0.49.

Of the false open-ended recall questions, some in particular are worth noting: 2 answered with names of medical journals mentioned in the snippets, 2 answered “your friend” or “friend shared a link,” and 3 answered “Facebook.” These answers all point to the problem of what constitutes a source online, and perhaps a small measure of public confusion over what a news organization is.

Daily Facebook use. Mean time spent on Facebook was 1.3 hours, with a standard deviation of 1.29. The most popular motives for using Facebook were, in order, seeing what friends are up to (5.67), seeing photos (5.58), chatting (4.89), getting news (3.76), posting updates (3.42), other (3.32), and playing games (2.1).

Hypothesis testing

I ran all models in the R statistical environment (R Core Team, 2018) to test all hypotheses. To test H_1 (Recall of a news outlet name will be higher in the increased

visibility condition, than when the outlet name is presented with the normal visibility), I performed a logistic regression. The interpretation of logistic regression is similar to that of an ordinary least squares regression, except instead of interpreting the coefficients as the unique effect of the visibility condition on accurately recalling a news outlet's name, we use the logistic regression coefficients (log odds) to describe the *constant* effect of the high-visibility condition on the likelihood that a respondent accurately recalls the news outlet's name. The results show that visibility and recall were significantly positively correlated. The estimates and standard errors for this model can be found in Table 2.

Table 2. Results for testing H₁ and controls.

		Model 1	
		Estimate	(S.E.)
(Intercept)		-3.21*	-(1.49)
Age		-0.33	(0.20)
Gender	Male	0.07	(0.38)
Race/ethnicity	Black or African American	1.08	(1.18)
	Latino or Hispanic	1.69	(2.18)
	Other	0.14	(1.68)
	White	2.46*	(1.04)
Income		0.04	(0.06)
Education		0.11	(0.12)
Employment	Homemaker	0.13	(0.87)
	Out of work or unable to work	0.15	(0.90)
	Retired	0.66	(0.74)
Daily Facebook usage		-0.14	(0.15)
News as Facebook motive		0.04	(0.10)
Political affiliation		0.02	(0.10)
News outlet favorability		0.11	(0.13)
Visibility	High	2.35***	(0.39)
N		205	
Deviance		209.47	
χ^2		61.90***	

*p ≤ 0.05 **p ≤ 0.01 ***p ≤ 0.001

To test H₂ (Perceived message credibility will be higher in the increased visibility condition, than when the news outlet name is presented with the normal branding visibility), I performed an ordinary least squares regression, which explained 32% of the variance in message credibility, $F = 5.7$, and p-value, $p < .001$. However, the coefficient for visibility was not statistically significant. On the other hand, exploratory analysis found a statistically significant correlation for participants who are motivated to use Facebook for news, and a very significant correlation with positive opinion (favorability)

of the featured news organization. This suggests that pre-existing attitudes towards news organization, and use of Facebook for news, both predispose individuals to make greater use of the news organization name in their message credibility assessment (see Table 3).

To test H_{3a} (Perceived message credibility will be higher in the high reputation condition than in the low reputation condition), I performed an ordinary least squares regression, which found a small negative correlation that was not statistically significant. H_{3a} was therefore not supported. Again, however, there was an extremely significant effect detected for news organization favorability, and a somewhat significant effect detected for Facebook news use (see Table 3).

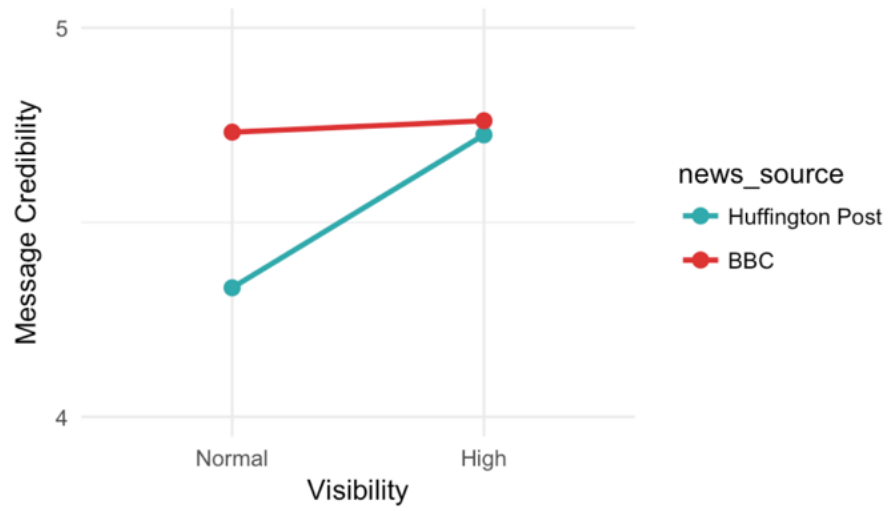
To test H_{3b} (The difference in message credibility between the high reputation and low reputation conditions will be bigger in the increased visibility condition than in the normal visibility condition), I performed an ordinary least squares regression. Not only did this fail to find a significant effect, but the evidence suggests the opposite effect (see Figure 4). Here again, significant interactions were detected for Facebook news use and news organization favorability (see Table 3).

Table 3. Results for testing H₂ (Model 2), H_{3a} (Model 3), H_{3b} (Model 4) and controls

	Model 2		Model 3		Model 4	
	Estimate	(S.E.)	Estimate	(S.E.)	Estimate	(S.E.)
(Intercept)	2.14***	(0.53)	2.19***	(0.53)	2.04***	(0.54)
Age	-0.01	(0.07)	-0.01	(0.07)	-0.01	(0.07)
Gender						
Male	0.23	(0.14)	0.23	(0.14)	0.25	(0.14)
Race/ethnicity						
Black or African American	0.35	(0.43)	0.35	(0.43)	0.41	(0.43)
Latino or Hispanic	0.23	(0.73)	0.20	(0.73)	0.14	(0.73)
Other	0.94	(0.57)	0.93	(0.57)	1.03	(0.57)
White	0.58	(0.37)	0.56	(0.37)	0.60	(0.37)
Income	-0.01	(0.02)	-0.01	(0.02)	-0.01	(0.02)
Education	0.03	(0.04)	0.03	(0.04)	0.02	(0.04)
Employment						
Homemaker	0.22	(0.31)	0.23	(0.31)	0.21	(0.31)
Out of work or unable to work	0.00	(0.33)	-0.01	(0.33)	0.01	(0.33)
Retired	-0.34	(0.25)	-0.34	(0.25)	-0.33	(0.25)
Daily Facebook usage	-0.07	(0.05)	-0.07	(0.05)	-0.07	(0.05)
News as Facebook motive	0.09*	(0.04)	0.09*	(0.04)	0.09*	(0.04)
Political affiliation	0.03	(0.04)	0.03	(0.04)	0.02	(0.04)
News outlet favorability	0.35***	(0.05)	0.36***	(0.05)	0.36***	(0.05)
Visibility	0.05	(0.13)	.		0.25	(0.18)
News outlet reputation	.		-0.07	(0.13)	0.15	(0.18)
Visibility (high) x outlet reputation (high)	.		.		-0.42	(0.25)
N	205		205		205	
RMSE	0.86		0.86		0.86	
R ²	0.32		0.32		0.33	
adj R ²	0.26		0.27		0.27	

*p ≤ 0.05 **p ≤ 0.01 ***p ≤ 0.001

Figure 4. Results for testing H_{3b}



Chapter 6: Discussion

The results suggest that only H₁ was supported. H₂, H_{3a} and H_{3b} do not appear to be supported. Manipulating the visibility of the news outlet attribution had a significant effect on participants' recall of the news outlet name, an unsurprising outcome. However, higher visibility did not have a statistically significant effect on message credibility. One might presume that at least the higher reputation condition would see such an effect; but this also turned out not to be the case, as the results for H_{3b} found.

One possible explanation is that the participants in the high-visibility condition “noticed” the news outlet name in a somewhat subconscious manner. This would agree with the findings of the Media Insight Project (2017b), in which recall did not seem to be a necessary precursor for using a source name in a credibility judgment. We can test this explanation with an exploratory analysis, comparing participants' performance on the open-answer recall question with their responses on the multiple-choice recall question. To do so I ran an explanatory model, Model 5 (see Table 4). This found that the interaction between visibility and news source explained 16.9% of the variance on correct answers for the open recall question, and the effect was statistically significant. But another exploratory test, Model 6 (see Table 5), found that the interaction did not have a statistically significant effect on answers for the multiple-choice recall question, which seems to undermine the conjecture that participants noticed the news outlet in a subconscious manner.

