

ANXIETY'S EFFECT ON NEWS SEEKING AND AVOIDING:
AN EVOLUTIONARY PERSPECTIVE

By

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ABSTRACT

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Mass communication scholars have amassed knowledge of what drives people to approach, and increasingly, to avoid news. A new direction in this research argues that evolutionary processes explain all human behavior at the most fundamental level. This research incorporates news consumption and general information-seeking theories as part of evolutionary psychology. In doing so, it explains seeking and avoiding responses to important but anxiety-provoking stories in the news.

The study describes an online survey conducted in February 2021 that measures intention to seek and avoid a subsequent news story after a first story is read ($N=516$). The findings clarify how three variables influence avoidance: 1) chronic anxiety, 2) the immediate anxiety response to the news story, and 3) news-search efficacy. The study finds news-search efficacy consistently predicts news seeking while chronic anxiety consistently predicts intention to avoid a subsequent story. Additionally, there is a moderating effect for chronic anxiety. For people with a high level of chronic anxiety, a stressful story decreases their likelihood of avoiding subsequent stories on the topic. The role of story anxiety does not consistently predict either seeking or avoiding.

Demographics and news habits were used as control variables, and the research found subsequent story avoiding was higher among conservative than liberal news users. The remaining control variables had small and inconsistent effects.

The dissertation explicates how this study and previous studies by the author imply a news-seeking and avoiding model that rests on the foundations of evolutionary psychology.

Finally, it argues that news consumption and avoidance studies cannot ignore the important role of preexisting predispositions like chronic anxiety. Theoretical and application implications of the research are discussed.

Keywords: Evolutionary psychology, news avoidance, news story importance, news efficacy, chronic anxiety, fear appeals, news consumption

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I dedicate this dissertation to my children, Kaylin and Jackson.
Thank you for your love and support through all the changes I've thrown at you over the years.
I love you

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CHAPTER 1

INTRODUCTION

This dissertation is about a fundamental challenge in today's society – how people cope with a highly negative and stress-inducing news environment. The problem has reached the point that some psychologists recommend news avoidance, especially among those who already have high anxiety levels (Pinker, 2018; Price, 2003). Pinker (2018) suggests negative news coverage clouds the reality that the world is doing better on items including prosperity, safety, and health, and therefore, humans should take part in their own information gathering and limit exposure to news content.

Even without this psychological advice, negative emotional responses are already cited as a key reason people limit news (Newman et al., 2018; 2019). Both news seeking and avoidance are evolutionary-related behaviors that help protect an organism under continued states of physical and emotional distress (Gilbert, 2001). Coronavirus news avoidance is a recent example. At first, news consumption soared, and psychologists warned too that much news use would lead to unhealthy levels of anxiety (Nielsen et al., 2020; Weitman & Essling, 2020), and despite the topic remaining important throughout 2020 and 2021, people eventually reported greater avoidance (Nielsen et al., 2020; Weitman & Essling, 2020).

Therefore, it is established that people consume important news, especially in times of crisis (Gramlich, 2017; Norton, 2020; Siebenhaar et al., 2020), and it is essential to do so. In today's globalized society, how would people know about the dangers around them and make informed decisions about protecting themselves? The need for information that poses a risk is rooted in humans' evolutionary processes to surveil their environments (Shoemaker, 1996).

Clearly, the relationship between anxiety and news use is complicated. Surveillance-needs, negative psychological responses, and subsequent behaviors like avoiding important information may seemingly be at odds with one another. However, evolutionary psychology can explain both approach and avoidance of news. This elucidation is critical for both psychologists and the news industry – psychologists, so they can make informed recommendations to patients about following and avoiding important news, and news content creators, so they can produce content to attract and retain their audiences.

Before testing the evolutionary processes that explain news seeking and avoiding, the following sections provide further insight into how emotional response relates to these decisions. Subsequent chapters will review relevant literature on the topic of emotion, information seeking, and news use and test a model that postulates that anxiety levels, both as an immediate response to a story and a chronic condition, predict whether a person will seek or avoid news about a topic. Equally important, the research measures how one's efficacy in finding additional news information relates to decisions to approach or avoid. This may support the importance for news organizations to create content that is easy to find among the deluge of online information.

News Consumption Research: A Look Back

In 1959, Eli Katz penned an editorial calling for a shift in mass communications research from its primary focus on media effects to the budding new area of media consumption studies (Katz, 1959). Katz (1959) argued media effects were well understood and accepted, but we needed to understand why people used mass media. Since then, scholars have accumulated a vast number of studies on why people use news, beginning with uses and gratifications research (Diddi & Larose, 2006; Katz et al., 1973) and expanding to more modern-day approaches such as the opportunity, motivation, and ability model (Lee, 2013). Scholars have also developed and

applied models on risk and fear-related consumption, such as the extended parallel process model (Witte, 1994) and information utility model (Knobloch-Westerwick et al., 2005), which more specifically explain how approach and avoidance relate to media effects.

The accumulation of this research explains much of what is known about mass media dependence. Gratifications that lure people to news and help maintain their news habits include surveillance, entertainment, and social needs, including the need to discuss news with others (Chen & Thorson, 2020; Katz et al., 1973; Lee, 2013; Palmer & Toff, 2020; Poindexter, 2010). Palmgreen and Rayburn (1984) also suggest there is an expectancy-value to news that leads to consumption decisions based on individual consideration of gratifications versus the need for new information. This is supported in studies that find perceived story importance and relevance predict greater consumption, which is why professional journalists more often select stories that fulfill these audience needs (Huang, 2009; Lee, 2013; Harcup & O'Neill, 2017). Journalists will also frame stories to highlight threats, such as crime and accidents, which heightens an audiences' surveillance-driven dependence (Gardner, 2008; Schudson, 1999).

Similarly, media dependency predicts high news consumption with surges seen in times of crisis (Althaus, 2002; Gramlich, 2017) and during election years (Menchen-Trevino, 2012). Throughout 2020, the 24-hour, opinion-driven cable networks increased viewers by 45% for Fox News and by 85% for CNN (Johnson, 2020), which was likely propelled by dependency needs for information about the pandemic and the divisive election between Donald Trump and Joe Biden. Shoemaker (1996) suggests that humans are predisposed to monitor threats presented in the news as an instinctual function of evolution (Shoemaker, 1996). Shoemaker's primary argument is that "negative" news stories trigger news monitoring to protect oneself from dangers (Shoemaker, 1996). Chapter 2 will highlight exceptions to this simplistic evolutionary argument,

and forthcoming sections will show how new findings and the present research can build upon Shoemaker's classic work.

Besides the need for important information, news use is also driven by a strong interest in politics and current affairs, and the inverse is also true. Research consistently finds political interest and civic participation predict higher amounts of news use (Bennett, 2000; Blekesaune et al., 2012; Esser & Steppat, 2017; Strömbäck et al., 2013). Kwon et al. (2021) also found that following local social media accounts, including news, related to greater online civic participation. The relationship between higher amounts of news consumption and civic and political interest is a dominant area of study in political communications. Scholars theorize that increasing news use will help foster the democratic principles of being an informed citizen (Boulianne, 2020). Given this, much attention is focused on media consumption by youth (e.g., Edgerly et al., 2018; Shehata, 2016; Van den Bulck, 2006). Scholars find youth are especially disconnected from politics and are indifferent to news – a pattern that has persisted through the expansion of available online news content (Bennett, 2000; Edgerly et al., 2018).

A third reason people consume news is social needs, including keeping up in conversations with others (Diddi & Larose, 2006; Palmer & Toff, 2020; Poindexter, 2010). Palmer and Toff's (2020) qualitative analysis of news avoiders found that sometimes people consume news to avoid the embarrassment of being uninformed around friends. Chen and Thorson (2020) showed that the single biggest predictor of paying for news is for its value in conversing with others. It is likely this word-of-mouth discussion also contributes to further news use through reinforcing spirals of discussions and feedback loops, which help shape one's social identity and leads to feelings of belonging (Slater, 2007). Katz et al. (1973) would argue this is

another primary gratification provided by news as people feel comfort among others who echo their beliefs.

Additional reasons for news consumption, as outlined in uses and gratifications research, include entertainment and escapism (Katz et al., 1973) Diddi and Larose (2006) also suggest people develop a para-social relationship with television personalities, which is akin to creating a feeling of friendship often driven by shared beliefs. This type of relationship might help explain cable news programming's success as hosts often gain celebrity status, and viewers feel a sense of belonging through mutual political ideologies (Jurkowitz et al., 2020).

A person's connectedness to news also explains consumption and avoidance. In a review of news use research, Tunney (2020) suggests that news consumption is based on an individual's relationship with news. Like human relationships, factors including satisfaction and endurance – primary determinants in the strength of interpersonal relationships – also explain why people use news (Tunney, 2020). For example, satisfaction in a human-media relationship describes attachments relating to fulfillment and gratification, while endurance refers to the length of time the relationship has persisted. Tunney (2020) suggests endurance in the context of news equates to a news habit. Diddi and LaRose (2006) applied a uses and gratifications framework to study news use among college students, found habit strength was the most predictive measure of whether students used news. In youth studies, parental modeling predicts whether news consumption continues through adulthood (Edgerly et al., 2017; Shehata, 2016; Van den Bulck, 2006). Tunney's (2020) theoretical work also describes a process of churning, which is analogous to breaking up and reuniting. Similarly, relationships with news are also subject to fluctuations in strength and habits throughout a person's life and in times of need, such as periods of crisis.

