2021

Native advertising in a mobile era: effects of ability and motivation on recognition in digital news contexts

Native Advertising in a Mobile Era:

Effects of Ability and Motivation on Recognition in Digital News Contexts

Michelle A. Amazeen
Associate Professor
Department of Mass Communication, Advertising and Public Relations
Boston University
USA
mamazeen@bu.edu
@commscholar
Orcid ID # 0000-0003-0167-7323

Pre-publication version for *Digital Journalism*

Funding:
The author has no funding disclosures to acknowledge.

Acknowledgements:
I am indebted to the research assistance of Brittany Brown, Zicheng (Claire) Cheng, Aeric Holbrook, Nitya Ravi, and Yuhui (Irene) Zhu. I also thank the editors and anonymous reviewers for their constructive feedback. Underlying research materials are available upon request.

Abstract

Digital news is progressively blurring with commercial content at the same time that mobile technology is increasingly being used to access news. To understand if these trends affect ability to distinguish news from covert advertising, two experiments were conducted among U.S. adults examining whether viewing content on a mobile device versus computer interacts with motivation levels in affecting recognition of native advertising. Consistent with tenets of the Covert Advertising Recognition and Effects model, results show that although people with greater motivation to process media content were more likely to recognize native advertising, it was not enough to compensate for the greater cognitive effort required when using a mobile device.

Keywords: persuasion, digital news, native advertising, mobile devices, information processing

Native Advertising in a Mobile Era:
Effects of Ability and Motivation on Recognition in Digital News Contexts

The growth of mobile technology is changing how people access online content. In 2019, more than four out of five Americans (81%) reported owning a smartphone, up from just 35% in 2011. Moreover, an increasing number of these people (37%) report that when they do go online, it is mostly via their smartphone. While this is true among all ages, it is particularly pronounced among younger adults – 18-29 year olds – with over half (58%) reporting going online primarily with a cellphone. For some of these adults, they have foregone paying for broadband because their mobile phones allow them to access what they need online. Indeed, 17% of U.S. adults are "smartphone-only internet users" – those with no traditional high-speed internet access in their homes. These users tend to be less educated and from lower income households (Anderson 2019). As will be addressed in this paper, this trend in online media access has profound implications for the consumption of news (Dunaway, Searles, Sui, and Paul 2018; Molyneux 2018).

At the same time that mobile technology is changing news consumption habits, it is also becoming increasingly difficult to identify what news is. To be sure, defining news has historically been fraught with complications and unclear distinctions between "the material being reported and the report itself," making news "difficult if not impossible to define" (Zelizer 2004, 24-25). Journalists, themselves, find it easier to recognize than define news (Zelizer 2004). Moreover, even communication scholars have commissioned a special issue of an academic journal to address issues surrounding "What IS news?" (Pompper and Hoffman 2018). Indeed, as news increasingly blurs genre boundaries with entertainment, a journalistic hybridization is taking place where distinctions give way to "unstable mixtures and uncertain assemblages"

(Baym 2017, 12). Consequently, understanding how audiences perceive notions of "news-ness" – the extent to which media content is news – is critical in studying the implications of the modern media environment (Edgerly and Vraga 2019).

The ability to distinguish news from other types of media content has become especially important with the rise of fabricated news stories and other types of disinformation infiltrating the media ecosystem (Amazeen and Bucy 2019; Tandoc, Lim, and Ling 2018). In particular, the prevalence of the covert marketing practice called "native advertising" has made identifying news all the more difficult. In digital news environments, native advertising mimics the format of journalistic articles right down to the identical font (Einstein 2016). A growing corpus of academic research indicates that generally fewer than 1 in 4 people are able to discriminate between a journalistic news article and a native advertisement that resembles digital journalism (Amazeen and Wojdynski 2018, 2019; Wojdynski and Evans 2016). Because what and how the news media report affects what the public learns (McCombs and Shaw 1972), the blurring of news content with commercial content may affect public knowledge necessary for informed citizenship, creating what some scholars call commercial democracy, displacing power from the political realm to one prioritizing consumption (Cronin 2018; Kovach and Rosenstiel 2001). With changes in both the composition of news and the way online content is consumed, the present study aims to investigate whether the device on which news is accessed affects ability to discriminate between journalism and commercial content read via a web browser.

In examining whether and how ability and motivation to process content affects digital news perceptions, this research is theoretically grounded within the Covert Advertising Recognition and Effects (CARE) Model proposed by Wojdynski and Evans (2020) which conceptualizes the types of factors that influence recognition of hidden persuasive attempts. Two

studies – one online pilot and the other lab-based – are presented offering one of the first empirical tests of CARE model components. Specifically, the studies advance the model by detailing how the situational delivery context of device on which the web-based mediated content is encountered (mobile phone versus desktop computer) interacts with a person's motivational state when accessing the content in the allocation of information-processing resources. Following analysis of the results, a discussion of the theoretical and practical implications of the findings are offered.

News Consumption

While half of Americans still get their news most often from television (49%), a growing number of people are getting their news from online sources. In 2018, 1 in 3 often got their news from websites while another 1 in 5 from social media (Shearer 2018). In terms of weekly news consumption, primary access is now from online sources (72%) rather than from television (58%) or the print sources (19%) of yesteryear (Newman, Fletcher, Kalogeropoulos, and Nielsen 2019). Driving this trend has been the global growth of mobile news consumption which doubled between 2012 and 2018 (Newman et al. 2018) with two out of three people using a mobile device to access news weekly. Among U.S. audiences, weekly news consumption via smartphones (57%) has now overtaken the computer (53%) (Fedeli and Matsa 2018; Newman et al. 2019). Although mobile consumption of news skews toward younger adults, the increase has been driven primarily by older adults and those with lower incomes (Fedeli and Matsa 2018).

The growth of access to news via mobile devices prompts questions about whether this may lead to differential outcomes, such as in ability to distinguish editorial from commercial content, when compared to desktop access and the reasons for any differences. Conditioning these effects are specific factors of mobile news such as its proximity, location, and timing of use

(Ohme 2020) along with structural features that affect perceptions of its content (Kim and Sundar 2016; Ohme 2020). For instance, the physical availability and proximity of mobile devices may increase access to and thus likelihood of exposure to news for some populations (Ohme 2020; Napoli and Obar 2014), particularly if push-message notifications are enabled on news apps (Stroud, Peacock, and Curry 2020). At the same time, the location and timing of mobile news consumption are influential. The portability of mobile devices affords users the opportunity to consume news in public spaces beyond the privacy of home such as while waiting in line at the store or while commuting on the subway. As such, the ability to cognitively process news content in public may be curtailed due to greater opportunities for distraction as well as differing motivations for engaging with the content (e.g. task-oriented versus passing the time) (Ohme 2020). Indeed, people who access news via mobile tend to be "snackers," spending less time with the content than those accessing it on other types of devices (Dunaway et al. 2018; Molyneux 2018; Nelson and Lei 2018), part of a larger trend toward news grazing more generally, but particularly among younger audiences (Pew 2012).

Of central concern to the present study, however, is how perceptions of mobile news may affect distinguishing commercial from editorial content. By virtue of the size of mobile devices, perceptions of the content may be altered. Although not yet a well-studied phenomenon, initial studies suggest smaller screens and font sizes make it more difficult to search for and receive information (Dunaway and Soroka 2019; Kim and Sundar 2016; Napoli and Obar 2014; Ohme 2020). When coupled with the lessened amount of time spent with mobile news content, the ability to cognitively elaborate on the information that is encountered on mobile devices should decrease (Petty and Cacioppo 1986). As suggested by the limited capacity model of information processing (Lang 2000), the allocation of cognitive resources to process a message determines

the ease with which it is understood and the degree of information that is ultimately gained. Thus, decreased information-processing ability should result in a shallow analysis of stimuli due to less cognitive access to stored knowledge structures of how information should be classified (Wojdynski and Evans 2020).