Table 4. Results for testing Model 5

		Model 5	
		Estimate	(S.E.)
(Intercept)		-2.64	(1.56)
Age		-0.41	(0.21)
Gender	Male	-0.03	(0.41)
Race/ethnicity	Black or African American	1.04	(1.23)
	Latino or Hispanic	2.11	(2.68)
	Other	0.05	(1.76)
	White	2.46*	(1.10)
Income		0.03	(0.06)
Education		0.14	(0.13)
Employment	Homemaker	0.29	(0.94)
	Out of work or unable to work	0.27	(0.98)
	Retired	0.64	(0.78)
Daily Facebook usage		-0.22	(0.16)
News as Facebook motive		0.01	(0.11)
Political affiliation		0.09	(0.11)
News outlet favorability		0.24	(0.14)
Visibility	High	1.60**	(0.53)
News outlet reputation	High(BBC)	-1.79***	(0.50)
Visibility (high) x outlet reputation (high)		1.69*	(0.77)
N		205	
Deviance		195.22	
χ^2		76.15***	

* $p \leq 0.05$ ** $p \leq 0.01$ *** $p \leq 0.001$

Perhaps a better explanation has to do with participant characteristics. Positive opinion (favorability) of the featured news organization was a strong predictor of perceived credibility, and participant usage of Facebook for news was also a predictor. It appears the news favorability item may have overwhelmed the effect of news source, and such dispositional factors may matter more than the news outlet name or size of

Table 5. Results for testing Model 6

		Model 6	
		Estimate	(S.E.)
(Intercept)		-1.11	(1.74)
Age		-0.28	(0.23)
Gender	Male	-0.33	(0.44)
Race/ethnicity	Black or African American	-1.00	(1.41)
	Latino or Hispanic	0.12	(2.95)
	Other	1.42	(1.87)
	White	0.83	(1.26)
Income		0.11	(0.07)
Education		0.10	(0.14)
Employment	Homemaker	-0.28	(1.02)
	Out of work or unable to work	1.14	(0.97)
	Retired	0.19	(0.82)
Daily Facebook usage		-0.331*	(0.17)
News as Facebook motive		0.10	(0.12)
Political affiliation		-0.05	(0.12)
News outlet favorability		0.14	(0.14)
Visibility	High	2.588***	(0.72)
News outlet reputation	High (BBC)	-1.618***	(0.49)
Visibility (high) x outlet reputation (high)		0.86	(0.92)
N		205	
Deviance		172.887	
χ^2		76.714***	

*p ≤ 0.05 **p ≤ 0.01 ***p ≤ 0.001

attribution. This indicates that news outlets' quest for greater credibility with the public will likely not be easily solved by simple design changes, because the media must deal with segments of the public that are particularly difficult to influence: Those who have the lowest opinions of the organization to start with, and those who are less engaged with news on Facebook. In a sense, the instinct to increase the news outlet attribution size

comes from a belief that this will highlight the credibility of the brand; but when credibility is uneven to begin with, the credibility effects of such a change are minimal.

Particularly surprising was the rejection of H_{3a}, which seemed to propose something rather common-sense: that the outlet generally regarded as having a higher reputation would confer this credibility to the stimulus message. An explanation is that the participants in my study did not tend to hold the same opinions of these news outlets as participants in previous research. We can investigate this possibility by examining other attitudinal measures included in the study. Mean news organization favorability was 5.08 for the BBC, versus 4.24 for the Huffington Post – a far greater difference than found for mean message credibility, which was 4.74 and 4.54 respectively. News outlet credibility, meanwhile, averaged 4.72 for the BBC and 4.15 for the Huffington Post. It appears, for some reason, that general dislike did not translate into credibility perceptions for the messages in question – or even into a very convincing difference in outlet credibility perceptions. Perhaps homogenizing medium cues – the overall design of a Facebook post, which varies little regardless of the news outlet featured – reduced differences in credibility perceptions, or perhaps in ways that matter for outlet credibility perceptions, my sample was not as representative as samples in previous studies.

Internal validity and reliability

I re-tested the internal consistency of Appelman and Sundar's message credibility instrument, seeking a Cronbach's α of .7. My own reliability test for the three-item message credibility construct, comparing across the four topics featured in the experiment, gave a Cronbach α of .95, suggesting very high reliability.

A chief concern here, as Appelman and Sundar (2016) pointed out when reporting on their own online study, is the testing environment. Online, it is difficult to tell whether participants are paying attention to the stimuli and questions, and one can't know if they are actually trying to do external verification of experimental materials (for example, by searching online for the news outlets or items). Appelman and Sundar note that while these conditions impair internal validity, they enhance external validity at the same time, because compared to an in-person laboratory experiment, an online study more closely resembles normal viewing conditions.

External validity

External validity threats may include interaction of selection and treatment, due to the use of MTurk. Studies have shown that samples drawn from MTurk are often more representative than in-person convenience samples, and only slightly less representative than several popular national surveys (Berinsky, Huber, & Lenz, 2012; Huff & Tingley, 2015). Users of MTurk tend to skew young (Berinsky et al., 2012), but my recruitment screened for age. The platform's users tend to be more White, more female, lower-earning, slightly more educated, and lean slightly more Democratic than the U.S. population as a whole (Berinsky et al., 2012).

In my study, external validity threats are posed by several significant differences between my sample and the target population. My sample was disproportionately White and female. Blacks and Latinos were underrepresented. On the other hand, mean income was on par with the U.S. median.

Huff & Tingley (2015) reported concerns specifically about older individuals on MTurk: Compared to older participants in the Cooperative Congressional Election

Survey, older MTurk users tend to be less interested in the news, more liberal, and less likely to vote. This lower interest in the news, especially, poses a potential confound to my results, and it is one I did not test or control for (although we could speculate about its correlation with the variable of Facebook use for news). Perhaps my independent variables had less of an effect on this sample than they would with a more representative sample.

Party affiliation leaned only slightly Democratic in my sample, which lends validity to my results. I attempted to control somewhat for the interaction of news outlet name and political leaning by avoiding news outlets widely regarded as having a liberal or conservative slant, such as MSNBC or Fox News. But given that Republicans have significantly more negative opinions about the national media overall (Doherty, Kiley, & Johnson, 2017), and given accelerating efforts by prominent Republicans to portray the mainstream media as “the enemy” (Davis & Grynbaum, 2017), and that MTurk samples tend to lean left, there was a risk that my sample would place a disproportionately high value on the names of the BBC and *Huffington Post*. This seems not to have been an issue. Trust in the *Huffington Post* does lean left (Pew Research Center, 2014), but results for H₂ show that political affiliation did not have a significant effect on credibility perceptions in my study.

The setting could have posed some external validity issues, however. Although MTurk is an online setting, it does not simulate the full Facebook environment. In particular, MTurk participants are seeking different gratifications from participating in an experiment, than they do from using Facebook. People are driven to use Facebook primarily for social reasons, such as seeing photos and updates from friends and family

(Pew Research Center, 2013). Under real-world conditions, the appearance of a news story could surprise or even annoy, if it cues the intrusiveness heuristic cited in Sundar's (2008) MAIN model. In my experiment, this particular provocation would likely be reduced. But the unnatural setting may also set up demand characteristics. Knowing that they are taking part in an experiment, participants may look at the post more critically, or pay more attention to the outlet name than they otherwise would. I tried to make the experiment feel more "real" by copying the Facebook layout. In addition, the effects of social desirability on news credibility judgments among strangers were likely minimal.

Chapter 7: Conclusions

This experiment sought to establish the roles of medium- and news outlet-specific cues in forming credibility assessments on Facebook, specifically by investigating the role of the authority heuristic proposed by Sundar's (2008) MAIN model. By evaluating the relationships among news outlet, branding visibility, outlet recall and message credibility, I hoped to gain insight into how people think about credibility on a platform that has radically changed news consumption.

My results indicate that increasing the size of news outlet attribution on Facebook does indeed increase recall of the outlet name, but the effects of this size increase on credibility perceptions are difficult to determine. With my limited sample size, I did not find a straightforward effect of size on credibility. However, when we look at participants who are motivated to use Facebook for news, then credibility effects appear. Likewise, those who have a positive opinion of the news organization appear more likely to have their credibility assessments influenced by the size increase.

These findings point to the importance of several heuristics. To a limited extent, the experiment reveals evidence that news outlet name is used as an authority heuristic on Facebook, and that a greater size for the attribution can facilitate the use of this heuristic. Evidence suggests that the use of the organization name as an authority heuristic may occur in a conscious rather than subconscious manner, although the people most likely to use this heuristic – those who use Facebook for news, and those with a positive opinion of the news organization – are arguably the most likely to think consciously about the name of the particular news outlet when they make credibility judgments.

While my own take on credibility theories suggested that the authority heuristic would play an important role, and we would expect a larger font to increase the availability of news outlet-related cues, this approach may have over-emphasized the importance of the authority heuristic on Facebook. Results suggested that general dislike for a news organization did not necessarily translate into low credibility perceptions. This supports the idea of one or several opposing forces to the authority heuristic on Facebook. One particularly worth investigating is the uniformity of Facebook's design, which could either obliterate opportunities for authority signaling or could itself be an overpowering credibility cue of its own. My results suggest that the user may downplay individual news outlet names in the face of the platform's overwhelmingly homogenous design. Even increasing the size of the news outlet name, and adding a logo, may not be sufficient to overcome the effects of this uniformity.

Referring back to the MAIN theory (Sundar, 2008), we may conceive of Facebook's uniform design operating on a number of heuristic levels. Yang and Li (2016) found that the background color of a website can act as an agency affordance cue, communicating the identity of the source. In this way we may think of the Facebook design as signaling Facebook's own authority as a credible source. Jung et al. (2017) found that uniform design aids processing time and enhances credibility perceptions, to the extent that attractive presentation predicted message credibility better than source expertise. This study is perhaps best understood as supporting the heuristic of "flow," under the Interaction affordance. Flow is "the level of immersion achieved by the user when experiencing a system," (Sundar, 2008, p. 87) and we can understand a uniform and attractive design as facilitating flow. Sundar notes this heuristic is usually triggered in the

negative when there is a break in the flow, which suggests that attempts to alter Facebook's normal appearance may even backfire.

Previous studies have also found effects for other MAIN model heuristics that may influence credibility perceptions on Facebook. These include the identity heuristic, in which users perceive a source as similar to themselves; and the bandwagon heuristic, in which the user values the wisdom of the crowd (Lin et al., 2016). One key limitation of my research is that, in an effort to reduce the number of experimental conditions, I did not explore all of the potential source cues provided by Facebook, and therefore did not examine these important heuristics. Notably, I sought to evaluate the strength of the authority heuristic by manipulating the size of the news outlet attribution, but I did not manipulate characteristics of the Facebook "friend." Future studies could introduce manipulations on news sharer characteristics, to try and determine the effects of those cues relative to news outlet cues.