A Shift toward News Avoidance Research

Today's audiences can connect to news in seconds, and news feeds, apps, and social media algorithms reduce the need for active news seeking. Yet, as access increases, the split between heavier news users and frequent news avoiders also increases (Elvestad et al., 2014; Strömbäck et al., 2013). Active news avoidance is gaining popularity in news-consumption research (e.g., Fletcher et al., 2020; Palmer & Toff, 2020; Skovsgaard & Andersen, 2020). This type of avoidance assumes that people encounter news and make assessments about whether to avoid news on that topic in the future.

Since 2016, Reuters Institute has attempted to identify people's motives for intentionally avoiding news in its Digital News Report – an annual cross-national survey of more than 70,000 participants. The research establishes that news avoidance is a widespread behavior, with 32% of respondents admitting to intentional avoidance in 2019, even amid the spread of global populism that dominated the news in many parts of the world (Newman et al., 2019). Previous years found a similar percent of intentional news avoidance (Newman et al., 2017; 2018). People most often stated the reason for intentional avoidance was to avoid bad moods (Newman 2018; 2019). It is noted that the emotional response measure in the Reuters' studies is quite broad (i.e., avoiding news because "it has a negative impact on my mood") (Newman et al., 2019; p. 25); and therefore, the research cannot distinguish between negative emotions such as anxiety, sadness or anger. Still, the culmination of this research affirms that avoidance is driven by emotion. Other research more specifically finds negative emotions that result from news include feeling "depressed" or "upset" (Schröder, 2016). Further, Aharoni et al. (2021) interviewed Israeli youth and found young adults often avoid news because they are angry and frustrated with its predominant political content and commercial agenda. Related to this is avoidance based on

feelings that news is overly complicated to process or locate among the various sources available, which relates to self-efficacy (Hagen, 1994; Park, 2019).

Political news is not the only type of content people ignore. Narayan et al. (2011) aggregated cross-national logs about everyday information seeking and avoidance behaviors over five months and found common themes among the 468 participants included avoidance of financial and medical information. Participants avoided bad news because it made them depressed or worried about their current situation (Narayan et al., 2011). The authors also identified two types of information avoidance. Passive referred to a long-term, preemptive strategy of ignoring information that would cause cognitive dissonance, whereas active avoidance was a short-term strategy to cope with stress about a particular topic (Narayan et al., 2011).

One might wonder how people still avoid news, especially since exposure is practically inevitable, but research shows audiences are often not seeking news and make deliberate attempts to avoid content. One of the most extreme ways is by "taking breaks" from news, news topics, and news outlets (Aharoni et al., 2021; Palmer & Toff, 2020). A "news finds me" viewpoint is a strategy in which people believe that learning about news will happen regardless of active following because essential matters appear in social media feeds or are discussed by friends (Gil de Zúñiga et al., 2017). However, research finds this type of strategy toward following news does not enhance political learning (Gil de Zúñiga et al., 2017).

Many people make active efforts to avoid news even when new information is important (Newman et al., 2019). Mass communications scholars have amassed information on how news assessments relate to choices to consume or avoid specific content. However, even though studies on news consumption clearly identify usefulness as a primary reason for consumption,

research by Bode et al. (2017) suggests that individuals often avoid important news without in-depth assessments. The research used eye-tracking to measure social media users' news consumption and found users skipped articles that included words like “Republican” or “Democrat” or prominent party members' names because these words offered cues to ignore undesirable content (Bode et al., 2017).

Still, research on intentional approach and avoidance, in general, suggests these behaviors are more complicated than content-driven assessments (Tooby & Cosmides, 2015). Price (2003) suggests evolutionary mechanisms make reduced information seeking an unconscious behavior, as prolonged anxiety leads to less motivation and impaired performance. This might indicate that even as humans are designed to accumulate new information (Sharot & Sunstein, 2020), they may reduce information seeking if the process increases or prolongs anxious states. The human brain draws upon previous exposures to a stimulus as it processes information and bases subsequent actions on what is best for its survival (Tooby & Cosmides, 2015). Thus, the choice of whether to attend to or avoid a particular type of information comes down to the tradeoffs between knowing and not knowing. To know is not always the most comfortable choice. It comes with psychological demands, such as the need for more complex processing and the potential for stress if a situation is not easily resolved. The reality is that the well-known idiom, "sometimes ignorance is bliss," which emerged from Thomas Gray's (1947) "Ode to Prospect of Eton College," has merit.

Alas, regardless of their doom,
The little victims play!
No sense have they of ills to come,
Nor care beyond today:

Yet see how all around 'em wait

The ministers of human fate. (p. 51)

Although predominant news topics like populism, terrorism, severe weather, and the refugee crisis might be judged as important, it is clear that other factors such as the emotional response to news are also at play in news consumption behaviors. The reality is that the need to know may not outweigh the mental efforts needed to consume and process new information. Other research highlights that users are attracted to irrelevant news topics such as "junk," that is, stories that arouse prurient curiosity or are sensationalistic, over stories involving the more complex topic of public affairs (Tenenboim & Cohen, 2015).

Operationalizations of News Avoidance

News use has long been measured through self-report or, in the case of television, measurement systems such as Nielsen. News avoidance, on the other hand, is operationalized in primarily two ways: First, researchers might ask respondents if they avoid news and how often (e.g., Palmer & Toff, 2020; Tunney et al., 2021). The second primary approach uses survey data to capture low consumption amounts (e.g., Strömbäck et al., 2013). Both approaches are valuable to understand how audiences shy away from news, but both have disadvantages as well.

First, one disadvantage of direct avoidance measures is that they are highly subjective. In reality, a person who subjectively states they intentionally avoid news might also consume much more than someone's objective assessment of weekly news habits. In fact, the more active you are as a news consumer, the more likely you are also efficient at sorting through the abundance of content and avoiding much of it. To offer further support, Tunney et al. (2021) found evidence that higher avoidance and higher approach of news topics that generate fear, such as terrorism, nuclear war, and mass shootings, are not mutually exclusive activities. In their analysis of six

topics known to generate fear, the authors found higher consumption was not related to higher avoidance in five of the six topics (Tunney et al., 2021).

Studies that include quantifiable news use habits also shed light on those who use little news. These studies often examine user repertoires across various media content types, such as those who frequently watch television or read the newspaper. News use and avoidance fall along a usage continuum from low to high, whereas low users equate to avoiders. For example, Ksiazek et al. (2010) designed a "total consumption index" of various media (television, cable, magazines, newspapers, and internet sources) and scored users as high and low; the research found multiple patterns emerged across the platforms. General categories of seekers and avoiders were distinguished along with specific demographic differences between the types of people who consumed more than a mean score and those who consumed less (Ksiazek et al., 2010). News seekers had higher educations and incomes and were more often registered to vote (Ksiazek et al., 2010). Edgerly's (2015) research using a repertoire approach found news avoiders used little news across all platforms, but especially online sources. Although this approach is helpful, as Tunney (2020) points out, research that constructs its dependent variable as frequency (or infrequency) across sources does not directly measure news avoidance as an intentional behavior or habit.

Another disadvantage of surveys that rely heavily on overall consumption versus non-consumption as a dependent variable is that they are subject to exaggerated results through self-report, especially in a digital news environment. As Chaffee and Schleuder's (1986) research indicates, and more recently (Mellman, 2020) describes, self-report, which requires users to reflect on the amount of news used across a specified amount of time, results in inflated and inaccurate measures compared to use amounts collected through audience data metrics.

Additionally, this method is subject to social desirability and response bias factors in that individuals might respond based on what is expected by society or the researcher. Chaffee and Schleuder's (1986) comparison of self-report and measured use found individuals drastically overreported use. For these, and reasons associated with the abundance of overlap created by digital access to news, Pew Research suggests researchers revise modern self-report measures (Barthel et al., 2020). The present study undertakes the task of designing an improved measurement tool to correct for overreporting that results from overlap, such as consumption of television content on social media. Chapter 4 will elaborate in full about this new contribution to news consumption research.

Regardless of the approach to measuring avoidance, researchers argue that news avoidance's threat to our democracy is the chief reason for studies in this area. If people avoid news, they cannot fully participate as informed citizens. This underscores a clash between scholars, who believe that consuming news is essential, and consumers who often express they do not feel obligated to follow the news.

News Use and the Role of Emotion

Before moving forward, it is important to briefly introduce the topic of emotional responses to new information because emotional response is inescapably intertwined with decisions to approach or avoid news. In fact, no decision making can occur without the involvement of emotion (Wagner & Morisi, 2019). Sharot and Sunstein's (2020) model of information seeking suggests the three determinants of whether a human will acquire new information include 1) its *instrumental value* or perceived usefulness, 2) the anticipated *affect*, and with all else being equal, humans will elect to avoid unpleasant information, and 3) *the need*

for cognition in terms of if it will help them understand the world around them or lead to more confusion.