The Covert Advertising Recognition and Effects Model

The development of the CARE Model (Wojdynski and Evans 2020) was inspired by shortcomings of existing models – such as the dual process Elaboration Likelihood Model (ELM; Petty and Cacioppo 1986) and the Heuristic Systematic Model (HSM; Chaiken 1980) – of how persuasive messages are processed. Like the Persuasion Knowledge Model (PKM; Friestad and Wright 1994), these traditional models do not account for how people schematically classify an incoming message, instead assuming an individual understands a message to be persuasive in nature. With the aforementioned blurring of commercial content with news content, it can no longer be taken for granted that audiences easily discriminate between the two. Beyond the specific content in a message, the dual-process models also fail to consider the external context that may affect how a message is processed (Wojdynski and Evans 2020). For example, the surrounding context such as topic congruency or advertising intrusiveness has been shown to affect persuasive messages (Ha and McCann 2008; Rodgers and Thorson 2000). The CARE Model also explicitly proposes that the context of message delivery characteristics should be taken into consideration. Indeed, the size of the screen on which a mediated message is delivered has been shown to affect persuasion (Kim and Sundar 2016).

In Wojdynski and Evans' (2020) CARE Model, discriminating ad content from editorial or entertainment content is called "advertising recognition." The pathway to recognition can occur via "top-down" processing of a disclosure that identifies the content as advertising (as

federally mandated in many countries) and/or via a "bottom-up" approach wherein message and context features are evaluated. Recognition activates an "advertising schema" – a classification framework based upon past experiences – allowing an individual to perceive the message as a persuasive attempt rather than as some other type of content such as news or entertainment.

Similar to the ELM (Petty and Cacioppo 1984), two important constructs in the CARE Model are an individual's ability and motivation, factors that Wojdynski and Evans (2020) refer to as "situational individual factors" which are antecedents to recognition (9). Unlike dispositional traits, such as knowledge levels – which are relatively stable over time – situational individual factors vary across different circumstances. For instance, a person's ability to cognitively process media content may be affected by message delivery context characteristics, such as with the growing use of mobile technology when accessing news, thereby influencing ability to recognize advertising (see Figure 1). Although conveniences such as accessibility and portability do enable certain advantages to mobile devices over laptop computers, the concern of this study is with *cognitive* access affordances – or how easily information processing occurs following exposure – rather than *physical* access (Dunaway and Soroka 2019; Grabe et al. 2000).

-- Insert Figure 1 about here --

A growing body of research indicates impediments to perceiving information on mobile devices (Ohme 2020). For instance, search functionality is low with entry of queries being more time consuming and resulting in fewer hits (Kamvar and Baluja 2006). Consequently, goal-directed tasks, such as seeking health or political information, research for school or work, or job searches, are more difficult on mobile devices. Indeed, tasks that are cognitively-resource intensive are less likely to be conducted via mobile compared to computers (Donner and Walton 2013). Particularly for news consumption, initial research suggests the increased cognitive effort

and time required to seek information on mobile devices is costly to individuals resulting in far less attention paid to content that is accessed in this way (Dunaway et al. 2018). However, attention is only one mechanism involved in cognitive effort. According to the limited capacity model of information processing (Lang 2000), individuals are selective not only in the information they attend to, but also to which they encode, store, and retrieve. To be sure, viewing news via mobile devices has also been shown to limit cognitive access as demonstrated in terms of physiological arousal (Dunaway and Soroka 2019). Thus, because mobile screen sizes are smaller than on computers, more cognitive effort to process information is required (Dunaway and Soroka 2019; Kim and Sundar 2016).

Given that native advertisements in digital news contexts are designed to blend in with their surroundings to avoid detection (Einstein 2016), greater cognitive resources are required to activate recognition by accurately classifying the content as advertising (Wojdynski and Evans 2020). When exposed to a native advertisement on a mobile device, an individual will have to contend with not only the greater difficulty in recognizing a message disguised as news, but also the reduced ability to process the information due to the increased time and effort required by the mobile environment. Although one qualitative study has found that mobile users are capable of recognizing native advertising disclosures (Krouwer, Poels, and Paulussen 2019), the research was based upon a mobile news application environment. Mobile news apps have been found to elicit significantly greater attention than does mobile news consumption via a web browser. Furthermore, only a fraction of news audiences is reached via news apps. Most are reached via web browsers (Dunaway et al. 2018; Nelson and Lei 2018). Thus, in a web-browser environment, it is expected that the smaller-sized screens associated with mobile devices will hinder cognitive processing ability making native advertising more difficult to identify.

H1: Recognition of native advertising is less likely when accessing news articles on mobile devices compared to computers.

In addition to one's *ability* to process information, another factor the CARE model (Wojdynski and Evans 2020) considers is an individual's level of *motivation* to engage with the content. Also referred to as "involvement," it relates to the degree of personal interest or relevance a message may have to someone. Greater motivation to process a message increases the likelihood that an individual will engage more extensively with the content, closely scrutinizing any claims (Chaiken 1980; Petty and Cacioppo 1986; Wojdynski and Evans 2020). Beyond evaluating message claims, those who are more motivated to process a message may also be more likely to notice the source of the message and consider its reason for creating or distributing it (Wojdynski and Evans 2019). This is consistent with media literacy skills wherein individuals are motivated to, among other efforts, identify the author and purpose of mediated content (Hobbs and Frost 2003). To be sure, people with a greater motivation to engage with news for informational purposes are indeed more likely to recognize native advertising (Amazeen and Wojdynski 2019). In this way, involvement is categorized as outcome-relevant – engaging with news in the present context – where motivation is tied to information contained in a message (Johnson and Eagly 1990). Thus, the following prediction is expected:

H2: Recognition of native advertising is more likely when motivation to process information is high rather than low.

Like the ELM (Petty and Cacioppo 1986), the CARE model (Wojdynski and Evans 2020) theorizes that ability to process information interacts with motivation levels. Although adequate ability is a necessary precondition for message content to be processed, it is not sufficient. In the case of native advertising in digital news contexts, even with a sufficiently sized device screen,

many people do not recognize native advertising because they are not motivated to engage with news content, finding entertainment content more relevant (Amazeen and Wojdynski 2019). Of course, it would be least expected for those who are unmotivated to engage with news content to recognize native advertising when using a mobile device with a smaller-sized screen where a disclosure may be difficult to process. Conversely, it would be most likely for individuals to recognize a native ad when both engaging with news on a computer – because of its larger screen size – and being interested in engaging with news to begin with. Nonetheless, despite the evidence indicating the attenuated ability to process information presented by mobile devices (Dunaway et al. 2018; Dunaway and Soroka 2019; Kim and Sundar 2016), it may be possible that a greater motivation to engage with the content will compensate for the negative effects of mobile use. After all, while ability to process information on a smaller-sized screen is more taxing, it is not impossible. Qualitative research on a mobile news application, an environment where users tend to be significantly more engaged (Dunaway et al. 2018), suggests that readers are generally able to identify native advertising (Krouwer et al. 2019). Given that the growth of mobile usage is driven primarily by older adults (Fedeli and Matsa 2018) and less engaged news grazers (Dunaway et al. 2018; Molyneux 2018; Nelson and Lei 2018) – groups more likely to be deceived by native advertising (Amazeen and Wojdynski 2018; 2019) – understanding this interaction is particularly important. Thus, the following prediction is offered:

H3: Device type will moderate the effect of motivation to process information on recognition of native advertising such that when accessing news sites via mobile, high motivation to process will result in a greater likelihood of recognition than among those accessing news sites on computers with low motivation to process information.

Methods

To address these predictions, two studies were administered among U.S. participants. Both relied upon a similar experimental design. Study 1 was a pilot study to explore whether any relationship existed between device type and advertising recognition. It was comprised of a 6-condition design to which all participants were randomly assigned: a 2 (motivation: low or high) by 2 (disclosed article sponsor: Bank of America or Ben & Jerry's) with 2 offset controls containing no native advertising (see Table 1). A question in the study elicited self-reporting the type of device used during data collection. However, because the type of device used was not randomly assigned, any differences in outcomes may not be due solely to device type. For instance, people who are less engaged with news may choose to use a mobile device, which makes untangling the effects of device and motivation difficult. To remedy this issue, Study 2 included the same 6 conditions but also randomly assigned participants to use either a mobile phone or a desktop computer to complete the study.