My study also serves as a reminder that the literature on credibility and trust continue to exhibit a great deal of theoretical confusion. It is unfortunate that journalism research has gone down the path of explicating credibility almost to the exclusion of any serious theoretical consideration of trust, while polling for years has asked about the public's trust in the media. No perfect solution exists for this problem, but development of trust theories and polling using credibility measures would both be welcome developments. At the same time, I recognize that the gap between the concepts is large: As Hellmueller & Trilling (2012) point out, the trust concept makes more sense on the macro scale of media's function in society. How to build empirical studies such as mine,

focused on small manipulations and credibility outcomes, into a larger plan for building societal trust in the media, is far from obvious and will be a massive undertaking.

I would note that Appelman and Sundar's (2016) message credibility instrument is quite new, and further testing of it would be welcome. While the researchers found the measure to be highly valid and reliable, and my own testing found very high reliability, more testing is needed to build evidence for the measure's validity overall, and especially in a social media environment.

Several practical implications emerge from this research. One, as suggested above, is that news organizations should not be concerned about the size of outlet attribution on Facebook. This sizing does not seem to affect people's ability to use the news outlet name as a credibility signal – and my results suggest that perhaps the smaller size is even beneficial to high-quality news organizations. The news outlet name as credibility signal matters more to those who use Facebook as a news source more, and those who already have a high opinion of the news organization, suggesting that the highlighting of this signal does not provide a simple solution for news organizations seeking to build the credibility of their messaging. My results suggest that with a larger sample size, one might even find that such a manipulation benefits low-reputation organizations more than high-reputation organizations.

For health news in particular, this suggestion is concerning because a great number of unreliable health news sources appear to reside on social media (Miranda & Lee, 2017). If increasing the size of the outlet attribution actually disproportionately helps less reliable sources, then it is not a solution we should urge Facebook to take up. The results of this study, together with previous research, suggests heuristics other than

authority may play a more important role in people's judgments about health news on social media. These influences include the bandwagon and identity heuristics. Such findings are worrying for those concerned about health misinformation and the viability of the journalism profession, but perhaps a more realistic appraisal of the strength of these cues will allow journalism and health practitioners to come up with creative methods of battling the misinformation problem.

I would note that the two values of the news source variable in my study, although varying in their perceived reputability, are both professional news organizations that do follow a certain number of journalistic standards. I might have found different results if I instead paired a reputable news outlet with the name of an actual, frequent purveyor of misinformation, or with a made-up name. These could be fruitful options to consider for future research.

In addition, based on my findings, other scholars may wish to further explore the effects of Facebook design attributes on credibility perceptions. I have only isolated one aspect of the Facebook design; most have yet to be described, let alone experimentally tested, in the research literature. Perhaps most importantly, researchers should look to study the importance of uniformity: the regular, predictable design that makes all Facebook posts look more or less the same. The interplay of design-based prominence with various source cues, and the resulting effects on credibility, could be a rich vein for future research.

References

- Amazon.com. (n.d.). Amazon Mechanical Turk: FAQ [Web page]. Retrieved July 10, 2017, from <https://www.mturk.com/mturk/help?helpPage=main>
- Amazon.com. (2017). Amazon Mechanical Turk - All HITs [Web page]. Retrieved July 10, 2017, from <https://www.mturk.com/mturk/findhits?match=false>
- Appelman, A., & Sundar, S. S. (2016). Measuring message credibility. *Journalism & Mass Communication Quarterly*, 93(1), 59–79. <http://doi.org/10.1177/1077699015606057>
- Bennett, L. W., & Iyengar, S. (2008). A new era of minimal effects? The changing foundations of political communication. *Journal of Communication*, 58(4), 707–731. <http://doi.org/10.1111/j.1460-2466.2008.00410.x>
- Bergman, C. (2016, November 10). How the news media can work to regain the trust of America. *Medium*. Retrieved from <https://medium.com/cory-bergman/how-the-news-media-can-work-to-regain-the-trust-of-america-ce763f3d001d>
- Berinsky, A. J., Huber, G. A., & Lenz, G. S. (2012). Evaluating online labor markets for experimental research: Amazon.com's Mechanical Turk. *Political Analysis*, 20(3), 351–368. doi:10.1093/pan/mpr057
- Betsch, C., Brewer, N. T., Brocard, P., Davies, P., Gaissmaier, W., Haase, N.,... Stryk, M. (2012). Opportunities and challenges of Web 2.0 for vaccination decisions. *Vaccine*, 30(25), 3727–33. doi:10.1016/j.vaccine.2012.02.025
- Brants, K. (2013). Trust, cynicism and responsiveness: The uneasy situation of journalism in democracy. In M. J. Broersma & C. Peters (Eds.), *Rethinking Journalism : Trust and Participation in a Transformed News Landscape* (pp. 15–28). New York: Routledge.
- Bureau of Labor Statistics (2018). Seasonally adjusted unemployment rate, 16 years or over. Retrieved from <https://data.bls.gov/pdq/SurveyOutputServlet>.
- Center for Open Science (n.d.) Preregistration makes your science better. Retrieved from <https://cos.io/prereg/>
- Choi, W., & Stvilia, B. (2015). Web credibility assessment: Conceptualization, operationalization, variability, and models. *Journal of the Association for Information Science and Technology*, 66(12), 2399–2414. <http://doi.org/10.1002/asi.23543>

- Corbett, J. B., & Durfee, J. L. (2004). Testing public (un)certainty of science: Media representations of global warming. *Science Communication*, 26(2), 129–151. <http://doi.org/10.1177/1075547004270234>
- Crichton, F., & Petrie, K. J. (2015). Accentuate the positive: Counteracting psychogenic responses to media health messages in the age of the Internet. *Journal of Psychosomatic Research*, 79(3), 185–189. <http://doi.org/10.1016/j.jpsychores.2015.04.014>
- Davis, J. H., & Grynbaum, M. M. (2017, February 24). Trump intensifies his attacks on journalists and condemns F.B.I. ‘leakers.’ *The New York Times*. Retrieved from <https://www.nytimes.com/2017/02/24/us/politics/white-house-sean-spicer-briefing.html>
- Dubé, E., Laberge, C., Guay, M., Bramadat, P., Roy, R., & Bettinger, J. (2013). Vaccine hesitancy: An overview. *Human Vaccines & Immunotherapeutics*, 9(8), 1763–73. <http://doi.org/10.4161/hv.24657>
- Edwards, C., Spence, P. R., Gentile, C. J., Edwards, A., & Edwards, A. (2013). How much Klout do you have... A test of system generated cues on source credibility. *Computers in Human Behavior*, 29, A12–A16. <http://doi.org/10.1016/j.chb.2012.12.034>
- Eysenbach, G. (2008). Credibility of health information and digital media: New perspectives and implications for youth. In M. J. Metzger & A. J. Flanagin (Eds.), *Digital media, youth, and credibility* (pp. 123–154). Cambridge, MA: The John D. and Catherine T. MacArthur Foundation Series on Digital Media and Learning, The MIT Press. doi:10.1162/dmal.9780262562324.123
- Fletcher, R., & Park, S. (2017). The impact of trust in the news media on online news consumption and participation. *Digital Journalism*, 1–19. <http://doi.org/10.1080/21670811.2017.1279979>
- Fogg, B. J. (2003). Prominence–interpretation theory. In G. Cockton & P. Korhonen (Eds.), *CHI '03 Extended Abstracts on Human Factors in Computing Systems* (pp. 722–723). New York, NY: Association for Computing Machinery.
- Gallup News Service (2017). *Gallup Poll Social Series: Governance*.
- Gangarosa, E. J., Galazka, A. M., Wolfe, C. R., Phillips, L. M., Miller, E., & Chen, R. T. (1998). Impact of anti-vaccine movements on pertussis control: the untold story. *The Lancet*, 351(9099), 356–61. [http://doi.org/10.1016/S0140-6736\(97\)04334-1](http://doi.org/10.1016/S0140-6736(97)04334-1)
- Gutterman, A. (2016, December 16). A low hanging solution to Facebook’s fake news problem [Web log post]. Retrieved from <https://media.consensys.net/a-low-hanging-solution-to-facebooks-fake-news-problem-d9d748fb8f7a>