In the context of news, physiological and psychological responses to encounters with news topics have shaped our intentional and unmindful behaviors that lead to approach and avoidance. For example, did previous exposure to a news topic about the economy create anxiety or confusion? Did a story about climate change lead to a sense of hopelessness that the story is too complex to understand, or lead to frustration if efforts were made to untangle the content? At the same time, consumption of new information may be useful to reduce fear or help someone master elements of their own environment (Sharot & Sunstein, 2020).

It is also clear that anxiety can influence decisions to approach or avoid news, which will be discussed in-depth in subsequent chapters. Anxiety is defined as an emotion characterized by feelings of worry or stress, which is usually brought about by an issue with an uncertain outcome and one in which a person may feel helpless to resolve (APA, n.d.). Anxiety can be chronic, which in a health context is referred to as general anxiety, or topic/situational, which is sometimes referred to as state anxiety (American Psychological Association, n.d.). Anxiety can result in avoidance of situations and content that brings attention to the worry (Mayo Clinic, n.d.).

It is also established that anxiety can be brought about by news consumption. Johnston and Davey (1997) suggest that catastrophizing and persistent worry associated with viewing negative news content can have detrimental mental health effects. Recent studies find those who report deliberate news avoidance believe news is stressful and full of "doom" and "gloom" (Benton, 2020; Palmer & Toff, 2020; p. 1642). A recent survey by the American Psychological Association found that nearly 70% of Americans said the 2020 election was a significant source

of stress and feelings of hopelessness (Stress in America, 2020). Political news consumption can also adversely affect relationships (Brooks, 2020). A Reuters Institute study of digital news consumers found people avoided news because it led to arguments they would rather avoid (Newman et al., 2018). Heid (2020) suggests following news too closely can flare stress-related hormones and lead to joint pain and other physical ailments such as trouble sleeping.

The coronavirus pandemic has emerged as a recent topic related to increased news avoidance. When asked about avoiding coverage of the coronavirus pandemic, a group of U.K. news users gave reasons like it caused too much stress and feelings of overload (Reuters, 2020). Song et al. (2020) found news information avoidance regarding the coronavirus pandemic related to anxiety, sadness, cognitive dissonance, and a lack of willingness to take part in protective measures. Additionally, research by Nekliudov et al. (2020) found people who followed Covid-19 more closely across various news platforms experienced more significant anxiety about the virus, its employment effects, and whether they could trust information from the government.

Beyond anxiety, the inability to process information is also associated with news consumption and decisions to avoid topics (Lee et al., 2019; Park, 2019). Feild et al. (2010) found frustration-related to information seeking resulted in giving up, especially in the case of negative past exposures. As suggested earlier in the qualitative study by Kormelink and Meijer (2018), people often feel there is too much news to make sense of, which is echoed in Park's (2019) research that considers social media and other digital sources. Park (2019) considered how an individual's news seeking and processing efficacy relates to their perceptions of overload, specific to social media, and found increased efficacy led to greater seeking.

The present research aims to build a model to explain news seeking and avoidance of a particular type of information—news that induces an anxiety response. Important information

and stressful information are often intertwined in the presentation of today's news. Yet, while surveillance predicts information seeking, the research presented thus far indicates people avoid information that causes negative emotions and/or is difficult to find. By identifying "anxiety" as a specific negative emotion that occurs at two levels (news topic-related anxiety and chronic anxiety), this research will delve into a new territory of media effects research that explores the role of anxiety in-depth. Additionally, the research considers how one's efficacy in finding additional news on an anxiety-inducing topic relates to subsequent seeking and avoidance.

Before advancing to the hypothetical argument, another framework is important to explore. Chapter Two introduces three works that describe how evolutionary psychology can explain news habits, including approach and avoidance. These works include a pivotal, theoretical article by Pamela Shoemaker (1996) and two previous studies (Tunney et al., 2021; Thorson et al., in review) that describe how evolutionary mechanisms predict both seeking and avoiding news. It is noted that while the previous studies were not original to this work, the detailed comparison provided beyond the literature review, strengthens the overall argument presented here. Chapter 3 will further apply evolutionary psychology through an in-depth review of literature on evolutionary responses, anxiety, and news-search efficacy to create a new model that predicts information seeking and avoidance of stressful topics in the news.

CHAPTER 2

RESEARCH FOUNDATIONS

Thus far, the research has introduced the concepts of motivations for news use and emotional responses to news. Psychological scholars would argue that the anxiety response alters traditional approach motivations, including topic importance, because the benefit of not knowing sometimes outweighs that of knowing. This is why it is important to examine what drives news seeking and avoiding with a wider lens. This research considers three important works grounded in evolutionary psychology.

Applying Evolutionary Psychology to News Use

Various research areas, including biology, sociology, linguistics, anthropology (Tooby & Cosmides, 2015), and communications (Shoemaker & Cohen, 2012), support the premise that the instinctual goals of survival and reproduction explain behavior including approach and avoidance of threatening stimuli within our environments. An advantage of this approach is that it helps explain cognitive, affective, and behavioral processes (Elliot, 2008). In this sense, evolutionary theory is a grand theory to illuminate human responses to news content. However, an overarching theory is not enough to successfully develop interventional models that might encourage people to consume more news, nor is it sufficient to help news producers craft a product that attracts and retains audiences. The present work aims to fulfill this gap through an approach that takes one of the most common psychological dysfunctions in society – anxiety – and combines it with important seeking and avoiding variables consistently found in the literature on news consumption – topic importance and, more recently, self-efficacy toward gathering information, which is referred to in this work as news-search efficacy. The research will show how these variables can more thoroughly and usefully explain news habits.

This research is fundamentally inspired by the work of Pamela Shoemaker (1996), who introduced evolutionary psychology to journalism studies. *Hardwired for news: Using biological and cultural evolution to explain the surveillance function* is a classic piece of theoretical literature that describes the relationship between surveillance and the need to know and explains how our cognitive processes evolved as a way of assuring our species through solving problems related to our survival as individuals and as part of a group (Shoemaker, 1996). Shoemaker uses the example of a lion, a common metaphor in evolutionary research, to argue that without surveillance and learning more about the environment, humans could not survive; therefore, they are evolutionarily programmed to follow negative topics in the news. The primary argument is that if a threat is deemed so important that it becomes essential to survival, the likelihood of taking steps to mitigate the threat is increased (Shoemaker, 1996). In a later work, Shoemaker and Cohen (2012) apply evolutionary needs to fear- and anger-inducing news and argue that surveillance is activated by unconscious processes directed at survival. This work also argues that emotion, proximity, deviance, and graphic imagery heighten surveillance needs (Shoemaker & Cohen, 2012).

Since this pivotal research, scholars have identified shortcomings to the idea that negative news, especially in terms of message importance, concisely predicts seeking and avoiding content. For example, the previous section described how individuals sometimes avoid important topics like the coronavirus pandemic and political news. More specifically, Shoemaker's (1996) research fails to explain why even when information is deemed important, individuals sometimes ignore it (Narayan et al., 2001). Therefore, we must also understand the variables that work with assessments of importance and decisions to either consume or avoid negative news topics.

Tunney et al. (2021) and Thorson et al. (in review) sought to better explain the phenomenon of shunning important news through looking at both topic- and story-specific, intentional avoidance of fear-inducing news through previous works. Evolutionary psychology was applied in both cases to explain how all human behavior, at its core, is driven by species survival needs, including the approach and avoidance of news. The former study, Tunney et al. (2021), assessed the variables of overload, story importance, fear, and beliefs about the ability to respond to a threatening, general topic (e.g., terrorist attacks, nuclear war, online data breaches, severe weather events, mass shootings, and the Ebola virus). The news-seeking and avoidance model found story importance consistently predicted following, while overload and fear consistently predicted avoiding across all topics (Tunney et al., 2021). Additionally, response efficacy was predictive of avoidance in four of the six topics (Tunney et al., 2021). The authors described response efficacy as one's beliefs about their ability to successfully protect themselves from the threat.

One potential weakness of this study is that the fear measures replicated those in the extended parallel processing model of fear appeals. Witte's (1994) fear appeal model, as adapted by So et al. (2016; 2019), posits fear-inducing messages drive two needs. The first is to learn more about the topic for protection, while another response is to avoid "too much" of the fear experience, especially if an individual's level of efficacy is low (So et al., 2016). This research most often incorporates health threat messages into experiments that describe dangers to one's health using measures like threat immediacy, magnitude, and severity, to assess fear, and perceived susceptibility and threat-mitigation ability to measure efficacy (Witte, 1994).

It is clear that these measures of fear and fear response do not equate to the prolonged response of anxiety, especially in news stories where little can be done to protect oneself from a

danger that might reduce or resolve the ongoing feelings of worry (e.g., terrorism, nuclear war, mass shootings). This argument is further supported by neurological and physiological responses that differ following exposure to fear versus the anxious response (Nesse, 1994). The forthcoming study considers these a poor measure of the type of response to news messages that present ongoing threats and those that are not intentionally written to induce fear (as seen in fear appeal messages), which may explain the news seeking and avoiding inconsistencies of the efficacy response in Tunney et al. (2021) (note that the extended parallel process model also has trouble consistently predicting information seeking and avoidance since high-threat, high-efficacy and low-threat, high efficacy can both predict some level of danger control (The Extended Parallel Processing Model, 2014). In sum, use of fear measures may not be ideal to predict seeking and avoiding as an emotional response to stories that produce anxiety, which is the focus in this research.