– Insert Table 1 here –

In both studies, the first experimental manipulation addressed motivation. Consistent with outcome-relevant involvement where motivation is tied to information contained in a message (Johnson and Eagly 1990), participants were advised prior to stimulus exposure that they were going to see a recently published article from a news website. In the low motivation conditions (including both control conditions), participants were instructed to "Please read this as if you found it on your own, and only for as long as it keeps your interest." The high motivation conditions stated, "Please read this carefully to the end. You will be asked to answer questions about the article format, topic, author, and its source (where it was published)." The intent of this

manipulation was to vary the level of interest in attending to the message as opposed to manipulating aptitude to efficiently process information (Grabe et al. 2000).

The second manipulation in both studies involved the treatment stimulus. Half of treatment participants were exposed to a native advertisement disclosed as being sponsored by Bank of America, while the other half saw a native ad disclosed as sponsored by Ben & Jerry's. Consistent with other studies of native advertising recognition (Amazeen and Muddiman 2018; Amazeen and Wojdynski 2018), participants in the two control conditions were exposed to the same two articles except a reporter byline replaced the sponsorship disclosure.

Procedure

Respondents from both studies were invited to participate in a survey about their media habits. Upon informed consent, all participants were randomly assigned to one of 6 conditions. Participants in study 1 were allowed to take the survey on whatever type of device they preferred – no instructions were provided. Participants in study 2 were randomly assigned to complete the survey on either a mobile phone or a desktop computer. All participants were first asked about their media habits and perceptions and then read a brief article about sushi that was unrelated to the present study.[1] This was followed by the motivation manipulation and exposure to either the treatment or control stimulus. Open-ended thought-listing questions were then asked to capture what respondents were thinking while looking at the stimulus article. Following a short distractor task, advertising recall and recognition questions were asked. The final stage of the study measured perceptions of and engagement with the stimulus and publisher followed by demographic questions. Participants were fully debriefed, thanked, and compensated for their time.

Stimuli

The treatment stimulus was one of two "branded/native content" ads (IAB 2019)[2] previously used in academic research (see Appendix). By including more than one media stimulus, the study builds in an internal replication element. One stimulus was a Bank of America sponsored ad about mobile banking that was created by the content marketing provider, Brandpoint (see Amazeen and Wojdynski 2018, 2019). The other was a Ben & Jerry's sponsored ad about ice cream manufacturing that appeared in *The Guardian* (see Amazeen and Muddiman 2018). Each article was modified in two ways. First, they were edited to have an equal number of sponsor references (2 each) and to be roughly equal in length (Bank of America = 476 words; Ben & Jerry's = 449 words). Second, authorship varied by experimental condition. The articles in the control conditions had a traditional reporter byline of the fictitious "Pat Warren" followed by publication date. Articles in the treatment conditions had the reporter byline replaced with a disclosure indicating "Sponsored Content by" either Bank of America or Ben & Jerry's followed by publication date. All other aspects of the articles were identical between the control and treatment conditions including use of the masthead from the *New York Times*.

Study 1

Upon Institutional Review Board (IRB) approval, the pilot study was implemented in October 2018 via an online experiment administered through the academic TurkPrime interface among 598 Amazon Mechanical Turk (MTurk) workers (adults 18+ residing in the U.S.) who were paid $2.00. While it is arguably problematic for salaried researchers to use a corporate repository of precarious labor organized around piece work and incentivized by micropayments, these participants were paid ethically (Pittman and Sheehan 2016): the equivalent of more than the federal minimum hourly wage of US$7.25 given the median survey length of 15 minutes (M = 16.65, SD = 7.06).

Although MTurk workers are not representative of the U.S. population, there are several reasons justifying sampling from this source. First, past research indicates there is a very low incidence of recognition of native advertising in the general population. However, people who are more likely to recognize native advertising are younger and better educated (Amazeen and Wojdynski 2018), characteristics consistent with the profiles of MTurk workers (Sheehan 2018). Second, MTurk is increasingly accepted as a reliable source of data when process-related inferences rather than population projections are the objectives of the study (Berinsky, Huber, and Lenz 2012; Litman, Robinson, and Abberbock 2017; Sheehan 2018), as in the present situation. This is especially true in the case of advertising experiments where inattention to manipulations in stimuli may lead to Type II errors on theory-driven effects (Kees, Berry, Burton, and Sheehan 2017). Finally, while the use of MTurk workers has bearing on the quality of findings, empirical studies have found the quality of MTurk workers to be superior to other paid panels and comparable to student samples (Kees et al. 2017). Moreover, the TurkPrime interface was employed which facilitates online data collection for social science purposes leading to higher quality participants (Litman et al. 2017). Thus, the use of MTurk is appropriate for the present study.

From the 598 participants, standard online data quality-control practices yielded $N = 565$ (Menictas, Wang, and Fine 2011). Respondents were excluded if they skipped the demographic questions, spent less than five minutes on the survey, or if they wrote suspect answers to open-ended questions as independently judged by two trained coders (Krippendorff's $\alpha = 1.0$) suggesting server-farm workers – foreigners with little English proficiency providing low quality responses (Moss 2018). Among the final sample, participants were an average of 38 years old,

50% female, 76% White, 42% married, 34% held a bachelor's degree, and 45% identified as a Democrat.

Measures

Digital platform device type. A multiple-choice question at the end of the survey asked participants "On which type of platform are you completing this survey?" An overwhelming majority used a desktop/laptop computer (95%), 4% reported using a smartphone, and 1% a tablet-type device. For the purposes of this study, smartphone and tablet users are combined to comprise mobile device users.

Advertising recognition. As memory of content is a revealing indicator of allocation of information processing resources (Lang, Dhillon, and Dong 1995; Newhagen and Reeves 1992), this dependent variable was assessed as a binary measure (0= no, 1=yes) developed following a multi-step process used in other studies of native advertising (Amazeen and Muddiman 2018; Amazeen and Wojdynski 2018, 2019; Tutaj and van Reijmersdal 2012; Wojdynski and Evans 2016). First, an unaided recall measure asked participants whether they remembered noticing any advertising on the webpage they saw. The second step asked those who answered affirmatively (14%) to explain both where on the webpage they saw the advertising and how they knew it was advertising. A pair of trained research assistants identified responses to these open-ended questions that indicated recognition of native advertising, such as, "It said Sponsored by Ben & Jerrys" or "The entire article was an ad." In addition, the thought-listing questions (tell us what you were thinking about while viewing the previous page) – which preceded the ad recall measures – were also taken into account by the coders using the same criteria as the ad recognition open ends. This allows consideration of people who answered "no" to the ad recall question but may have clearly understood that what they were looking at was a sponsored article.

Thus, the binary measure of ad recognition was derived from the independent coding of the recognition statements as well as the open-ended thought-listing questions (Krippendorff's α = .90). Overall, 14% of the total sample recognized that the article was native advertising.

Control variables. As both age and education have been identified as significant predictors of native advertising recognition (Amazeen and Wojdynski 2018), an interval-level measure of age (M = 38.27, SD = 12.06) and an 8-item ordinal scale of education (M = 4.15, SD = 4.00; roughly "some college") were used as covariates. Perceived credibility of the *New York Times* was a control as its masthead appeared as part of the treatment stimuli. The *NYT credibility* measure is based upon a 7-point Likert-type scale where 1 = "less credible" and 7 = "more credible" (M = 4.89, SD = 1.80). News use frequency was also held constant. This measure was assessed using a 6-point ordinal scale where 1 = every day, 2 = 3-5 days/week, 3 = 1-2 days/week, 4 = once every few weeks, 5 = less often, and 6 = never. The items were reverse-coded so that higher numbers indicate greater news use frequency (M = 5.47, SD = 0.86). In addition to these measures, the situational variable of ad sponsor (Bank of America = 1; Ben & Jerry's = 2) was held constant.