- Hare, K., & Mantzarlis, A. (2016, November 8). How the 2016 campaign changed political journalism. *Poynter.org*. Retrieved from <http://www.poynter.org/2016/how-the-2016-election-changed-political-journalism/437701/>
- Harris, L. B. (2016, December 14). 5 ways to build trust with your readers going into 2017. American Press Institute. Retrieved from <https://www.americanpressinstitute.org/publications/building-trust-2017/>
- Hellmueller, L., & Trilling, D. (2012). The credibility of credibility measures: A meta-analysis in leading communication journals, 1951 to 2011. In *World Association for Public Opinion Research (WAPOR) Hong Kong 2012*. Hong Kong. Retrieved from https://pure.uva.nl/ws/files/1362753/164537_VD_3.pdf
- Hinnant, A. (2006). *Mass-mediated health reporting: An investigation into the production of magazine health content* [Unpublished doctoral dissertation]. Northwestern University.
- Holbert, R. L., Garrett, R. K., & Gleason, L. S. (2010). A New Era of Minimal Effects? A Response to Bennett and Iyengar. *Journal of Communication*, *60*(1), 15–34. <http://doi.org/10.1111/j.1460-2466.2009.01470.x>
- Huang, C. L. (2016, March 11). Marty Baron: Loss of public trust is journalism’s greatest challenge. *World News Publishing Focus*. Retrieved from <https://blog.wanifra.org/2016/03/11/marty-baron-loss-of-public-trust-is-journalisms-greatest-challenge>
- Huff, C., & Tingley, D. (2015). “Who are these people?” Evaluating the demographic characteristics and political references of MTurk survey respondents. *Research and Politics*, (July-September 2015), 1–12. <http://doi.org/10.1177/2053168015604648>
- Jackob, N. G. E. (2010). No alternatives? The relationship between perceived media dependency, use of alternative information sources, and general trust in mass media. *International Journal of Communication*, *4*, 589-606. Retrieved from <http://ijoc.org/index.php/ijoc/article/view/615>
- Jensen, J. D., Carcioppolo, N., King, A. J., Bernat, J. K., Davis, L., Yale, R., & Smith, J. (2011). Including limitations in news coverage of cancer research: Effects of news hedging on fatalism, medical skepticism, patient trust, and backlash. *Journal of Health Communication*, *16*(5), 486–503. <http://doi.org/10.1080/10810730.2010.546491>
- Jung, W. S., Chung, M.-Y., & Rhee, E. S. (2017). The effects of attractiveness and source expertise on online health sites. *Health Communication*. <http://doi.org/10.1080/10410236.2017.1323364>
- Kata, A. (2010). A postmodern Pandora’s box: anti-vaccination misinformation on the Internet. *Vaccine*, *28*(7), 1709–16. <http://doi.org/10.1016/j.vaccine.2009.12.022>

- Kata, A. (2012). Anti-vaccine activists, Web 2.0, and the postmodern paradigm--an overview of tactics and tropes used online by the anti-vaccination movement. *Vaccine*, *30*(25), 3778–89. <http://doi.org/10.1016/j.vaccine.2011.11.112>
- Kearney, M. W. (2017). *Trusting News Project Report 2017*. Reynolds Journalism Institute. Retrieved from <https://www.rjionline.org/reporthtml.html>
- Kiousis, S. (2001). Public trust or mistrust? Perceptions of media credibility in the information age. *Mass Communication and Society*, *4*(4), 381–403. http://doi.org/10.1207/S15327825MCS0404_4
- Kohring, M., & Matthes, J. (2007). Trust in news media: Development and validation of a multidimensional scale. *Communication Research*, *34*(2), 231–252. <http://doi.org/10.1177/0093650206298071>
- Lee, S. H. (2011). *Does trust really matter? A quantitative study of college students' trust and use of news media* [Master's thesis]. University of Nebraska - Lincoln. Retrieved from <http://digitalcommons.unl.edu/journalismdiss/15>
- Lin, X., Spence, P. R., & Lachlan, K. A. (2016). Social media and credibility indicators: The effect of influence cues. *Computers in Human Behavior*, *63*, 264–271. <http://doi.org/10.1016/j.chb.2016.05.002>
- Mackay, J. B., & Lowrey, W. (2011). The credibility divide: Reader trust of online newspapers and blogs. *Journal of Media Sociology*, *3*(1–4), 39–57. Retrieved from <https://pdfs.semanticscholar.org/9223/b535c4d8b8e927850f048d49a4e63c0554d9.pdf>
- McCroskey, J. C., & Teven, J. J. (1999). Goodwill: A reexamination of the construct and its measurement. *Communication Monographs*, *66*. Retrieved from <http://www.jamescmccroskey.com/publications/180.pdf>
- Media Insight Project. (2016). *A new understanding: What makes people trust and rely on news*. Retrieved from <http://mediainsight.org/PDFs/Trust/TrustFinal.pdf>
- Media Insight Project. (2017a). “My” media versus “the” media: Trust in news depends on which news media you mean. Retrieved from https://www.americanpressinstitute.org/wp-content/uploads/2017/05/APNORC_Trust_The_Media_Topline_final.pdf
- Media Insight Project. (2017b). “Who shared it?”: How Americans decide what news to trust on social media. Retrieved from http://mediainsight.org/PDFs/Trust Social Media Experiments 2017/MediaInsight_Social Media Final.pdf
- Meitz, T. G. K., Ort, A., Kalch, A., Zipfel, S., & Zursteige, G. (2016). Source does matter: Contextual effects on online media-embedded health campaigns against childhood obesity. *Computers in Human Behavior*, *60*, 565–574.

- Metzger, M. J., Flanagin, A. J., Eyal, K., Lemus, D. R., & McCann, R. M. (2003). Credibility for the 21st century: Integrating perspectives on source, message, and mass credibility in the contemporary media environment. *Annals of the International Communication Association*, 27(1), 293–335.
- Metzger, M. J., Flanagin, A. J., & Medders, R. B. (2010). Social and heuristic approaches to credibility evaluation online. *Journal of Communication*, 60(3), 413–439. <http://doi.org/10.1111/j.1460-2466.2010.01488.x>
- Meyer, P. (1988). Defining and measuring credibility of newspapers: Developing an index. *Journalism Quarterly*, 65(3), 567–574. Retrieved from <https://ill.mul.missouri.edu/MUU/illiad.dll?Action=10&Form=75&Value=821344>
- Miranda, L., & Lee, S. M. (2017, November 1). Bogus Health News Is All Over Pinterest. *Buzzfeed*. Retrieved from https://www.buzzfeed.com/leticiamiranda/pinterest-bogus-health-pins?utm_term=.asJ5G2mZz#.vma1MjL52
- Nagler, R. H. (2014). Adverse outcomes associated with media exposure to contradictory nutrition messages. *Journal of Health Communication*, 19(1), 24–40. doi:10.1080/10810730.2013.798384
- Nagler, R. H., & Hornik, R. C. (2012). Measuring media exposure to contradictory health information: A comparative analysis of four potential measures. *Communication Methods and Measures*, 6(1), 56–75. <http://doi.org/10.1080/19312458.2011.651348>
- Pew Research Center (2011). *Views of the news media: 1985-2011 - Press widely criticized, but trusted more than other information sources*. Retrieved from <http://www.people-press.org/2011/09/22/press-widely-criticized-but-trusted-more-than-other-institutions/>
- Pew Research Center (2013). The role of news on Facebook (topline results). Retrieved from <http://www.journalism.org/2013/10/24/the-role-of-news-on-facebook/>
- Pew Research Center (2014). Political polarization & media habits. Retrieved from <http://assets.pewresearch.org/wp-content/uploads/sites/13/2014/10/Political-Polarization-and-Media-Habits-FINAL-REPORT-7-27-15.pdf>
- Pew Research Center (2016). *The modern news consumer*. Retrieved from <http://www.journalism.org/2016/07/07/trust-and-accuracy/>
- Pew Research Center (2017a). *Americans' attitudes about the news media deeply divided along partisan lines*. Retrieved from <http://www.journalism.org/2017/05/10/americans-attitudes-about-the-news-media-deeply-divided-along-partisan-lines/>
- Pew Research Center (2017b). *How Americans encounter, recall, and act upon digital news*. Retrieved from http://assets.pewresearch.org/wp-content/uploads/sites/13/2017/02/08183209/PJ_2017.02.09_Experiential_FINAL.pdf

- Pew Research Center (2017c). News use across social media platforms 2017. Retrieved from http://assets.pewresearch.org/wp-content/uploads/sites/13/2017/09/13163032/PJ_17.08.23_socialMediaUpdate_FINAL.pdf
- Pew Research Center (2018). Wide gender gap, growing educational divide in voters' party identification. Retrieved from <http://assets.pewresearch.org/wp-content/uploads/sites/5/2018/03/20113922/03-20-18-Party-Identification.pdf>
- Poland, G. A., & Jacobson, R. M. (2012). The clinician's guide to the anti-vaccinationists' galaxy. *Human Immunology*, 73(8), 859–66. <http://doi.org/10.1016/j.humimm.2012.03.014>
- R Core Team (2018). R: A language and environment for statistical computing. *R Foundation for Statistical Computing*, Vienna, Austria. Retrieved from <https://www.R-project.org/>
- Robb, A. (2014, April 17). Netiquette of capitalization: How caps became code for yelling. *New Republic*. Retrieved from <https://newrepublic.com/article/117390/netiquette-capitalization-how-caps-became-code-yelling>
- Schultz, S. (2016, December 3). 6 detailed ways journalism can rebuild public trust [Web log post]. Retrieved from <http://publicnarrative.org/2016/12/ways-journalism-can-rebuild-public-trust/>
- Seymour, B., Getman, R., Saraf, A., Zhang, L. H., & Kalenderian, E. (2015). When advocacy obscures accuracy online: Digital pandemics of public health misinformation through an antifuoride case study. *American Journal of Public Health*, 105(3), 517–23. <http://doi.org/10.2105/AJPH.2014.302437>
- Stearns, J. (2016, December 21). Creating a trust toolkit for journalism. *Thoughts on Journalism*. Retrieved from <https://medium.com/thoughts-on-journalism/creating-a-trust-toolkit-for-journalism-dac6718a51c4>
- Sundar, S. S. (2008). The MAIN model: A heuristic approach to understanding technology effects on credibility. In M. J. Metzger & A. J. Flanagin (Eds.), *Digital Media, Youth, and Credibility* (pp. 73–100). Cambridge, MA: The MIT Press. <http://doi.org/10.1162/dmal.9780262562324.073>
- Sundar, S. S., & Nass, C. (2001). Conceptualizing sources in online news. *Journal of Communication*, 51(1), 52–72.
- Thorson, K. & Wells, C. (2015). How gatekeeping still matters: Understanding media effects in an era of curated flows. In T. Vos & F. Heinderyckx (Eds.), *Gatekeeping in Transition* (pp. 25–44). Taylor & Francis. Retrieved from <http://ebookcentral.proquest.com/lib/umcolumbia-ebooks/detail.action?docID=3569346>.