To further elaborate, fear and anxiety both have negative valence, but scientists have found these concepts differ widely beyond valence. Neurocognitive research finds distinct brain responses to fear and anxiety (Sylvers et al., 2011). Additionally, anxiety dissipates slowly as compared to fear (Sylvers et al., 2011). It also creates hypervigilance in the face of uncertainty that can be explained by how a person copes with information (Öhman, 1993). So, while this variable may have successfully predicted avoidance, it could not explain why some people follow news even though they find it disturbing, as is suggested by Shoemaker (1999). From this study, the authors suggest modifying the emotional response scale to better reflect anxiety measures. As will be described below, it is believed that anxiety will play a role in whether or not people decide to avoid or consume news. Of note is that fear measures used in health communication often overlap with anxiety measures; however, when studied directly, research

finds anxiety leads to information avoidance, whereas fear will more often lead to approach (Petersen, 2010; Sylvers et al., 2011).

All told, Tunney et al. (2021) contributed to understanding why people both follow and avoid distressing news topics. The final regression equations for Tunney et al. (2021) can be found in Appendix A (following) and Appendix B (avoiding). The following model was nearly twice as predictive as that of avoiding, with *Adjusted R*² values between .34 and .50, meaning that the model was able to successfully explain between a third and half of the variance (Appendix A). Topic importance explained much of this relationship, but the research also identified that older adults and those who preferred broadcast television, were also more likely to follow the presented topics. The model for avoiding was less predictive. *Adjusted R*² values ranged between .15 and .20, with overload, higher topic fear, and higher topic efficacy explaining most of the avoidance (Appendix B).

Building upon Tunney et al. (2021), the second study (Thorson et al., in review) took a different approach. The authors measured a unique variable related to a person's predispositions to approach or avoid news. In the more generalized literature on approach and avoidance, optimism is found to be consistent with approach-coping tendencies (Nes & Segerstrom, 2006). Optimism is defined as a general tendency to maintain a positive view of the future (Beck et al., 1974). Optimism is considered a characteristic of a positive and productive coping style and a major driver of behavior because those with optimistic tendencies are more likely to expend more effort in resolving problems and attaining their goals rather than escape problems through distraction, avoidance, or giving up (Carver, 1998; Nes & Segerstrom, 2006). Additionally, optimistic versus pessimistic people will adapt their behaviors to address problems to manage or eliminate negative emotions (Nes & Segerstrom, 2006).

On the other hand, pessimists hold negative expectations and beliefs about their past, present, and future events (Leahy, 2002; Lester & Trexler, 1974). Pessimism is related to hopelessness, depression, self-criticism, and lack of motivation (Lester & Trexler, 1974). Leahy (2002) argues that it is not entirely a maladaptive predisposition concerning coping as it can be adaptive and protect a person from dangers and plausible threats. Leahy (2002) suggests this human psychopathology evolved from ancestral environments to solve problems that threatened survival and reproduction in each of our varying environments.

Optimism and pessimism scales such as the life orientation test-revised (LOT-R) (Scheier et al., 1994) are found very important in measuring distinct coping styles that make a person more apt to approach new information or avoid it. The LOT-R is a simple measure of ten basic beliefs about life (e.g., *In uncertain times, I usually expect the best; I hardly ever expect things to go my way*), all of which are measured on a Likert-like scale and create a continuous distribution of scores from very pessimistic to very optimistic. The life orientation test is an early version of the LOT-R, which measures optimism and pessimism using eight items as a one-factor measure. It has since been deemed to have measurement problems due to the extraction of one versus two factors, which results in variable predictability (Marshall & Lang, 1990; Scheier et al., 1994). Regardless, a meta-analysis of both models by Nes and Segerstrom (2006) found optimism consistently predicted both problem-focused and approach coping, while it held a negative relationship with avoidance. Other studies have likewise found consistent results predicting both approach and avoidance motivations using the LOT-R scale (e.g., Reed, 2016; Segerstrom et al., 2017).

Thorson et al. (in review) found high levels of optimism and pessimism predicted both approach and avoidance (Appendixes C and D). This finding indicates that those with moderate

levels of each emotion are the least likely to intentionally follow or intentionally avoid news – which might indicate a news-finds-me approach (Gil de Zúñiga et al., 2017). Fear, importance, and beliefs about news's usefulness also predicted story following (Thorson et al., in review). Additionally, response efficacy toward the story topic (e.g., beliefs about the ability to effectively respond to the presented threat) predicted following and had a negative relationship with avoiding. Of note is that the research measured fear in the same way as the previous study but added additional variables of "scared," "frightened," "afraid," "worried," "anxious," and "fearful," and found through factor analysis that "fearful," "frightened," and "afraid" were not dimensions of the other anxiety measures. This combined measure of fear and anxiety did, however, predict story avoidance and following when measured as intent to consume or avoid subsequent stories on the topic.

Still, the present research stresses that the psychological and neurological literature supports that the anxiety response differs from the fear response, both behaviorally and physiologically (Sylvers et al., 2011), so while research that presents a direct threat can appropriately use measures of fear, such as the extended parallel process model, news media effects research should more precisely consider whether the presented topic is aimed to cause immediate fear or prolonged anxiety, and consequently, use measures aimed to capture the correct emotion.

Other opportunities to expand upon Thorson et al. (in review) include the one-item measure of following and avoiding that directly asked about intent (e.g., "avoid news stories on this topic in the future" and "read another news story on this topic if I see one"). Although there are sometimes issues with validity and reliability in single-item scales, Hinkin (1995) and Rossiter (2002) suggest they are appropriate when words are universally understood. They

suggest adding synonyms to keywords sometimes decreases content validity (e.g., Hinkin, 1995; Rossiter, 2002). Therefore, this research will describe a more precise measure of news seeking and avoiding in the forthcoming sections.

Further, this research again measured response efficacy versus news-search efficacy, which is of interest in the present research. It is expected that these two distinctly different measures of efficacy have different relationships with news seeking and intentional avoidance. News-search efficacy, as will be described in detail in Chapter 3, is thought to relate to being able to find news. Without this ability, evolutionary theory would predict a person would become helpless, frustrated, and likely give up (Gilbert, 2001). It is believed anxiety, both as an immediate response and as a long-term condition, will operate alongside news-search efficacy to predict news following and avoiding in a way that is consistent with evolutionary psychology, which again argues that all behavior is fundamentally determined by the need for species survival. Further, Thorson et al. (in review)'s finding that predispositions were highly predictive of approach and intentional avoidance suggests a worthwhile avenue for research is how underlying traits shape consumption behaviors. A focus on chronic anxiety as an underlying trait is a much-needed avenue.

Constructing a Model from Previous Research

While these three works, and the additional research cited above, have helped explain that individuals make decisions to avoid news based on importance and emotional determinants such as adverse mood effects, lack of efficacy, and being inundated with news about the topic, this research seeks to delve further. More specifically, it investigates how the brain's workings, both as an immediate response to the stress of a topic and as prolonged anxiety, predict news seeking and avoiding. The following section fully explores the literature on chronic anxiety,

topic-related anxiety, story importance, and news-search efficacy to build a model to explain why people avoid stressful news topics. These results can help scholars hypothesize new relationships between anxiety and news avoidance. In doing so, it applies evolutionary psychology more precisely to these variables.

This research addresses a vast gap in mass communications research. It seeks to explain news seeking and avoiding that goes much deeper than the negative psychological response to a stimulus. Instead, it cultivates a new model that incorporates predispositions, new exposures to stressful content, and assessments about the news story. This three-pronged approach is a critical step in the emerging field of emotionally driven, intentional news avoidance because it considers that individuals do not simply respond to news, rather evolutionary functions, both inherited and learned, work together to determine whether a person approaches or avoids content. Applications within the news industry can also involve crafting more consumer-friendly content that increases news-search efficacy, lowers anxiety, and results in greater consumption.

On the negative side, it is noted that for psychologists advocating news avoidance, it may further solidify the argument that news can bring about negative mental health effects. However, it also provides more context to the relationship between chronic anxiety and the anxiety response to specific news. This is much needed. The argument that people should become ostriches to the world around them is premature without understanding how these variables work in the context of news use. This scientific approach is more responsible considering that news consumption is prosocial behavior that offers a critical connection to our communities and our society and helps us protect ourselves from real dangers in our world.

CHAPTER 3

LITERATURE REVIEW

An Evolutionary Understanding of Approach and Avoidance

Evolutionary psychologists suggest evolution is the only process that thoroughly explains the causes of human response, and therefore, all psychological theories include evolutionary components (Kane & Ashbaugh, 2017). Tooby and Cosmides (2005), who introduced evolutionary psychology, describe it as such:

"Evolutionary psychology is the long-forestalled scientific attempt to assemble out of the disjointed, fragmentary, and mutually contradictory human disciplines a single, logically integrated research framework for the psychological, social, and behavioral sciences —a framework that not only incorporates the evolutionary sciences and information theory on a full and equal basis, but that systematically works out all the revisions in existing belief and research practice that such a synthesis requires" (p. 3).