Manipulation checks

To determine the effectiveness of the native advertising article manipulations, a chi-square analysis[3] of the binary advertising recognition measure (χ^2 = 34.66, p = .000) revealed that participants in the native advertising conditions were significantly more likely to recognize the webpage article as advertising (20%) than were those in the control conditions who were not exposed to an article disclosed as native advertising (2%). Thus, based upon the recognition measure, the manipulation was successful.

To determine whether the motivation manipulation was successful, *self-reported engagement* with the stimulus (Young et al. 2018) was a composite measure based upon 6 items assessed with a 7-point Likert scale (1 = strongly disagree and 7 = strongly agree): "this article was interesting to me," "I was excited to read this article," "this article held my attention," "I paid close attention to the article," "my mind kept wandering as I read this article," and "I kept getting distracted by other things as I read this article." After reverse-coding to match the direction of word polarity (with lower scores indicating less engagement), the six items were averaged to form the composite measure of engagement with the stimulus (Cronbach's $\alpha = .90$, $M = 4.81$, $SD = 1.39$). Participants in the low motivation conditions ($M = 4.72$, $SD = 1.43$) had lower self-reported engagement than did those in the high motivation conditions ($M = 5.00$, $SD = 1.30$). These differences were statistically significant [$t(563) = -2.21$, $p = .028$], indicating the motivation manipulation was successful.

Results

The first prediction (H1) was that recognition of native advertising would be less likely on a mobile device than on a computer. A cross-tabulation analysis indicates that 6.5% of mobile device users recognized the native advertising (based upon the binary recognition measure) compared to 14.0% of computer users. Although in the expected direction, a *z*-test indicates these differences are not statistically significant ($z = -1.20$, $p = .115$, one-tailed). To control for other variables which may affect advertising recognition, a binomial logistic regression analysis was specified with the binary recognition measure as the dependent variable. The independent variable was device type with controls specified for age, education, *NYT* credibility, news use frequency, sponsor, and motivation. While the model was significant [χ^2 (7, 554) = 61.29, $p = .000$; Cox & Snell = .10, Nagelkerke = .19], the coefficient for device type was not ($b = 1.19$, $\beta =$

3.30, $p = .118$). The only statistically significant coefficient was for motivation ($b = 1.88$, $\beta = 6.56$, $p = .000$) with greater motivation increasing the odds of recognition. Because it is impossible to discern from the present study design whether participants who chose to use mobile devices rather than computers were inherently less motivated, a second study to address this issue was conducted.

Study 2

Following IRB approval, study 2 was implemented in the Spring of 2019 at a private university in the New England region of the U.S. Communication students were recruited to anonymously participate in an on-campus lab study in exchange for course credit.[4] Among the 86 students who participated in the study, four were excluded from analysis for not completing the survey, yielding $N = 82$ (median survey length = 17 minutes, $M = 21.98$, $SD = 19.99$). The sample had an average age of 21, was primarily female (88%), 46% identified as Asian and 38% as White, and 42% identified as Democrats with another 39% having no political party preference.

The study protocol was identical to the pilot study with the exception of when a participant arrived at the lab, a research assistant randomly assigned them to take the online survey using either a lab-owned smartphone (an iPhone 8 with a 5.45 x 2.65-inch screen) or desktop computer (with a 22-inch monitor).[5] Although tablets are another type of mobile device that individuals rely on, they are significantly less likely to use them to access news (22%) compared to smartphones (57%) (Newman et al. 2019). Tablet users are also less likely than smartphone users to have mobile-only internet access (Horrigan and Duggan 2015). Furthermore, because tablets are more likely to be used at home rather than on mobile networks (Horrigan and Duggan 2015), distinctions between tablet and desktop computers may be lesser

than between smartphone and computer users (Dunaway et al. 2018; Napoli and Obar 2014). Thus, if any differences exist, the greatest chance of observing them would be to compare smartphones to desktop computers rather than to tablets, which is what study 2 does. Furthermore, since more people are reached by a mobile browser mode of access than via news applications (Dunaway et al. 2018), stimuli in the mobile conditions were consistent with a mobile web browser rather than a news app.

Measures

Digital platform device type. Participants were randomly assigned to use either a desktop computer (52%) or a smartphone (48%).

Advertising recognition. Using the same procedure as in the pilot study, 21% of participants affirmatively recalled seeing advertising. Coding of the recognition statements as well as the open-ended thought-listing questions (Krippendorff's $\alpha = .90$) indicated that 15% of the total sample recognized that the article was native advertising.

Control variables. Because there was little variance in age ($M = 20.86$, $SD = 1.74$) and education ($M = 3.41$, $SD = 1.29$) among study 2 participants, they are not used as covariates for the analyses. However, perceived credibility of the *New York Times* ($M = 6.60$, $SD = 0.78$), news use frequency ($M = 5.29$, $SD = 0.84$), and ad sponsor (Bank of America = 1; Ben & Jerry's = 2) were used as controls.

Manipulation checks

To determine the effectiveness of the native advertising article manipulations, a chi-square analysis of the binary advertising recognition measure ($\chi^2 = 6.90$, $p = .009$) revealed that participants in the native advertising conditions were significantly more likely to recognize the webpage article as advertising (22%) than were those in the control conditions who were not

exposed to an article disclosed as native advertising (0%). Thus, the manipulation was successful.

The success of the motivation manipulation was based upon the same composite measure of engagement with the stimulus as in the pilot study (Cronbach's $\alpha = .83$, $M = 4.07$, $SD = 1.17$). Participants in the low motivation conditions ($M = 3.84$, $SD = 1.18$) had lower self-reported engagement than did those in the high motivation conditions ($M = 4.48$, $SD = 1.04$). These differences were significant [$t(82) = -2.45$, $p = .017$] indicating the motivation manipulation was successful.

Study 2 Results

Revisiting H1, the prediction was that recognition of native advertising would be less likely on a mobile device than on a computer. A cross-tabulation analysis indicates that 5% of mobile device users recognized the native advertising compared to 23% of computer users, a statistical difference ($z = -2.32$, $p = .010$, one-tailed). A binomial logistic regression analysis with the binary recognition measure as the dependent variable and device type as the independent variable confirms this relationship [χ^2 (1, 81) = 5.86, $p = .016$; Cox & Snell = .07, Nagelkerke = .12]. When controls are added for *NYT* credibility, news consumption frequency, and sponsor, the *p*-value of the model rises to a level above the threshold of significance [χ^2 (4, 78) = 8.55, $p = .073$; Cox & Snell = .10, Nagelkerke = .18] (see Table 2) although the coefficient for device type remains significant ($b = 1.77$, $\beta = 5.87$, $p = .032$). While the evidence that users of mobile devices were less likely to recognize the advertising is in the expected direction, the support for H1 does not reach statistical significance.

– Insert Table 2 here –

Recognition of native advertising was expected to be more likely among participants with greater motivation to process the information (H2). A cross-tabulation analysis reveals that 28% of high motivation participants recognized native advertising compared to only 8% of low motivation participants. These differences are significant (z = -2.46, p = .007, one-tailed). Another binomial logistic regression analysis with the advertising recognition measure as the dependent variable and motivation as the independent variable confirms this relationship [χ^2 (1, 81) = 5.75, p = .016; Cox & Snell = .07, Nagelkerke = .12]). Even when controls for *NYT* credibility, news use frequency, and sponsor are added [χ^2 (4, 78) = 10.46, p = .033; Cox & Snell = .12, Nagelkerke = .21] (see Table 3), the coefficient for motivation remains significant (b = 2.02, β = 7.52, p = .011). Thus, H2 is supported.