- Trewinnard, T. (2016, November 23). Fixing fake news: Treat the problem not just the symptom. Retrieved from <https://medium.com/meedan-updates/fixing-fake-news-treat-the-problem-not-just-the-symptom-472fad66f630>
- Tsfati, Y., & Cappella, J. N. (2003). Do people watch what they do not trust? *Communication Research*, 30(5), 504–529.
- Turcotte, J., York, C., Irving, J., Scholl, R. M., & Pingree, R. J. (2015). News recommendations from social media opinion leaders: Effects on media trust and information seeking. *Journal of Computer-Mediated Communication*, 20(5), 520–535. <http://doi.org/10.1111/jcc4.12127>
- U.S. Census Bureau (2010). *Single years of age and sex: 2010 – 2010 census summary file 1*. Retrieved from <http://factfinder.census.gov>.
- U.S. Census Bureau (2014). *Population 60 years and over in the United States: 2010-2014 American Community Survey 5-year estimates*. Retrieved from <http://factfinder.census.gov/faces/nav/jsf/pages/index.xhtml>
- U.S. Census Bureau (2016a). *Annual estimates of the resident population by sex, single year of age, race alone or in combination, and Hispanic origin for the United States: April 1, 2010 to July 1, 2016: 2016 population estimates*. Retrieved from <http://factfinder.census.gov>
- U.S. Census Bureau (2016b). *Educational attainment: 2012-2016 American Community Survey 5-year estimates*. Retrieved from <http://factfinder.census.gov>
- U.S. Census Bureau (2016c). *Selected population profile in the United States: 2016 American Community Survey 1-year estimates*. Retrieved from <http://factfinder.census.gov>
- Van Der Heide, B., & Lim, Y.-S. (2016). On the conditional cueing of credibility heuristics: The case of online influence. *Communication Research*, 43(5), 672–693. <http://doi.org/10.1177/0093650214565915>
- Van Slooten, E., Friedman, D. B., & Tanner, A. (2013). Are we getting the health information we need from the mass media? An assessment of consumers' perceptions of health and medical news. *Journal of Consumer Health On the Internet*, 17(1), 1539–8285. <http://doi.org/10.1080/15398285.2013.756338>
- Vos, T. P. (2015). Revisiting gatekeeping theory during a time of transition. In T. Vos & F. Heinderyckx (Eds.), *Gatekeeping in Transition* (pp. 3–24). Taylor & Francis. Retrieved from <http://ebookcentral.proquest.com/lib/umcolumbia-ebooks/detail.action?docID=3569346>.

- Westerman, D., Spence, P. R., & Van Der Heide, B. (2014). Social media as information source: Recency of updates and credibility of information. *Journal of Computer-Mediated Communication, 19*(2), 171–183. <http://doi.org/10.1111/jcc4.12041>
- Wilner, T. (2018, April 9). What's a source on Facebook. [Open Science Framework registration.] Retrieved from osf.io/8xjk4
- Winter, S., Brückner, C., & Krämer, N. C. (2015). They came, they liked, they commented: Social influence on Facebook news channels. *Cyberpsychology, Behavior, and Social Networking, 18*(8), 431–436. <http://doi.org/10.1089/cyber.2015.0005>
- Yang, F., & Li, C. (2016). The color of gender stereotyping: The congruity effect of topic, color, and gender on health messages' persuasiveness in cyberspace. *Computers in Human Behavior, 64*, 299–307. <http://doi.org/10.1016/j.chb.2016.07.001>
- Yang, Q., & Beatty, M. (2016). A meta-analytic review of health information credibility: Belief in physicians or belief in peers? *Health Information Management Journal, 45*(2), 80–89. <http://doi.org/10.1177/1833358316639432>
- Yilmaz, G., & Quintero Johnson, J. M. (2016). Tweeting facts, Facebooking lives: The influence of language use and modality on online source credibility. *Communication Research Reports, 33*(2), 137–144. <http://doi.org/10.1080/08824096.2016.1155047>

Appendix: Survey Instrument

Q2.1 On average, about how much time per day do you spend on Facebook?

0 1 2 3 4 5 6 7 8

Hours (1)	
-----------	--

[page break]

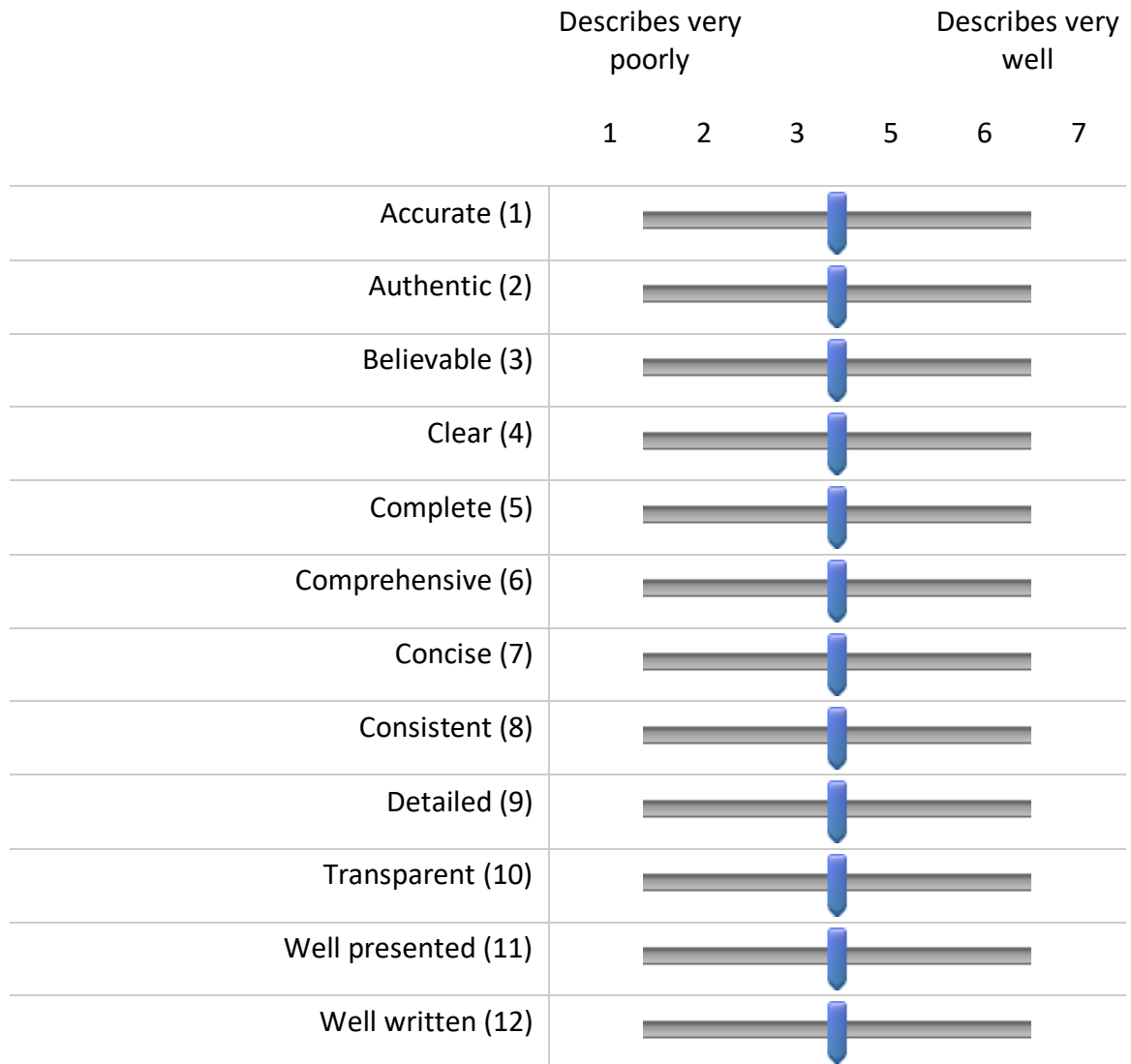
Q4.1 You will see a series of simulated Facebook webpages, each followed by questions. Please read the news items on each webpage and click when you are ready to answer the questions.

Please note: Once you progress from a given screen, you may NOT go back to re-read the items or change previous answers.

Click when you are ready to continue.

[The participant then saw see the four simulated Facebook posts created for his or her condition – see Figures A1-4, A5-8, A9-12, and A13-16. Each post was followed by the following question:]

How well do the following adjectives describe the news item you just read?