Evolutionary psychology operates under six primary assumptions; these include that 1) all behavior can be explained from the most basic and ultimate level of species survival and reproduction, 2) problems encountered in an organism's life result in physical and behavioral modifications that help assure the species' survival, 3) modules related to learning and instinctual responses are consistent across a species with differences only seen with sex characteristics and hormones, 4) we can only explain human nature through how the brain's modules produce responses through both instinctual factors and previous environmental exposures that result in learned behavior, 5) a species' modal processes operate outside of its consciousness, and 6) maladaptive responses can be explained by the length of time that adaptation requires in more complex organisms with longer lifespans (Crawford & Krebs, 2012). A common misconception of evolutionary psychology is that our genes alone determine behavior. The above assumptions make it clear that behaviors are shaped through interconnected modules in the brain that function to shape behavior through genetics and lived experiences (Dunbar et al., 2005). Thorson et al. (in

review) explains it as such: “When a new stimulus appears, the modules automatically code an emotion associated with learned ideas about ways to cope in that situation and a set of possible behavioral responses (p. 4).”

Researchers clearly cannot directly measure the adaptive responses over hundreds of thousands of years to apply evolutionary psychology. Instead, scholars use heuristics to guide their explanations for behavioral attributes and apply prehistoric scenarios to explain behavior (Crawford & Krebs, 2012). When used together, both approaches can be used to design surveys and experiments and describe behaviors in ethnographic and field observation studies, for example. In terms of explanations for activated responses such as fear, evolutionary psychologists say signaling information such as the importance of the threat and the costs and benefits explain subsequent behaviors (Crawford & Krebs, 2012).

A model of why people seek or avoid news that causes anxiety must also begin with understanding how approach and avoidance motivations relate to general behavior. Lewin (1935) introduced approach and avoidance research by noting that humans concentrate actions toward positive stimuli and away from negative stimuli. Chen and Bargh (1999) demonstrated this automatic tendency through research that asked participants to quickly pull or push a lever after being exposed to a stimulus that was perceived to be either positive or negative. The researchers asked participants to react immediately, limiting any direct response associated with the stimuli. The experiment found that response times of pushing away (avoid) were much quicker than the incongruent reaction to pull the lever (approach) after exposure to a negatively valenced stimulus (Chen & Bargh, 1999). Anyone who has ever had a close encounter with a flying object, such as a stray ball during a baseball game, knows that flinching is also an instantaneous response to a threatening stimulus. The immediate response acts to insure survival. This survival instinct is not

only found in humans. Elliot and Covington (2001) provide the example of an amoeba, a single-celled organism, which will instinctually pull arm-like appendages away from light to increase the likelihood of survival. Those who have hunted for earthworms at night also know that these relatively simple organisms will retract into the ground as a survival mechanism if hit by the ray of a flashlight.

A related advantage of an evolutionary approach is that it helps explain cognitive, affective, behavioral processes that lead humans to make decisions to approach or avoid information about their daily lives. In other words, the approach explains our motivations. Motivation relates to the learned responses that predict whether a person engages in a physical or cognitive act. Psychologist Abraham Maslow (1963) was one of the first to apply the idea of instinct to explain how information seeking and avoidance are determined both through automatic and learned responses. Maslow draws upon studies involving non-human primates to describe an information-seeking process in which controlling one's fears can mean seeking knowledge to understand and mitigate dangers or avoid information to reduce fear and anxiety (Maslow, 1963). Fear is considered "functionally flexible" (Crawford & Krebs, 2012; p. 405) and could explain variations in motivations for seeking or avoiding news. Stimuli produce different results depending on the threat's signaling information, including assessing if it is important to the individual. Stimuli information is always critical because it is required to trigger approach or avoidance. Returning to apply the example of a stray ball at a game, evolutionary psychology would suggest that modules in the brain capture the danger associated with the event and result in more awareness while sitting on the sidelines, which should be even stronger if injury results.

Elliot and Covington (2001) suggest a primary basis for obtaining new information is to gain more cues leading to positive outcomes like food, shelter, and mating. Avoidance is motivated towards circumventing a threat to survival. As previously stated, approach and avoidance motivations are triggered both by conscious and subconscious processing of stimuli that humans use to maximize the likelihood of obtaining these survival goals (Elliot & Covington, 2001). In this way, "approach and avoidance motivation are integral to successful adaptation: avoidance can facilitate survival, while approach motivation facilitates thriving" (Elliot, 2008; p. 5). Approach and avoidance motivation includes moving toward and away from stimuli in both the physical and psychological environment and continued behavior to maintain the desired homeostasis (Kenrick & Shiota, 2008).

While one might assume that all information, including news, benefits survival, it is essential to recognize that the body's psychological response to ongoing uncertainty can cause physical and mental harm (Gilbert, 2001). For example, research finds chronic anxiety reduces memory (Kizilbash et al., 2002), relates to higher levels of chronic pain (Jordan & Okifuji, 2011), and less sleep (Uhde et al., 2009). It also has adverse effects on relationships (Younkers et al., 2000), which can affect mating opportunities. Therefore, humans deliberately and instinctively approach or avoid information that causes anxiety based on tradeoffs – their wellbeing and homeostasis versus the importance of knowing (Gilbert, 2001). Also noteworthy is that approach and sustained approach takes more physical and cognitive effort than avoidance (Derryberry & Reed, 1998). This makes logical sense because approaching information would require the acquisition of new knowledge, which likely expends more mental effort than a response that simply ignores the situation or material. Concerning news, Palmer and Toff (2020) surveyed those who self-identified as news avoiders and found a consistent theme across

avoiders was that news is hard to understand and required too much time and emotional energy to consume.

If more effort is expended to consume information, then why do individuals consume it at all? Shoemaker (1996) suggests that if a threat in the news is deemed essential to survival, the general likelihood of threat mitigation through approach or monitoring will increase; therefore, if a person views news as a way to protect themselves from danger, they are more likely to follow it as compared to a person who believes the presented threat is unrealistic or unimportant.

However, if a continued state of anxiety reaches an unhealthy level, an evolutionary response shifts to efforts to avoid the stress of continued exposure (Aupperle & Martin, 2010), especially when high levels of chronic anxiety have disrupted an organism's functioning (Bateson et al., 2011). Meaning anxiety, especially if chronic, more often relates to avoidance because an organism's survival is threatened (Bateson et al., 2011; Öhman, 1993).

Evolutionary processes are already described in quantitative research found in mass communications. For example, Knobloch-Westerwick et al. (2005) suggest that appraisals are often automatic processes, and evolutionary researchers agree that these can operate outside of an individual's consciousness (Tooby & Cosmides, 2005). Selective exposure theories apply the concept of cognitive dissonance to explain why individuals more often attend to information congruent with their beliefs and avoid distressing content to protect themselves from uncomfortable information that might cause mental uneasiness; these theorists also argue behaviors can lie outside of our conscious motivations (Festinger, 1962).

A primary strength of applying evolutionary psychology to news seeking and avoiding is that it can explain why humans may avoid important information either initially or over time (Mobbs et al., 2015). This trend was recently seen with the coronavirus pandemic. There was

initially much attention to news about Covid-19, but several months into the pandemic, interest in Covid-19 news lessened significantly (Weitman & Essling, 2020). One evolutionary perspective would hypothesize that continued coverage of these important topics caused an unhealthy level of anxiety that caused the brain to reduce monitoring efforts (Mobbs et al., 2015). On the other hand, a lack of news-search efficacy (e.g., the feeling that subsequent information would be too difficult to find) might also predict avoidance because it causes a conflict between the need to know and the sustained cognitive effort to do so (Aupperle & Paulus, 2010). In each case, evolutionary psychology might explain this behavior in terms of the human tendency to reduce the cognitive effort when confronted with a pervasive environmental threat.

Emotional Response, Information Seeking, and Avoidance

Tooby and Cosmides (2015) argue that emotions are complex responses "programmed" inside the brain that help us behave functionally through learned and instinctual processes. Decision-making cannot occur without emotion (Wagner & Morisi (2019). From an evolutionary standpoint, these emotion-based decisions are also shaped through previous exposures that help an organism make assessments and develop response strategies (Tooby & Cosmides, 2015). Sharot and Sunstein (2020) propose three primary explanations for information seeking versus avoidance, which they argue are not completely conscious choices. These include instrumental ability (e.g., will the information help in decision making or protection from harm); hedonic utility (e.g., is the information likely to cause positive or negative emotions); and cognitive utility (e.g., will seeking information improve my ability to understand the issue) (Sharot & Sunstein, 2020).

Similarly, Elliot (2008) suggests, "Emotion and motivation result for information processing in brain systems that evolved to solve basic problems confronting the organism, like finding food and mates and eluding predators [sic] we can begin to study emotion and motivation by examining how the brain detects and relays input stimuli and generates output behaviors" (p. 30). Emotions function in the brain to help facilitate the most advantageous response to various types of threats (Elliot & Covington, 2001). For example, fear, which has a negative valence, most often drives information seeking, whereas anger can cause either a fight, flight, or freeze response, and prolonged anxiety is known to reduce information seeking (Harmon-Jones et al., 2010; Sylvers et al., 2011).