– Insert Table 3 here –

To determine whether device type moderates the effect of motivation to process information on recognition (H3), a binomial logistic regression was specified with the binary recognition measure as the dependent variable and an interaction between device type and motivation level as the independent variable. A significant model indicates an effect [χ^2 (1, 81) = 10.38, p = .001; Cox & Snell = .12, Nagelkerke = .21]. The model remained significant with covariates added for *NYT* credibility, news use frequency, and sponsor [χ^2 (4, 78) = 14.15, p = .007; Cox & Snell = .16, Nagelkerke = .28] (see Table 4). A significant coefficient for the interaction term (b = 0.98, β = 2.66, p = .002) suggests that higher motivation increases the likelihood of recognition even when ability to process information is lowered by mobile device use. While these results indicate support for H3, Figure 2 illustrates the relationship between device type and motivation on recognition. Although motivation does increase the likelihood of recognition, there is no statistical difference between higher motivation mobile users (9.1%) and

lower motivation computer users (12.0%) as indicated by a one-tailed *z*-test of proportions ($z = -0.26$, $p = .397$).

-- Insert Table 4 and Figure 2 here --

Discussion

The primary aim of these studies was to determine if the type of device on which an individual views a news website affects ability to discern native advertising from a journalistic news article. As theorized by the CARE Model (Wojdynski and Evans 2020), motivation to process the content would presumably also affect native advertising recognition, as well. The present findings offer a preliminary understanding of how mobile devices affect ability to recognize native advertising content on a legacy news web page, at least within the U.S. media system and in the context of a leading national news organization such as the *New York Times*. Although the results of a pilot study among MTurk workers who self-selected the type of device used suggested motivation was the sole influence on ad recognition, it was impossible to disentangle whether less motivated media users tend to use mobile devices rather than computers. Thus, the study was replicated among a population of college students in a lab where use of device type could be randomized. In isolation, the effects of device use again had only a directional – rather than statistically significant – influence on ability to recognize native advertising. However, examining the interaction between device type and motivation revealed statistically significant evidence of their effects on advertising recognition. People with greater motivation to process media content were more likely to recognize the native advertising, but not enough to compensate for the reduced ability to cognitively process information that is inherent with mobile consumption. Thus, as news increasingly blurs with commercial content (Einstein

2016), how people consume news will affect their ability to identify and respond to what they think is on their screens.

The theoretical contribution of this research is an initial empirical test of two of the tenets in Wojdynski and Evans' (2020) CARE Model. As predicted, an individual's motivation and ability to process a mediated message affected likelihood of covert advertising recognition. Although the present study did not examine whether recognition was achieved via "top-down" processing of the disclosure or "bottom-up" processing of message or peripheral characteristics, this could be an area for future research. Given the greater attentional and cognitive processing costs of accessing news via mobile devices (Dunaway et al. 2018; Dunaway and Soroka 2019), it may be that individuals would be less likely to notice disclosures but more likely to rely upon context characteristics such as sensing persuasive intent (Wojdynski and Evans 2020). Methods such as eye tracking (e.g. Wojdynski and Evans 2016) or qualitative user-experience interviews (e.g. Krouwer et al. 2019) would be useful toward this investigation.

With the increasing use of mobile technology to access news (Nelson and Lei 2018), the practical implications of these results are alarming. As native advertising has proliferated among digital publishers (Einstein 2016), it may be more difficult than ever for mobile news consumers to distinguish journalism from commercialism. A nationally representative sample of U.S. adults revealed that fewer than 1 in 10 were able to recognize native advertising. Increasing age and less education hindered ability to identify covert advertising (Amazeen and Wojdynski 2018). Other academic studies with less representative samples have come to similar conclusions, finding that most individuals are unable to discriminate between a news article and advertising masquerading as news (Amazeen and Bucy 2019; Amazeen and Muddiman 2018; Wojdynski and Evans 2016). Given that the increase in mobile news consumption has been driven primarily

by older adults (Fedeli and Matsa 2018) and by light users who graze for news via mobile web browsers rather than news apps (Dunaway et al. 2018; Molyneux 2018; Nelson and Lei 2018), the present findings suggest that a growing number of mobile news consumers will be deceived by the content that appears to be from *The New York Times*, *The Wall Street Journal*, *The Guardian*, or other news organizations even if they are motivated to read such material. However, it should be recognized that the present study did not test native advertising that specifically appeared in the *New York Times* nor were the stimuli optimized for the device-specific contexts in which they appeared. These, of course, are avenues that merit future research.

Two industry practices compound the concern these findings raise. First, social sharing is a strategic imperative of many native advertising campaigns in order to enhance and amplify reach and awareness (Lieb 2013). As social media platforms shift toward mobile-first or mobile only access (Clement 2019), identifying native advertising that appears to be a news article shared by a social media user may be difficult for many. The present findings also suggest that even when people are highly motivated to consume news content – such as when shared by opinion leaders or close others (Sterrett et al 2019) – ability to distinguish between editorial and commercial material will be compromised on mobile devices.

Second, although the U.S. Federal Trade Commission (FTC) mandates the use of "clear and conspicuous" disclosures by publishers to alert the public that the source of content is commercial rather than journalistic (FTC 2015), disclosures within social media have been problematic. Beyond the issue of whether the disclosures meet the unstandardized requirements of "clear and conspicuous" (Amazeen and Wojdynski 2018; An, Kang, and Koo 2019; Einstein 2016), the mere presence of disclosures on social media is often missing. Studies have found that

when native advertising from news publishers is shared on Facebook or Twitter, the mandated native advertising disclosures are absent more than half the time (Amazeen and Vargo 2019; An et al. 2018). Clearly, even the most highly motivated mobile users will be unable to correctly interpret a seeming news article shared by a social media user if no disclosure is present.

According to the CARE Model (Wojdynski and Evans 2020), the outcomes of processing covert advertising will differ based upon whether the content is recognized as advertising or not. Typically, resistance strategies are employed to defend against persuasion when advertising is recognized (Friestad and Wright 1994) and non-defensive strategies – such as associative learning – may be generated in the absence of advertising recognition (Evans and Park 2015). Indeed, research has shown a greater amount of cognitive counterarguing among individuals who recognize native advertising compared to those who do not (Amazeen and Wojdynski 2019). In turn, this resistance generally leads to less favorable perceptions of the message content (Amazeen and Muddiman 2018; Wojdynski and Evans 2016; although see Krouwer et al. 2018, 2019), of the sponsor of the content (Wojdynski and Evans, 2016; although see Krouwer et al. 2018, 2019), and of the publisher of the content (Amazeen and Muddiman 2018; Amazeen and Wojdynski 2018). However, if an individual is deceived and the correct schema is not triggered, they will not employ relevant coping mechanisms such as counterarguing or negative affect (Wojdynski and Evans 2020). Thus, for instance, when the baby powder manufacturer Johnson & Johnson publishes a native ad debunking myths about the safety of personal care products (T Brand Studio 2019), mobile news users may be more likely to be deceived into thinking the content is based upon the reporting of the *New York Times*. Similarly, mobile users who encounter a native ad in *The Boston Globe's* health vertical, *STAT News*, may be more likely to

think it is a journalistic article about how Purdue Pharma is helping to combat opioid addiction (Bigal 2019).

As with any research, certain limitations need acknowledgement. First, the appearance of native advertising varies by news organization as well as cross-nationally (Ferrer Conill et al., 2020). Because this study was conducted within a U.S. context, replication is warranted in other countries where native advertising is prevalent. Second, the use of a student sample in study 2 may actually have underestimated the effects of mobile devices on recognition. While younger adults tend to be less motivated to consume news than older adults, they are digital natives and thus more comfortable with technology. Moreover, research has shown that identifying native advertising is more likely among younger people who are better educated (Amazeen and Wojdynski 2018). However, these processes are also likely shaped by the differences in media systems and governance of native advertising by which the present study, itself, is limited. Thus, replicating the randomized assignment of devices across a larger, more diverse sample merits further study. Furthermore, although participants in these studies were voluntarily exposed to native advertising content, it was in the context of research. Whether people would respond the same way in natural settings is worthy of unobtrusive observational study.