[After viewing all four posts, and answering this question four times, the participant was asked the following:]

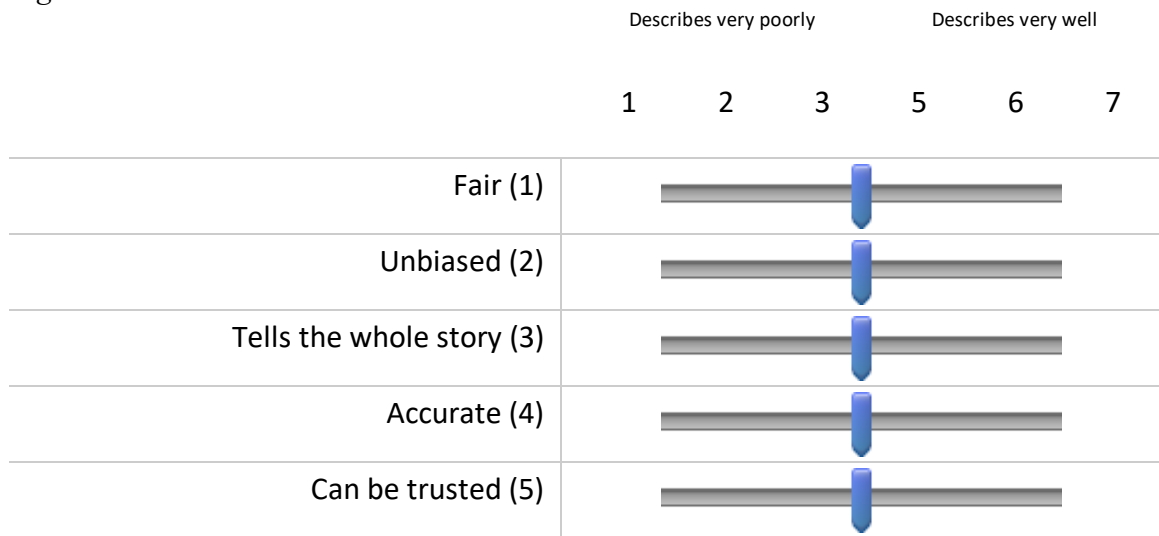
Q9.1 What news organization wrote the news items?

The news organization was: (1)

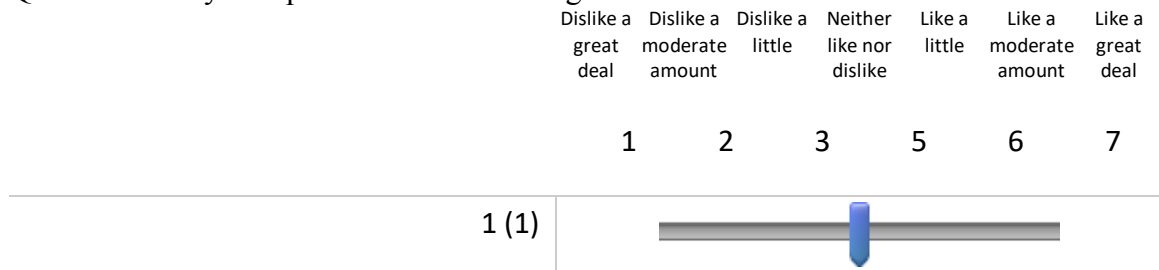
Don't know (2)

[page break]

Q10.1 Please indicate the extent to which you think the following describe the *news organization* that wrote the news items.



Q10.2 What is your opinion of this news organization?



[page break]

Q11.1 Which of the following best describes the topic of information displayed in the mock Facebook posts?

Sports (1)

Politics (2)

Health (3)

Music (4)

[page break]

Q12.1 Did you notice the name of the news organization that wrote the items?

Yes (1)

No (2)

Not sure (3)

Q12.2 Please indicate which news organization wrote the news items you saw:

- BBC (1)
- New York Times (2)
- Huffington Post (3)
- Wall Street Journal (4)
- Don't know (5)









[page break]

Q13.1 Why do you, personally, use Facebook?

Not a strong reason at all

A very strong reason

1 2 3 5 6 7

To share my photos or my videos (1)	
To post personal updates (2)	
To chat or message with friends and family (3)	
To get news about events and issues that involve more than just my friends and family (4)	
To see what friends and family are up to (5)	
To play games (6)	
To see photos and videos from friends and family (7)	
Other (8)	

[page break]

Q14.1 How old were you on your last birthday?

- Under 18
- 18 - 24
- 25 - 34
- 35 - 44
- 45 - 54
- 55 - 64
- 65 - 74
- 75 - 84
- 85 or older

Q14.2 What is your gender?

- Male
- Female
- Other
- Don't want to say

Q14.3 What is your race/ethnicity?

- White
- Black or African American
- American Indian or Alaska Native
- Asian
- Latino or Hispanic
- Other
- Don't want to say

Q14.4 What is your level of education?

- Less than high school
- High school graduate
- Some college
- 2 year degree
- 4 year degree
- Professional degree
- Doctorate

Q14.5 What is your employment status?

- Employed for wages or self-employed
- Student
- Retired
- Out of work or unable to work
- Homemaker

Q14.6 What is your household income?

- Less than \$10,000
- \$10,000 - \$19,999
- \$20,000 - \$29,999
- \$30,000 - \$39,999
- \$40,000 - \$49,999
- \$50,000 - \$59,999
- \$60,000 - \$69,999
- \$70,000 - \$79,999
- \$80,000 - \$89,999
- \$90,000 - \$99,999
- \$100,000 - \$149,999
- More than \$150,000

[page break]

Q15.1 Which of the following best describes your political affiliation?

Strong Democrat Moderate Democrat Lean Democrat Neither Democrat nor Republican Lean Republican Moderate Republican Strong Republican

1 2 3 5 6 7



[page break]

Q16.1 Please enter your MTurk worker ID.

[page break]

Thank you! Please use the following code to validate your participation on mTurk:

[code auto-generated; End of survey]

Figures A1-A4. Stimuli for high reputation, high visibility condition

Figure A1

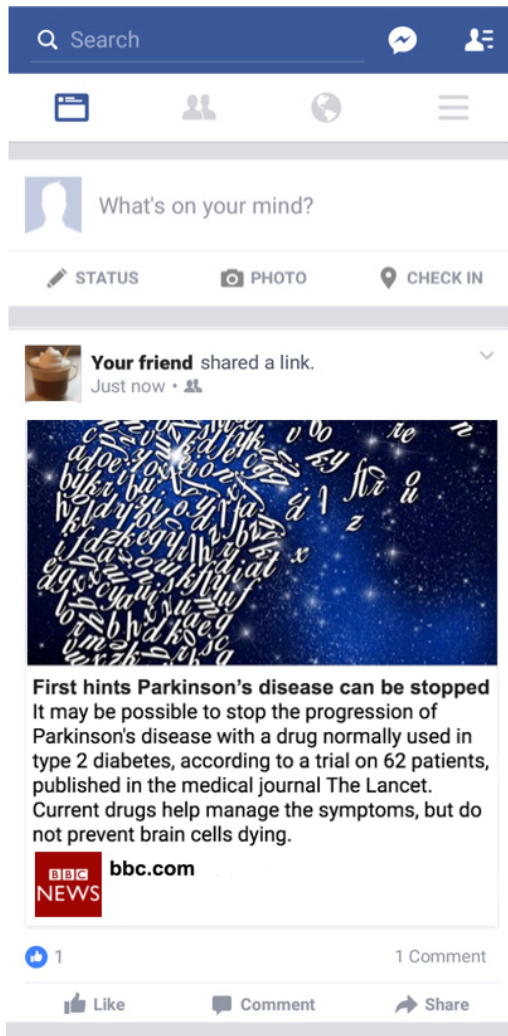


Figure A2

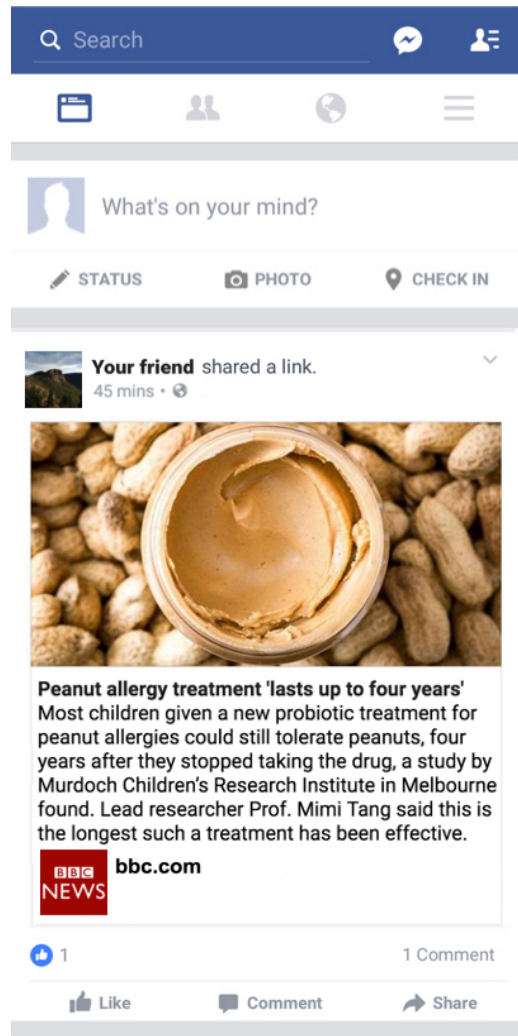


Figure A3

The screenshot shows a Facebook interface with a search bar at the top. Below the navigation bar, there is a "What's on your mind?" section with options for "STATUS", "PHOTO", and "CHECK IN". A post from "Your friend" is displayed, featuring a dog's profile picture and a link shared 3 hours ago. The link's thumbnail is a cross-section of a human brain. The text of the link reads: "Nine lifestyle changes may reduce dementia risk. One in three cases of dementia could be prevented if more people addressed nine key risk factors including a lack of education, hearing loss, smoking and physical activity, according to a study being presented at the Alzheimer's Association International Conference." The source is identified as "bbc.com" with the BBC NEWS logo. The post has 2 likes and 1 comment. At the bottom, there are buttons for "Like", "Comment", and "Share".