Fear appeals, as often seen in health communications research, are among the most well-known approaches to assess how a topics' importance combines with emotional response to shape decisions. Fear appeals are messages designed to arouse fear and motivate action, such as self-protection or conformance. When it comes to approaching fear inducing information, scholars posit that message utility and the immediacy of the threat, which relate to importance, work alongside perceptions about one's ability to successfully take protective actions, which relates to a person's efficacy (Ajzen, 1998; Atkin, 1973; Knobloch-Westerwick et al., 2005; Witte, 1994). While journalists may not knowingly frame stories to highlight risks, as is done in fear appeal research, Gardner (2008) argues that news values make journalists more apt to craft stories to intensify assessments of importance by ramping up fear and presenting the issues as threats to consumers (also see Schudson, 1997) Research on selective exposure explains that humans are motivated to reduce uncertainty (fear) through the need to know and other informational needs (Knobloch-Westerwick et al., 2005). News users identify these needs through surveillance, including scanning the headlines and cueing into particular stories rather

than avoiding news altogether. The consistency of frames of threatening news is why Pinker (2018) argues that news is so stressful that humans are better off ignoring it and obtaining their information through non-media sources such as statistical information.

In the context of news, Goodall and Reed (2013) used the popular fear-appeals framework, the extended parallel process model, to show how anxiety leads to avoidance. Goodall and Reed's (2013) research that presented participants with print news stories about bed bugs found fear and anxiety levels toward a topic resulted in avoidance if the perceived threat level was high and efficacy in dealing with the threat was low (Goodall & Reed, 2013). Threat and efficacy levels were included as frames in the stimuli stories.

The literature presented in the next several sections provides an overview of how assessments about news might interact with emotion to predict subsequent news seeking and avoiding. These sections will elaborate further on how these emotions, including a predisposition to anxiety and a state of anxiety in response to a news story, relate to two important variables that determine news use: topic importance and news-search efficacy.

Chronic Anxiety

While health communication and risk models most often measure the response to a threat, it is also critical to consider how a person's predispositions come into play. Anxiety is the second most common emotional disorder, following depression. General anxiety disorder (G.A.D.) describes feelings of persistent and excessive worry, which develop into a chronic problem (N.I.H., n.d.). In the present research, the term “general anxiety” is replaced with chronic anxiety for clarity. With chronic anxiety, generalized worries may exist over problems involving money, family, health, work, or the country’s state of affairs. People with chronic anxiety are often unable to control their worries and become nervous about new worries, even when there is little

that can be done to control them (N.I.H., n.d.). The disorder is almost twice as likely in women as in men (McLean et al., 2011).

There is much evidence that chronic anxiety is passed through our genes (Purves et al., 2020). U.K. researchers recently evaluated 200,000 medical records including genetic data of veterans and found a strong chromosomal link to anxiety ($r=.75$) (Levey et al., 2020). Since anxiety is not healthy for an individual, it is considered an evolutionary maladaptation. Scientists explain maladaptation in primarily two ways. First, our genetic development is based on genetic compromises (Gilbert, 1998). For example, anxiety and fear can protect against taking risks that might result in death, but also cause persistent psychological problems if it continues to operate in a heightened state. Another example would be how a larger body mass can protect from injury to bones but lead to obesity-related problems. There are tradeoffs to our genetic compositions (Gilbert, 1998). Secondly, our current evolutionary state has not yet caught up with that of our ancestral environments (Nesse, 2005). Evolution happens gradually over generations, especially in animals with a large genetic makeup and longer lifespan (Nesse, 2005). The genetic component of anxiety makes it clear that it is not entirely based on cognition or behavioral response. Thus, the evolutionary principle that anxiety-driven avoidance would relate to affect, cognition, and behavior is met (Fabion & Flatt, 2012).

Anxious individuals prefer habitual avoidance to continued exposure to what might be considered stressful information (Sege et al, 2018). In general, those high levels of chronic anxiety become flooded with information, which leads to information avoidance (Sege et al, 2018). In terms of news, Serrano-Puche (2018) concludes that news that is overly negative, is strongly associated with habitual avoidance. While communications scholars attempt to increase news consumption despite this challenge, psychologists like Pinker (2018) and Price (2003)

explicitly state people should avoid news to decrease the chronic anxiety that is fueled by the abundance of daily stresses found in the news.

Research measuring coping styles also clarifies why predispositions make a difference in determining if an individual will seek out new information or avoid it. Coping styles are individual strategies to mitigate the negative experience in order to maximize positive over negative emotion (Aldwin et al., 1996; Case et al., 2005). Coping abilities are defined as mental and behavioral strategies individuals consciously and unconsciously perform to deal with negative feelings and often relate to psychological avoidance disorders (Santarencchi et al., 2018). Within the literature on coping, approach and avoidance are primary areas of interest. By definition, approach versus avoidance identifies how individuals elect to eschew a stressor or act on its demands (Suls & Fletcher, 1985). Approach coping refers to behaviors that address the problem and include planning, seeking support, and confronting problems (Nes & Segerstrom, 2006). In contrast, avoidance-related coping mechanisms include disengagement and avoidance of the problem, and actions might include retreat and withdrawal in which one might ignore or avoid threatening situations or information (Nes & Segerstrom, 2006). Given the range of general approach and avoidance responses, it is likely that these behaviors encompass news seeking and avoiding.

Although coping styles are not the focus here, the coping research highlights how individual predispositions would cause different approach and avoidance responses when it comes to information that raises anxiety levels. This means a person's chronic anxiety is a critical variable to understand how one would respond to additional anxiety-inducing information and make decisions to seek information. A person with general anxiety will become hypersensitive to threats within the environment and avoid situations related to those threats (Sylvers et al., 2011).

Gilbert (2001) suggests that over time anxiety over an unresolved stressor leads to learned helplessness in which a person abandons the effort to protect themselves from harm. In this way, evolutionary psychology best explains why individuals might avoid news despite its importance. Avoiding news is a response to an unresolved threat, and the body's response to this state of cognitive discomfort is to avoid the threatening stimuli; thus, avoidance behavior becomes a strategy (Borkovec et al., 2004).

Given the relationship between chronic anxiety and avoidance the research first predicts:
H1: Higher levels of chronic anxiety predict greater news avoidance.

Further, it is not certain whether those with less chronic anxiety engage in more seeking; therefore, the following question is presented:

RQ1: Do lower amounts of chronic anxiety predict greater news seeking?

Story Anxiety

State anxiety is a situational response to a specific situation in which one feels threatened (A.P.A. Dictionary, n.d.). In this research, the situation of interest is the anxiety related to reading a news story. Story anxiety is similar to the fear response studied in previous works, but as discussed in Chapter 2, there are likely shortfalls to measuring it in the same way. For example, fear is considered an immediate response that might provoke a fight or flight instinct, whereas anxiety in response to a story is an immediate, but more prolonged response. This state of anxiety benefits humans because it prepares for response to threats in which they find themselves vulnerable (Bateson et al., 2011). According to Nesse (1994), there are several responses to anxiety: a) distancing oneself from the threat; b) posturing an aggressive defense when anger is present; c) immobility as a threat is assessed; and d) submitting to the danger. The psychological research supports that chronic (which they refer to as a long-term trait) and

immediate anxiety (which they refer to as a state) are correlated (Leal et al., 2017). Spielberger (1972) found that those with state anxiety find more situations dangerous and threatening and have a more intense anxiety response. Given this, the research next predicts:

H2: There is a positive relationship between chronic anxiety and story anxiety.

As argued previously, obtaining necessary information is important to daily functioning, but information approach is not always the most comfortable human response. Golman et al. (2017) provide examples of failing to log onto your banking website when you know the funds are depleted or shying away from reading critical reviews of a research paper once it has been rejected. These behaviors may come in the form of inattention, partial, or active avoidance of subsequent information (Golman et al., 2017).

There are many topics known to cause anxiety. In the context of news, political stories are among the most prominent topics covered. Nieman Lab reports on a recent paper by a group of Canadian researchers that people feel consuming political news is just a stressful reminder of bad news they cannot control (Benton, 2020). In a recent study of health information avoidance, Siebenhaar et al. (2020) found greater amounts of topic-related anxiety were the highest predictor of Covid-19 information avoidance. Of note, higher levels of anxiety were found among those who followed more significant amounts of coronavirus-related news (Siebenhaar et al. 2020). The coronavirus pandemic also saw visits to news websites steadily decrease in the U.S. from the peak of the first wave in April 2020 through July as people tuned out of news as the pandemic raged on (Weitman & Essling, 2020). Reuters (2020) found news avoidance in the U.K. increased from 15% in mid-April to 22% in May of the same year. Qualitative findings by Ahmed (2020) suggest that some people found the abundance of coverage on the coronavirus is "overkill" and turned to avoidance as a longer-term strategy.

Beyond political and health worries, financial anxiety is a well-known term in the psychology and economics literature. Archuleta et al. (2013) created a scale of financial anxiety through interviews with students who conveyed worries about student loans, credit cards, and auto loan debt. The research found dimensions of financial anxiety to include lack of sleep, problems concentrating, the inability to control worry about a financial situation, and tension (Archuleta et al., 2013). Burchell and Shapiro (2012) found avoidance measures related to financial anxiety include preference to not think about personal finances and the desire to have someone else monitor finances, which is a clear form of topic-specific information avoidance (Burchell & Shapiro, 2012).