Particularly with experimental research designs, trade-offs between reliability and validity must be made. Since this was a first (to the author's knowledge) experimental attempt to measure differences in recognition of native advertising between mobile devices and computers, a more simplistic approach that was easier to implement and replicate was selected over a more complex design that risks introducing confounding variables. While participants were presented with only a single item to evaluate, offering an array of content from which participants can select would advance the complexity as well as ecological validity of the study and thus warrants

further research. Other future methods might use eye tracking or other real-time testing, or use surveys/questionnaires, or discussion. Despite these limitations, the present results provide evidence that the trend in mobile consumption of news poses constraints on discriminating between editorial and advertising in an increasingly blurry media environment.

References

Amazeen, Michelle A., and Erik P. Bucy. 2019. "Conferring Resistance to Digital Disinformation: The Inoculating Influence of Procedural News Knowledge." *Journal of Broadcasting & Electronic Media* 63 (3): 415-432. doi.org/10.1080/08838151.2019.1653101

Amazeen, Michelle A., and Ashley R. Muddiman. 2018. "Saving Media or Trading on Trust? The Effects of Native Advertising on Audience Perceptions of Legacy and Online News Publishers." *Digital Journalism* 6 (2): 176-195. doi.org/10.1080/21670811.2017.1293488

Amazeen, Michelle A., and Chris J. Vargo. 2019. "Sharing Native Advertising on Twitter: Content Analyses Examining Disclosure Practices and Their Inoculating Influence." Available at SSRN: https://ssrn.com/abstract=3700065

Amazeen, Michelle A., and Bartosz W. Wojdynski. 2018. "The Effects of Disclosure Format on Native Advertising Recognition and Audience Perceptions of Legacy and Online News Publishers." *Journalism*. Advance online publication. doi.org/10.1177/1464884918754829

Amazeen, Michelle A., and Bartosz W. Wojdynski. 2019. "Reducing Native Advertising Deception: Revisiting Antecedents and Consequences of Persuasion Knowledge in Digital News Contexts." *Mass Communication and Society*, *22*(2), 222-247. doi.org/10.1080/15205436.2018.1530792

An, Soontae, Hannah Kang, and Sra Koo. 2019. "Sponsorship Disclosures of Native Advertising: Clarity and Prominence." *Journal of Consumer Affairs* 53 (3): 998-1024. https://doi.org/10.1111/joca.12212

Anderson, Monica. 2019. “Mobile technology and home broadband.” Pew Research Center, June 13. https://www.pewinternet.org/2019/06/13/mobile-technology-and-home-broadband-2019/

Banas, John A., and Gregory Miller. 2013. “Inducing Resistance to Conspiracy Theory Propaganda: Testing Inoculation and Metainoculation Strategies.” *Human Communication Research* 39 (2): 184-207. doi.org/10.1111/hcre.12000

Baym, Geoffrey. 2017. “Journalism and the Hybrid Condition: Long-Form Television Drama at the Intersections of News and Narrative.” *Journalism* 18 (1): 11-26. doi.org/10.1177/1464884916657521

Berinsky, Adam J., Gregory A. Huber, and Gabriel S. Lenz. 2012. “Evaluating Online Labor Markets for Experimental Research: Amazon.com’s Mechanical Turk.” *Political Analysis* 20 (3): 351-368. DOI: https://doi.org/10.1093/pan/mpr057

Bigal, Marcelo E. 2019. “Leveraging technology to help address the opioid crisis.” *STAT News*, February 7. https://www.statnews.com/sponsor/2019/02/07/leveraging-technology-to-help-address-the-opioid-crisis/

Chaiken, Shelly. 1980. “Heuristic Versus Systematic Information Processing and the Use of Source Versus Message Cues in Persuasion. *Journal of Personality and Social Psychology* 39 (5): 752-766. doi.org/10.1037/0022-3514.39.5.752

Clement, J. 2019. “Social media statistics and facts.” Statista, March 28. https://www.statista.com/topics/1164/social-networks/

Cronin, Anne M. 2018. *Public relations capitalism: Promotional culture, publics and commercial democracy*. London: Palgrave.

Donner, Jonathan, and Marion Walton. 2013. "Your Phone Has Internet – Why Are You at a Library PC?" In *Proceedings of INTERACT 2013: 14th IFIP TC 13 International Conference*, edited by Paula Kotzé, Gary Marsden, and Gitte Lindgaard, 347-364. Berlin: Springer.

Dunaway, Johanna, and Stuart Soroka. 2019. "Smartphone-Size Screens Constrain Cognitive Access to Video News Stories." *Information, Communication & Society*. Advance online publication. https://doi.org/10.1080/1369118X.2019.1631367

Dunaway, Johanna, Kathleen Searles, Mingxiao Sui, and Newly Paul. 2018. "News Attention in a Mobile Era." *Journal of Computer-Mediated Communication* 23 (2): 107-124. doi.org/10.1093/jcmc/zmy004

Edgerly, Stephanie, and Emily K. Vraga. 2019. "News, Entertainment, or Both? Exploring Audience Perceptions of Media Genre in a Hybrid Media Environment." *Journalism* 20 (6): 807-826. doi.org/10.1177/1464884917730709

Einstein, Mara. 2016. *Black Ops Advertising: Native Ads, Content Marketing, and the Covert World of the Digital Sell*. New York: O/R Books.

Evans, Nathaniel J., and Dooyeon Park. 2015. "Rethinking the Persuasion Knowledge Model." *Journal of Current Issues & Research in Advertising* 36 (2): 157-176. doi.org/10.1080/10641734.2015.1023873

Fedeli, Sophia, and Katerina Eva Matsa. 2018. "Use of mobile devices for news continues to grow, outpacing desktops and laptops." Pew Research Center, July 17. https://www.benton.org/headlines/use-mobile-devices-news-continues-grow-outpacing-desktops-and-laptops

Ferrer Conill, Raul, Erik Knudsen, Corinna Lauerer, and Aviv Barnoy. 2020. "The Visual Boundaries of Journalism: Native Advertising and the Convergence of Editorial and Commercial Content." Paper presented to the Journalism Studies Division at the International Communication Association Annual Conference.

Friestad, Marion, and Peter Wright. 1994. "The Persuasion Knowledge Model: How People Cope with Persuasion Attempts." *Journal of Consumer Research* 21 (1): 1-31. doi.org/10.1086/209380

Grabe, Maria Elizabeth, Annie Lang, Shuhua Zhou, and Paul David Bolls. 2000. "Cognitive Access to Negatively Arousing News." *Communication Research* 27 (1): 3-26. doi.org/10.1177/009365000027001001

Ha, Louisa, and Kim McCann. 2008. "An Integrated Model of Advertising Clutter in Offline and Online Media." *International Journal of Advertising* 27 (4): 569-592. doi.org/10.2501/S0265048708080153

Hobbs, Renee, and Richard Frost. 2003. "Measuring the Acquisition of Media-Literacy Skills." *Reading Research Quarterly* 38 (3): 330-355. doi.org/10.1598/RRQ.38.3.2

Horrigan, John B., and Maeve Duggan. 2015. "Home broadband 2015." Pew Research Center, December 21. https://www.pewinternet.org/2015/12/21/home-broadband-2015/

IAB. 2019, May 19. "IAB Native Advertising Playbook 2.0." https://www.iab.com/insights/iab-native-advertising-playbook-2-0/

Kamvar, Maryam, and Shumeet Baluja. 2006. "A Large-Scale Study of Wireless Search Behavior: Google Mobile Search." In *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems* (701-709). New York: ACM.

Kees, Jeremy, Christopher Berry, Scot Burton, and Kim Sheehan. 2017. "An Analysis of Data Quality: Professional Panels, Student Subject Pools, and Amazon's Mechanical Turk." *Journal of Advertising* 46 (1): 141-155. doi.org/10.1080/00913367.2016.1269304

Kim, Kee June, and S. Shyam Sundar. 2016. "Mobile Persuasion: Can Screen Size and Presentation Mode Make a Difference to Trust?" *Human Communication Research* 42 (1): 45-70. doi.org/10.1111/hcre.12064

Kovach, Bill, and Tom Rosenstiel. 2001. *The Elements of Journalism: What Newspeople Should Know and the Public Should Expect.* New York: Crown Publishers.