Figure A4

The screenshot shows a Facebook interface with a search bar at the top. Below the navigation bar, there is a "What's on your mind?" section with options for "STATUS", "PHOTO", and "CHECK IN". A post from "Your friend" is displayed, featuring a bicycle profile picture and a link shared 9 hours ago. The link's thumbnail is a glowing heart with red and yellow energy pulses. The text of the link reads: "Anti-inflammatory drug 'cuts heart attack risk'. The anti-inflammatory drug canakinumab could cut the risk of a repeat heart attack by 15%, according to a study of 10,000 patients published in the New England Journal of Medicine. The authors say this could be the biggest breakthrough in treatment since the advent of statins to lower cholesterol." The source is identified as "bbc.com" with the BBC NEWS logo. The post has 3 likes and 2 comments. At the bottom, there are buttons for "Like", "Comment", and "Share".

Figures A5-A8. Stimuli for high reputation, normal visibility condition

Figure A5



Figure A6

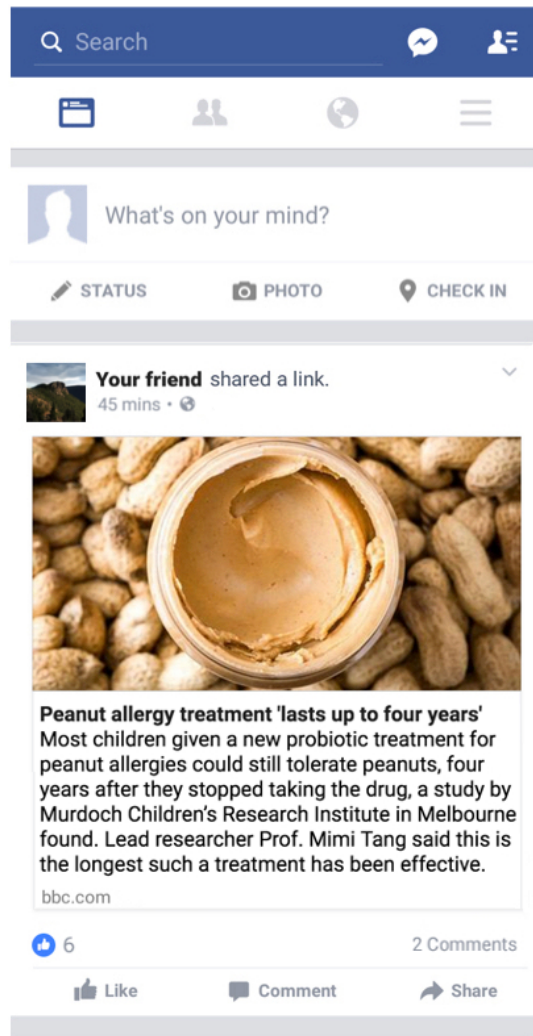


Figure A7

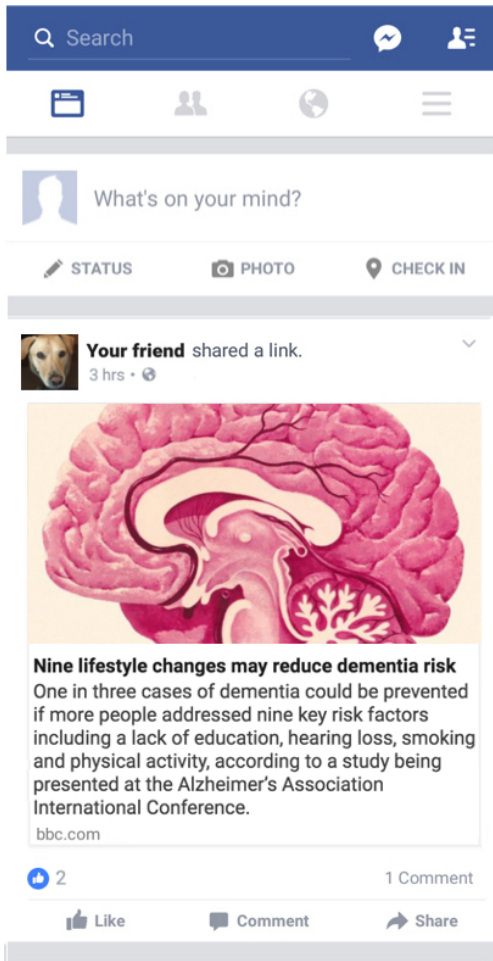
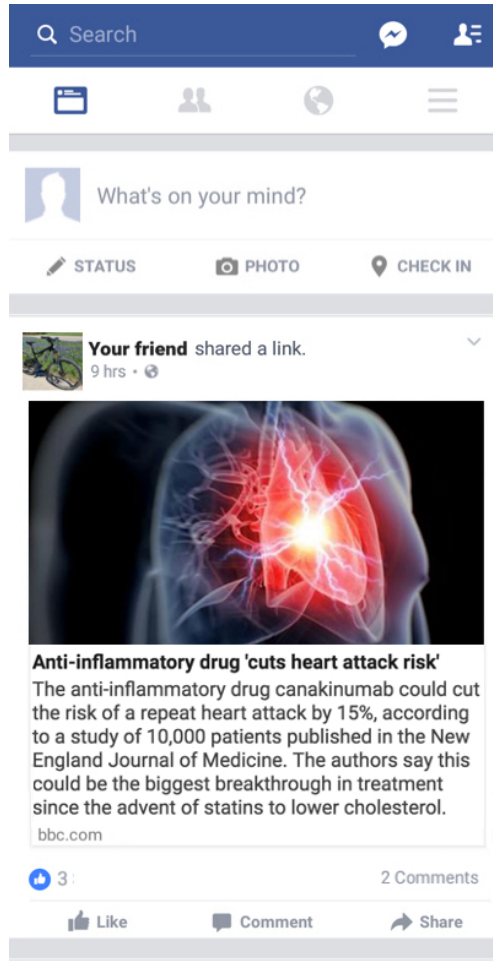


Figure A8



Figures A9-A12. Stimuli for low reputation, high visibility condition.

Figure A9

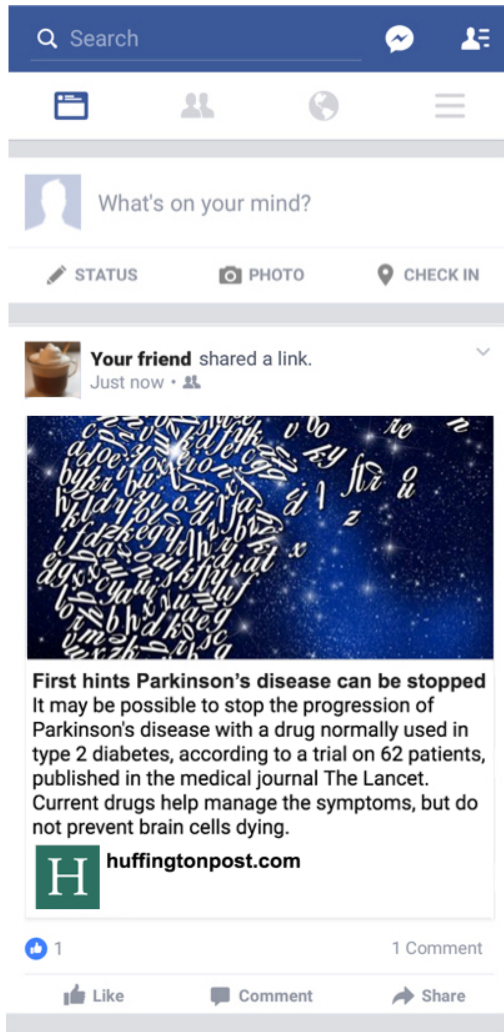


Figure A10

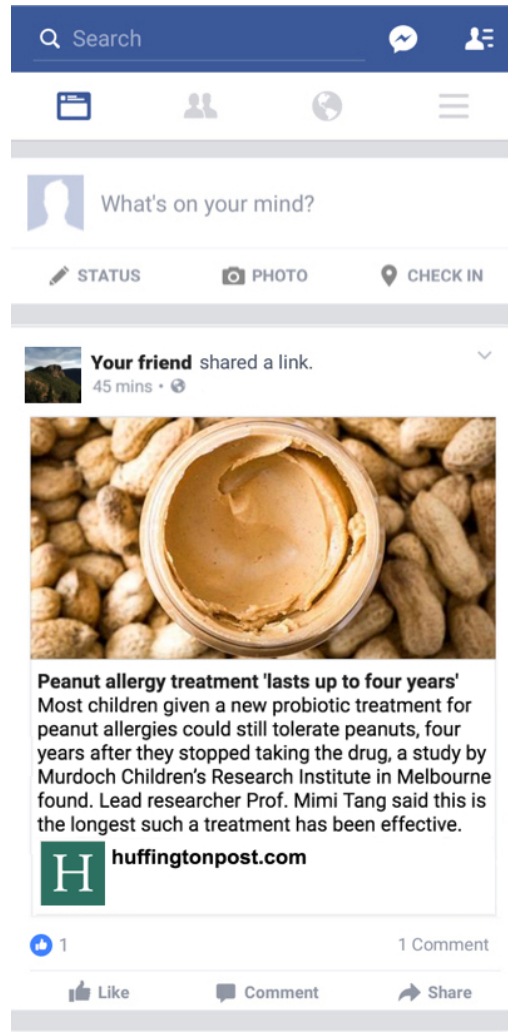



Figure A11

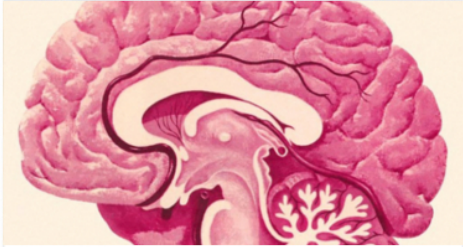
Search [messaging icon] [profile icon]

[calendar icon] [people icon] [globe icon] [hamburger menu icon]


[profile icon] What's on your mind?