Story anxiety in response to a negative stimulus is measured through adjectives, such as worried, anxious, concerned, and nervous (Marteau & Bekker, 1992; Spielberger et al., 1999; Yang and Kahlor, 2013). As previously discussed, anxiety is sometimes combined with fear-related adjectives such as afraid and frightened (e.g., Dillard et al., 1996; Wollebæk et al., 2019), making them less applicable to the study of anxiety-inducing news. This research offers an opportunity to apply the psychological and neuropsychological standpoint that fear and anxiety are not the same measures; and therefore, the terms should not be used interchangeably. This is expected to result in a more explanatory model of the effects of story anxiety on subsequent story seeking and avoidance.

This research treads cautiously toward a hypothesis on the standalone effects of story anxiety on subsequent information seeking and avoidance. In Thorson et al.'s (in review) forthcoming paper on intentional avoidance of short news stories, the research found the immediate fear response, as measured with combined items of anxiety, positively predicted approach, and negatively predicted avoidance. However, presenting one with topics as seen in

Tunney et al. (2021) related to fear-driven avoidance—clearly opposite effects. Given the model tested by Thorson et al. (in review) most closely resembles the story versus topic method employed in this research, the next hypotheses are stated as such:

H3: Higher levels of story anxiety predict less news avoidance.

H4: Higher levels of story anxiety predict greater news seeking.

Further, given the findings discussed above, it is likely that avoidance is greater among those with existing chronic anxiety. Thus, the research posits:

H5: Chronic anxiety moderates the relationship between story anxiety and avoidance in that story anxiety increases avoidance when chronic anxiety is present.

In this case, a relationship between anxiety and information seeking is not hypothesized as the research presented here would indicate that information seeking is not a response to chronic anxiety. However, the research did present it as a question:

RQ2: Does chronic anxiety moderate the relationship between story anxiety and seeking?

News-Search Efficacy

Feelings about an individual's ability to seek information to solve problems is often considered a type of self-efficacy. For example, suppose an individual encounters a news story about taking advantage of pending tax law changes related to retirement accounts. Beyond an emotional response like worry, other evaluations are likely to precede a decision to search for additional content. These might include, does the person have confidence they can find additional information through a search?

Judgments about self-efficacy are related to evaluations, mastery, and personal incentives (Bandura, 1986). Additionally, if a topic will lead to failure or embarrassment, an ineffectual person will turn toward avoidance (Bandura, 1986). Self-efficacy theory suggests that people

will approach information only when they believe they will successfully acquire and understand it (Bandura et al., 1999). In general studies of approach and avoidance, feelings about being helpless to resolve a stressful situation often explain the avoidant behavior. According to Bandura (1982), "When beset with difficulties, people who entertain serious doubts about their capabilities slacken their efforts or give up altogether, whereas those who have a strong sense of efficacy exert greater effort to master the challenges" (p. 123). The literature on coping also suggests that confidence in achieving mastery when faced with an unavoidable challenge can lead to a continued approach (Aldwin et al., 1996; Carver, 1998). This leads to another variable that is critical to the present research, which is perceptions about one's abilities to find new news content – described in this research as news-search efficacy.

Efficacy is an important variable to consider in news consumption research. Not only has the amount of available news increased, but today's news consumers must sift through an abundance of quality and non-quality information to find what they seek. This can result in feelings such as frustration and a loss of control (Fu et al., 2020). Wurman (2001) posits these feelings occur when stress results from problems accessing or understanding desired information. Wurman's (2001) work focused on information anxiety as related to an abundance of data that emerged in the digital era, but clearly today's digital environment includes a copiousness amount of news. Evidence of this type of frustration is again found in news habits during the coronavirus pandemic. Siebenhaar et al. (2020) found prior familiarity with navigating health information online before the pandemic reduced information avoidance. It is critical to note that although the previous examples refer to information "anxiety," which is necessary to explain the inefficaciousness that leads to information avoidance, the aim of the present research is not to directly measure efficacy as a psychological state of being worried or anxious. Rather, the

research considers a person's confidence that they can find subsequent news stories about the topic.

Turning specifically to news, Park's (2019) study of news avoidance on social media introduced a broader concept of "news efficacy," which was measured as beliefs about the ability to both obtain and understand the available information. The study found one's confidence in these two areas was highly predictive of searching versus avoiding news content on social media (Park, 2019). Park (2019) suggests that an individual's efficacy toward finding information in the cluttered social media environment predicts whether they will avoid or follow news. Given these findings, the research predicts:

H6: Lower levels of news-search efficacy predict greater news avoidance.

H7: Higher levels of news-search efficacy predict greater news seeking.

Importance

Before moving on to the hypothetical models, one additional variable is expected to influence anxiety-related news seeking and avoidance. There is strong reason to believe that assessments of importance work with emotions to predict news choice. In the context of news, previous experiences have shaped perceptions of what news is. For example, is the topic important or relevant? Did previous exposure to the topic create feelings of sadness, anger, helplessness, or being unable to comprehend the content? If so, an individual's learned behavior may become one of avoidance. Therefore, both perceptions of the content's importance and the emotional response to the topic are vital to developing a model that explains under what circumstances a person will avoid distressing news topics.

The everyday life information seeking sense-making approach suggests that individuals are motivated to seek information based on knowledge gaps and perceived usefulness (Dervin,

2015; Dervin et al., 1980; Savolainen, 1995). This information-seeking model considers that needs are time and situation-specific; and therefore, information is sought to fill gaps of knowledge that can be used for planning and decision making (Savolainen, 2005). This "gap bridging" explanation suggests that information seeking is mostly heuristically and contextually driven, rather than a general drive to obtain information that is not especially important to one's life. It makes sense that the information's relevance, and thus, the importance of the information, is critical to decisions about following and avoiding news.

The everyday life information framework emerged in the 1970s, and scholars have since pushed it forward to apply to today's digital communication practices (Bates, 1974; Savolainen, 2005). The theory echoes an evolutionary approach because it suggests that to meet the needs of emotional and actual survival required for "successful living" people must learn more about the important things happening in their environment – needs that can be fulfilled through following news (e.g., neighborhood crime, health information, politics). (Bates, 1974). The framework also has evolutionary support because to thrive in one's environment, a person must seek knowledge about important issues and objects and place them into a mental framework that assists in subsequent encounters. Fear appeals research would also align with this approach as it finds information seeking does not occur when the perceived threat is low (Popova, 2012; Witte, 1994). In these cases, information about the threat is not considered necessary or important enough to follow. From the perspective of the psychological appraisal theory, stimuli or information given to individuals should contain a certain amount of magnitude to become salient. As such, the stimuli or information could make individuals cognitively aroused, which, consecutively, makes them more attentive (Schimmack, 2005).

When applied to news, everyday life information models suggest that news users cannot possibly follow all content; therefore, they will consume the information they deem essential, such as monitoring threats or obtaining information to make critical decisions. As established in previous research, it is evident that importance is a crucial driver of news choice (see, for example, Mourão et al., 2021; Rubin & Perse, 1987), and for that matter, all forms of everyday life information seeking (Savolainen, 2017). As new technologies are incorporated into news disseminating and producing tools, news audiences have increasingly come to appreciate the value of relevance (Harcup & O'Neill, 2017). Studies have shown that news audiences seek information that impacts their daily lives (Huang, 2009; Lee, 2013).

A well-known theory in mass communication that would fall under the umbrella of everyday information seeking is the information utility model (Atkin, 1973), which can also explain human behavior at the evolutionary level. The model suggests that the motivation to reduce uncertainty through news selection is based on surveillance and is dependent on a need for understanding, efficacy, attitude affirmation, and informational needs (Atkin, 1973; Knobloch-Westerwick et al., 2005). Decisions are said to be motivated by information that users deem essential or important, such as monitoring threats or obtaining information, but these decisions are not always operating within our conscious responses (Bernard et al., 2005); additionally, assessments of what is important change overtime and require less attention and information seeking (Knobloch-Westerwick et al., 2005), as is common in the context of news.

When scholars design research to test the robustness of the information utility model, messages are designed to arouse fear and motivate action, such as self-protection or conformance. When it comes to approaching fearful information, scholars posit that the importance of the content is a critical antecedent and includes assessments of the usefulness of

the message, the immediacy of the threat presented, and one's confidence in the ability to take protective actions (Knobloch-Westerwick et al., 2005; Witte, 1994).

The culmination of findings on importance throughout the news seeking literature make it unnecessary to test the effects of importance as a hypothesis; however, story importance will be included in both the news seeking and avoiding models.

To summarize the hypothesized model, what this research develops is a theoretically driven model of news seeking and avoidance that can be explained through the fundamentals of evolutionary psychology. First, it suggests that chronic anxiety drives an individual to avoid news, and that those with chronic anxiety are more likely to also avoid news when their level of story anxiety is high. Further, it also hypothesizes that individuals who have more efficacy in their searching abilities are also more likely to seek information and less likely to avoid it. And finally, importance will continue to act as a predictive variable in both seeking and avoiding subsequent stories on a topic.

Hypotheses Restated

The hypotheses and research questions 1 are restated here:

H1: Higher levels of chronic anxiety predict greater news avoidance.

RQ1: Do lower amounts of chronic anxiety predict greater news seeking?

H2: There is a positive relationship between chronic anxiety and story anxiety.

H3: Higher levels of story anxiety predict less news avoidance.