Krouwer, Simone, Karolien Poels, and Steve Paulussen. 2018. "To Disguise or to Disclose? The Influence of Disclosure Recognition and Brand Presence on Readers' Responses toward Native Advertisements in Online News Media." *Journal of Interactive Advertising* 17 (2): 124-137. doi.org/10.1080/15252019.2017.1381579

Krouwer, Simone, Karolien Poels, and Steve Paulussen. 2019. "Exploring Readers' Evaluations of Native Advertisements in a Mobile News App." *Journal of Media Business Studies* 16 (2): 1-18. doi:10.1080/16522354.2019.1573396

Johnson, Blair T., and Alice H. Eagly. 1990. "Involvement and Persuasion: Types, Traditions, and the Evidence." *Psychological Bulletin* 107 (3): 375-384. doi.org/10.1037/0033-2909.107.3.375

Lang, Annie. 2000. "The Limited Capacity Model of Mediated Message Processing." *Journal of Communication* 50 (1): 46-70. doi.org/10.1111/j.1460-2466.2000.tb02833.x

Lang, Annie, Kulijinder Dhillon, and Qingwen Dong. 1995. "The Effects of Emotional Arousal and Valence on Television Viewers' Cognitive Capacity and Memory." *Journal of*

Broadcasting and Electronic Media 39 (3): 313-327. doi.org/10.1080/08838159509364309

Lieb, Rebecca. 2013. "Defining and Mapping the Native Advertising Landscape." *Altimeter Research*. http://www.americanpressinstitute.org/wp-content/uploads/2013/10/report-defining-mapping-native-advertising-landscape-rebecca-lieb.pdf

Leib Litman, Jonathan Robinson, and Tzvi Abberbock. 2017. "TurkPrime.com: A Versatile Crowdsourcing Data Acquisition Platform for the Behavioral Sciences." *Behavior Research Methods* 49: 433-442. doi.org/10.3758/s13428-016-0727-z

McCombs, Maxwell E., and Donald L. Shaw. 1972. "The Agenda-Setting Function of Mass Media." *Public Opinion Quarterly* 36 (2): 176-187. doi.org/10.1086/267990

Menictas, Con, Paul Wang, and Brian Fine. 2011. "Assessing Flat-Lining Response Style Bias in Online Research." *Australasian Journal of Market & Social Research* 19 (2): 34-44.

Molyneux, Logan. 2018. "Mobile News Consumption: A Habit of Snacking." *Digital Journalism* 6 (5): 634-650. doi.org/10.1080/21670811.2017.1334567

Moss, Aaron. 2018. After the bot scare: Understanding what's been happening with data collection on MTurk and how to stop it. CloudResearch. https://www.cloudresearch.com/resources/blog/after-the-bot-scare-understanding-whats-been-happening-with-data-collection-on-mturk-and-how-to-stop-it/

Napoli, Philip M., and Jonathan A. Obar. 2014. "The Emerging Mobile Internet Underclass: A Critique of Mobile Internet Access." *The Information Society* 30 (5): 323-334. doi.org/10.1080/01972243.2014.944726

Nelson, Jacob L., and Ryan F. Lei. 2018. "The Effect of Digital Platforms on News Audience Behavior." *Digital Journalism* 6 (5): 619-633. doi.org/10.1080/21670811.2017.1394202

Newhagen, John E., and Byron Reeves. 1992. "The Evening's Bad News: Effects of Negative Compelling Television News Images on Memory." *Journal of Communication* 42 (2): 25-41. doi.org/10.1111/j.1460-2466.1992.tb00776.x

Newman, Nic, Richard Fletcher, Antonis Kalogeropoulos, David A.L. Levy, and Rasmus Kleis Nielsen. 2018. "Reuters Institute Digital News Report 2018." Reuters Institute for the Study of Journalism. http://www.digitalnewsreport.org/survey/2018/.

Newman, Nic, Richard Fletcher, Antonis Kalogeropoulos, and Rasmus Kleis Nielsen, 2019. "Reuters Institute Digital News Report 2019." Reuters Institute for the Study of Journalism. http://www.digitalnewsreport.org/

Ohme, Jakob. 2020 "Mobile but Not Mobilized? Differential Gains from Mobile News Consumption for Citizens' Political Knowledge and Campaign Participation." *Digital Journalism* 8 (1): 103-125. DOI: 10.1080/21670811.2019.1697625

Petty, Richard E. and John T. Cacioppo. 1986. "The Elaboration Likelihood Model of persuasion." In *Advances in Experimental Social Psychology* (Vol. 19), edited by Leonard Berkowitz, 123-205. New York: Academic Press.

Pew Research Center. 2012. "In changing news landscape, even television is vulnerable." https://www.people-press.org/2012/09/27/section-3-news-attitudes-and-habits-2/#most-graze-for-news

Pittman, Matthew, and Kim Sheehan. 2016. "Amazon's Mechanical Turk a Digital Sweatshop? Transparency and Accountability in Crowdsourced Online Research." *Journal of Media Ethics 31* (4): 260-262. doi.org/10.1080/23736992.2016.1228811

Pompper, Donnalyn, and Lindsay Hoffman. 2018. "What IS News?" *Mass Communication and Society* 21 (5): 662-664. doi.org/10.1080/15205436.2018.1475810

Richards, Adam S., John A. Banas, and Yoav Magid. 2017. "More on Inoculating Against Reactance to Persuasive Health Messages: The Paradox of Threat." *Health Communication* 32 (7): 890-902. doi: 10.1080/10410236.2016.1196410

Rodgers, Shelly, and Esther Thorson. 2000. "The Interactive Advertising Model: How Users Perceive and Process Online Ads." *Journal of Interactive Advertising* 1 (1): 42-61. doi.org/10.1080/15252019.2000.10722043

Shearer, Elisa. 2018. "Social media outpaces print newspapers in the U.S. as a news source." Pew Research Center, December 10. https://www.pewresearch.org/fact-tank/2018/12/10/social-media-outpaces-print-newspapers-in-the-u-s-as-a-news-source/

Sheehan, Kim Bartel. 2018. "Crowdsourcing Research: Data Collection with Amazon's Mechanical Turk." *Communication Monographs* 85 (1): 140-156. doi.org/10.1080/03637751.2017.1342043

Sterrett, David, Dan Malato, Jennifer Benz, Liz Kantor, Trevor Tompson, Tom Rosenstiel, Jeff Sonderman, and Kevin Loker. 2019. "Who Shared It?: Deciding What News to Trust on Social Media." *Digital Journalism* 7 (6): 783-801. doi.org/10.1080/21670811.2019.1623702

Stroud, Natalie Jomini, Cynthia Peacock, and Alexander L. Curry. 2019. "The Effects of Mobile Push Notifications on News Consumption and Learning." *Digital Journalism* 8 (1): 32-48. DOI: 10.1080/21670811.2019.1655462

T Brand Studio. 2019. "When it comes to personal care products, is natural always better?" *The New York Times*. https://www.nytimes.com/paidpost/johnson-and-johnson/when-it-comes-to-personal-care-products-is-natural-always-better.html

Tandoc, Jr., Edson C., Zheng Wei Lim, and Richard Ling. 2018. "Defining 'Fake News.'" *Digital Journalism* 6 (2): 137-153. doi.org/10.1080/21670811.2017.1360143

Tutaj, Karolina, and Eva A. van Reijmersdal. 2012. "Effects of Online Advertising Format and Persuasion Knowledge on Audience Reactions." *Journal of Marketing Communications* 18 (1): 5-18. doi.org/10.1080/13527266.2011.620765

Wojdynski, Bartosz W., and Nathaniel J. Evans. 2016. "Going Native: Effects of Disclosure Position and Language on the Recognition and Evaluation of Online Native Advertising." *Journal of Advertising* 45 (2): 157-168. doi.org/10.1080/00913367.2015.1115380

Wojdynski, Bartosz W., and Nathaniel J. Evans. 2020. "The Covert Advertising Recognition and Effects (CARE) Model: Processes of Persuasion in Native Advertising and Other Masked Formats." *International Journal of Advertising* 39 (1): 4-31. https://doi.org/10.1080/02650487.2019.1658438

Young, Dannagal G., Kathleen Hall Jamieson, Shannon Poulsen, and Abigail Goldring. 2018. "Fact-checking Effectiveness as a Function of Format and Tone: Evaluating FactCheck.org and FlackCheck.org." *Journalism & Mass Communication Quarterly* 95 (1): 49-75. doi.org/10.1177/1077699017710453

Zelizer, Barbie. 2004. *Taking Journalism Seriously: News and the Academy*. Thousand Oaks: Sage.