[pencil icon] STATUS [camera icon] PHOTO [location pin icon] CHECK IN

 **Your friend** shared a link. 3 hrs · [privacy icon]



Nine lifestyle changes may reduce dementia risk
One in three cases of dementia could be prevented if more people addressed nine key risk factors including a lack of education, hearing loss, smoking and physical activity, according to a study being presented at the Alzheimer's Association International Conference.

 huffingtonpost.com

👍 2 1 Comment

👍 Like [comment icon] Comment [share icon] Share

Figure A12

Search [messaging icon] [profile icon]

[calendar icon] [people icon] [globe icon] [hamburger menu icon]

[profile icon] What's on your mind?

[pencil icon] STATUS [camera icon] PHOTO [location pin icon] CHECK IN

 **Your friend** shared a link. 9 hrs · [privacy icon]



Anti-inflammatory drug 'cuts heart attack risk'
The anti-inflammatory drug canakinumab could cut the risk of a repeat heart attack by 15%, according to a study of 10,000 patients published in the New England Journal of Medicine. The authors say this could be the biggest breakthrough in treatment since the advent of statins to lower cholesterol.

 huffingtonpost.com

👍 3 2 Comments

👍 Like [comment icon] Comment [share icon] Share

Figures A13-A16. Stimuli for low reputation, normal visibility condition.

Figure A13

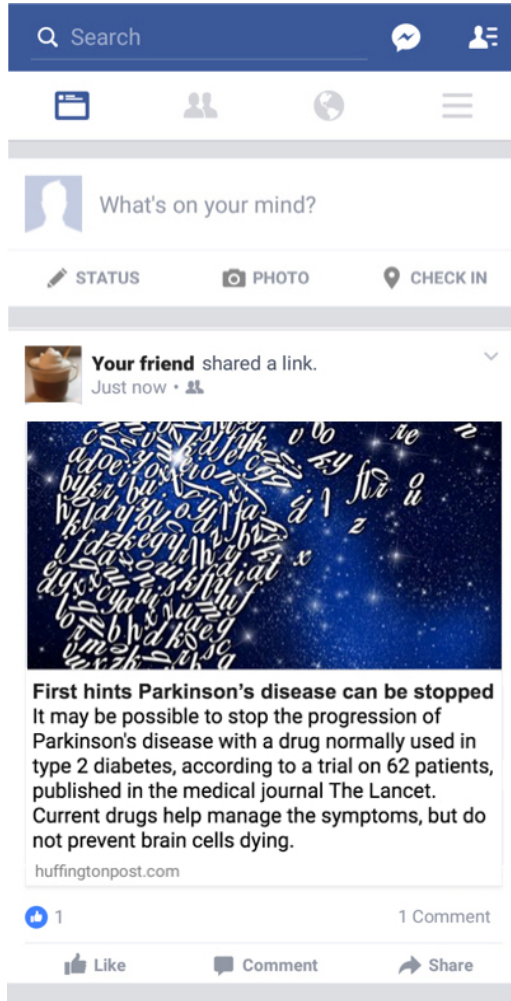


Figure A14

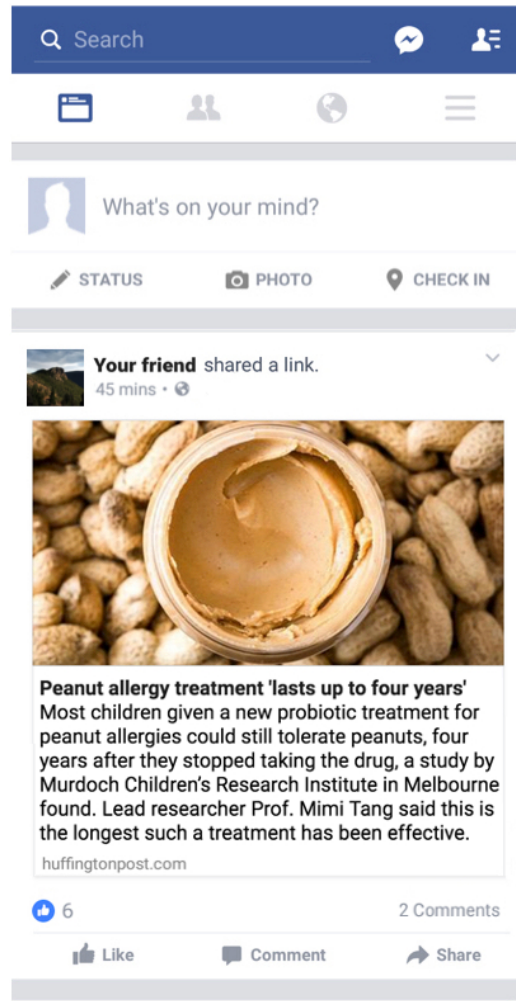
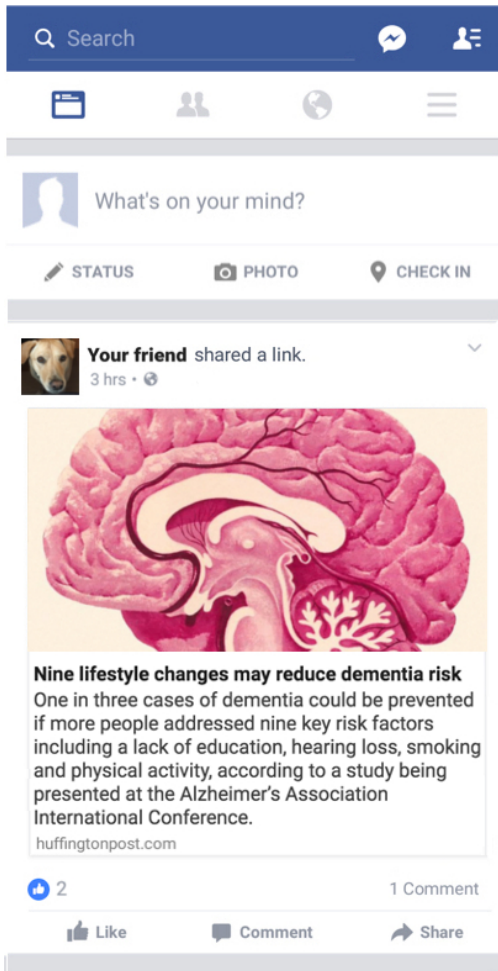
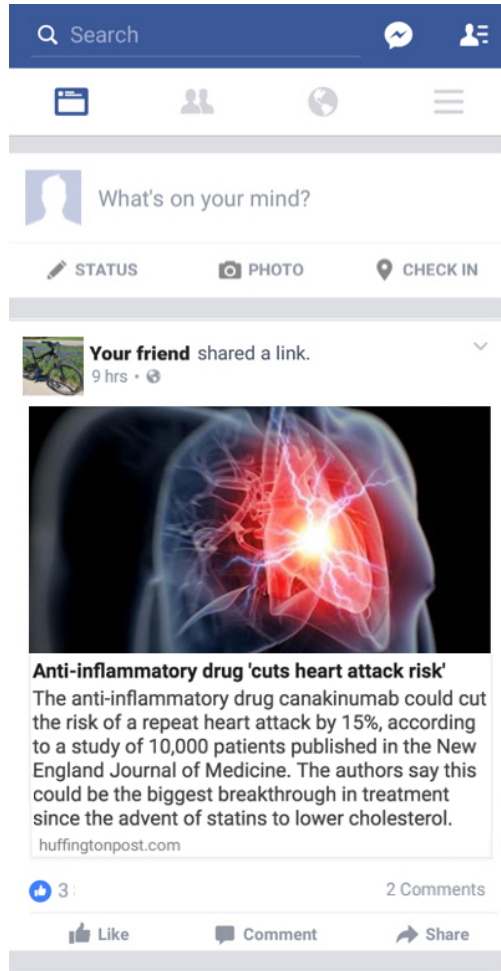


Figure A15



The screenshot shows a Facebook interface with a search bar at the top. Below the navigation bar, there is a "What's on your mind?" section with options for "STATUS", "PHOTO", and "CHECK IN". A post from "Your friend" is displayed, featuring a small profile picture of a dog and the text "Your friend shared a link. 3 hrs · 🌐". The main image is a cross-section of a human brain. Below the image, the text reads: "Nine lifestyle changes may reduce dementia risk. One in three cases of dementia could be prevented if more people addressed nine key risk factors including a lack of education, hearing loss, smoking and physical activity, according to a study being presented at the Alzheimer's Association International Conference." The source is cited as "huffingtonpost.com". At the bottom, there are 2 likes and 1 comment, with buttons for "Like", "Comment", and "Share".

Figure A16



The screenshot shows a Facebook interface with a search bar at the top. Below the navigation bar, there is a "What's on your mind?" section with options for "STATUS", "PHOTO", and "CHECK IN". A post from "Your friend" is displayed, featuring a small profile picture of a bicycle and the text "Your friend shared a link. 9 hrs · 🌐". The main image is a glowing heart with red and blue energy lines. Below the image, the text reads: "Anti-inflammatory drug 'cuts heart attack risk'. The anti-inflammatory drug canakinumab could cut the risk of a repeat heart attack by 15%, according to a study of 10,000 patients published in the New England Journal of Medicine. The authors say this could be the biggest breakthrough in treatment since the advent of statins to lower cholesterol." The source is cited as "huffingtonpost.com". At the bottom, there are 3 likes and 2 comments, with buttons for "Like", "Comment", and "Share".