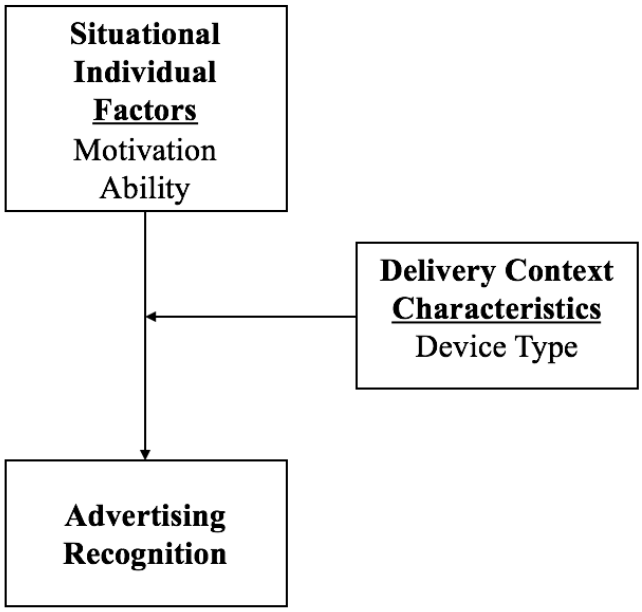

Figure 1. Select CARE Model factors of antecedents to advertising recognition.

Note: Adapted from Wojdynski and Evans 2020.

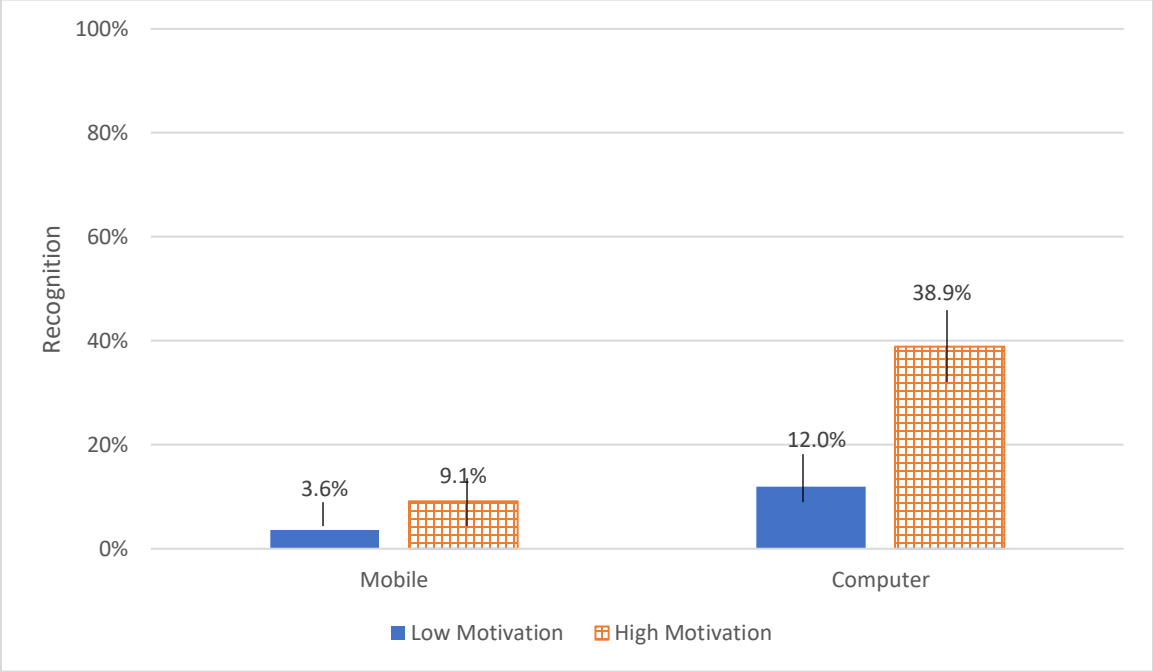

Figure 2. Interaction effect of device type and motivation on native advertising recognition.

Note: *N* = 82, CL = 95%

Table 1. Study Design

	Study 1: online pilot	Study 2: laboratory	Sponsor		Motivation	
Condition	*N*	*N*	BofA	B&J	Low	Hi
1	97	14	x		x	
2	93	15	x			x
3	95	12		x	x	
4	92	14		x		x
5 (control)	95	14	x		x	
6 (control)	93	13		x	x	
Total:	565	82				

Table 2. Binomial Logistic Regression of Device Type Predicting Native Advertising Recognition

	b **(SE)**	**β**
Device type^{++}	1.77 (0.83)	5.87*
NYT credibility	- 0.40 (0.39)	0.67
News use frequency	- 0.45 (0.37)	0.64
Sponsor	0.49 (0.68)	1.63
Constant	- 0.51 (3.60)	
χ^2	8.55^{+}	
Nagelkerke R^2	.18	
N	82	

Note: $^{*}p < .05$; $^{+}p < .10$; $^{++}$device type: 1 = mobile, 2 = computer

Table 3. Binomial Logistic Regression of Motivation Level Predicting Native Advertising Recognition

	***b* (SE)**	**β**
Motivation level	2.02 (0.79)	7.53*
NYT credibility	- 0.76 (0.42)	2.15
News use frequency	- 0.47 (0.40)	0.62
Sponsor	0.77 (0.70)	2.15
Constant	1.47 (3.33)	
χ^2	10.46*	
Nagelkerke R^2	.21	
N	82	

Note: *$p < .05$

Table 4. Binomial Logistic Regression of Interaction between Device Type and Motivation Level in Predicting Native Advertising Recognition

	***b* (SE)**	**β**
Device type^{++} x Motivation	0.98 (0.31)	2.66**
NYT credibility	- 0.68 (0.41)	0.51^{+}
News use frequency	- 0.39 (0.40)	0.68
Sponsor	0.61 (0.73)	1.84
Constant	1.34 (3.50)	
χ^2	14.15**	
Nagelkerke R^2	.28	
N	82	

Note: $^{**}p < .01$; $^{+}p < .10$; $^{++}$device type: 1 = mobile, 2 = computer

[1] Participants in the pilot study were a subset of a larger project related to how people process native advertising disclosures (Amazeen, 2020). The sourceless article about sushi (360 words) was used as a control article as in other studies (Banas and Miller 2013; Richards, Banas, and Magid 2017). For consistency, the article was again used in study 2. There were no procedures from the larger study that could have affected the outcome measures in the present study.

[2] Formerly referred to as "customized" (Einstein, 2016) native advertisements, the IAB (2019) now defines branded/native content ads as "paid content from a brand that is published in the same format as full editorial on a publisher's site, generally in conjunction with the publisher's content teams themselves."

[3] All analyses were conducted using SPSS v.24.

[4] To foster understanding of the importance of generating new knowledge, students are provided the opportunity to participate in various research activities of their choice from focus groups, surveys, and experiments to attending research lectures. Guidelines are followed to ensure voluntariness, avoid undue influence, preserve confidentiality and anonymity, and avoid coercion.

[5] The device manipulation was not integrated into a full factorial design as it would have doubled the number of conditions required. A chi-square analysis indicates there were no significant differences between condition and device type ($\chi^2 = 7.06$, $p = .216$).