H4: Higher levels of story anxiety predict greater news seeking.

H5: Chronic anxiety moderates the relationship between story anxiety and avoidance in that story anxiety increases avoidance when chronic anxiety is present.

RQ2: Does chronic anxiety moderate the relationship between story anxiety and seeking?

H6: Lower levels of news-search efficacy predict greater news avoidance.

H7: Higher levels of news-search efficacy predict greater news seeking.

The research will also control for the effects of demographic differences and news habits, and these measures are described in Chapter 4.

It is noted that news trust was also suggested as a control variable; however, given the study design, it was not included in the model. Trust can be a very important variable to consider in news consumption research, but only under specific conditions. Strömbäck et al. (2020) constructed an overview of research focused on the relationship between trust and media use. The authors noted that trust is not always driven by preference. Instead, they argue that news use is habitual, and people often consume news they do not trust out of a need for cognition, out of habit, or because of their personal and social needs (Strömbäck et al., 2020). The authors concluded that the relationship between trust and news use and avoidance is complex. While trust may drive some consumers away from mainstream sources, they may turn to non-traditional sources as an alternative (Fletcher & Park, 2017; Tsfaty, 2010). Even so, the authors note that this relationship remains modest (Strömbäck et al., 2020). Further, the authors suggest that cross-sectional studies cannot pinpoint whether lack of trust reduces consumption or lack of consumption relates to low trust (Strömbäck et al., 2020).

It is also important to emphasize that the present research is about a specific type of news – that which causes anxiety. The stories were pretested to assure a non-partisan leaning and did not contain any news source affiliation. In doing so, the research controlled for responses based on partisanship. With these cues removed, the response to seek or avoid a subsequent story is focused more on the psychological reaction to the anxiety and on-face assessments about a story. Therefore, whether or not a person trusts news likely becomes less relevant because their

behavior is more likely a reflection of the need for cognition (Savolainen, 2017), or in the case of avoidance, their desire to reach an equilibrium that reduces the stress (Gilbert, 2001). Recall that the everyday information seeking approach to explaining news approach and avoidance suggests that people make choices based on what is required for successful living (Savolainen, 2017). Given that the stories included in this research were considered of higher-than-average importance, it is likely that trust played a lesser role than the need for cognition.

Chapter 4 lays out the method used to test the news seeking and news avoiding models.

CHAPTER 4

METHOD

Procedure

The survey was hosted by Qualtrics, a U.S.-based survey provider that offers monetary incentives to participants for completing consumer surveys. The survey featured a 15-minute questionnaire (Appendix E), in which all respondents were asked to read a 150-word news story about topics known to generate fear (Appendix F). The topics of the stories included:

- Economy = Economic challenges related to the coronavirus pandemic
- Pandemic = Coronavirus mutations, efficacy concerns, and vaccination challenges
- Drought = Projections of a “mega drought” scenario in the U.S. that would cause catastrophic environmental and social effects, and potentially forced migration
- Homicides = Increased homicides and policing challenges related to the pandemic and racial protests
- Drug prices = Large price increases on hundreds of prescription medications

Story topics were taken from the Chapman (2019) Survey of Top Fears, which is an annual survey of topics that American’s most fear. The research conducted a pretest of 60 participants to assure the stories induced anxiety and were non-partisan. The pretested stories revealed anxiety levels between $M = 4.25$; $SD = 1.73$ (homicide) and $M = 4.62$; $SD = 1.54$ (economy), which was slightly above average on the seven-point scale. A story on the threat of species extinction was removed because participants perceived it was liberal leaning based on a seven-point slider scale from 1 = Liberal to 7 = Conservative. The remaining stories were centered on the midpoint (Between Drought: $M = 3.63$; $SD 1.06$; Economy: $M = 4.10$; $SD = .803$). The pretest also measured whether respondents felt that the information in the story was

accurate and credible on a seven-point slider scale. Responses were centered around the mean, with no significant differences identified.

The research also controlled for confounding variables through news story presentation. Previous research highlights that headline style and content relates to clicks regardless of whether a story is considered important to people personally (Kormelink & Meijer, 2018; Sacco & Muddiman, 2020). Kormelink and Meijer (2018) found users also preferred narrative headlines, which use more a conversational language and format than traditional headlines. They noted that participants ignored stories when they thought the headlines offered little information or highlighted a solution to an unfamiliar problem (Kormelink & Meijer, 2018). Somewhat contradictorily, Sacco and Muddiman (2020) found readers had higher expectations and greater engagement with summary headlines. Other research indicates that images influence news selection through assessments of worthiness (Geise et al., 2021). For these reasons, the research minimized the chance of confounding variables by excluding headlines, source affiliations, and images. Quotes were also excluded. Stories were modeled after online news articles, which included a dateline, timestamp, byline (News Staff), and inactive social media icons and sharing tools. The survey and stimuli stories were approved by University IRB (Appendix C).

Data Collection

The research employed Qualtrics to conduct an online, survey of U.S. adults. Qualtrics recruited participants from its stratified sample of individuals who receive incentives such as cash, gift cards, or travel for participating in surveys. Qualtrics gathers participant information and reviews I.P. addresses to assure a quality sample and that no participant repeats the survey. Qualtrics maintains information on the survey participants and ensures confidentiality to its research collaborators. Participants include individuals willing to take part in quality academic

and market research. Additionally, Qualtrics offers greater monetary incentives to capture an ideal demographic sample and also works with partners to meet participant quotas.

The survey ran for two weeks, from February 10 through February 23. The survey included both block and item randomization and three attention checks. (e.g., “*Are you reading the questions thoughtfully before responding?*”; “*Please respond ‘definitely yes’*”; “*Please answer never for this question*”). Failure to pass attention checks disqualified participants from the final sample. After signing the consent and answering a series of demographic questions, which were used by the panel provider to assure a diverse sample and subsequently used as controls in the research, participants were asked to read the stories. Timers embedded in the stimuli story prevented participants from advancing before 15-seconds elapsed, as was recommended by the panel provider to reduce click-throughs. After reading the stories, participants were asked about their intention to seek and avoid related stories on the topic, anxiety levels, news-search efficacy, and story importance. The survey then advanced to news habit and chronic anxiety measures. At the conclusion, participants were thanked for their participation. It took an average of 12 minutes to complete the survey. Those who failed the attention check were removed. Qualtrics also removed participants who provided click-through answers.

The survey generated 596 completed responses. The survey provider removed participants who completed the survey within $\frac{1}{2}$ of the median time for total responses. Additionally, responses that had incomplete data were removed, resulting in a final sample size of 516. An a-priori analysis conducted prior to the data collection determined that a sample size beyond 486 responses would produce a large effect as specified in Cohen (1992) criteria for

assessing the statistical power. The a-priori analysis was determined using a software calculator provided by Soper (2015) (Criteria: $f^2 = .35$ (large effect); desired power = .8; $p < .05$).

The survey was paid for using funds from the University's dissertation completion budget.

Design

Slight variations of established scales measured the independent variables of chronic anxiety, immediate anxiety, news-search efficacy, and the story's perceived importance. These are described in detail below.

Control Variables: Demographics and News Habits

The survey controlled for the traditional demographic variables of age, gender, race, income, and education. Demographic variables may produce differences among older versus younger adults and between men and women. For example, Toff and Palmer (2019) found men consume higher amounts of hard news as compared to female counterparts. Additionally, differences may emerge for educational and income levels. Toff and Palmer (2019) found that those with higher educations also consumed more hard news. Finally, as the survey included a story about crime, it was expected that age may predict following as older people are consistently found more fearful of crime and more likely to follow news about crime (Hale, 1996).

Another control employed in this research is news habits, often referred to as news media repertoires. As previously mentioned, there are several ways that news habits are measured in existing research, and each comes with advantages and disadvantages. Pew Research Center, a bi-partisan and fact-driven research tank that analyzes trends in the evolving media market, suggests researchers must be cautious when using older measures (Barthel, 2020). Previous measures captured more straightforward consumption habits since there were only a few distinct

ways to access news (Barthel, 2020). Today, news platforms produce content on various platforms. For example, ABC News users can watch, read, or stream their content from any electronic device. Social media, in particular, presents challenges because these services are content aggregators, both in the news section of the sites and in user feeds. Likewise, The New York Times offers audio stories, aired on radio, and video content through cable and streaming services. It is likely that those who report watching national morning news programs, or cable, as examples, may also follow these sources on social media leading to an inevitable overlap of consumption measures when approached as source-specific attempts to quantify news habits.

To further complicate capturing measures of overall news consumption, Pew Research data finds many consumers cannot identify the true source of their news (Barthel et al., 2020). When asked whether the aggregate-only sources produced original content, only 31% gave the correct answer of “no” for Google News, 26% for Apple News, and 51% for Facebook news.

Additionally, research finds consumers cannot adequately recall the sources they select while surfing social media. Messing and Westwood (2014) found people paid little attention to sources, relying on news recommended by others.

A final concern about current measures is exaggerated self-report (Barthel, 2020). Self-report measures inflate consumption because of the issues identified above (Barthel, 2020; Mellman, 2020). Social media users say they use two to three more times the news content as compared to findings using automated measures (Mellman, 2020). All told, some measures offer misleading findings if the intention is to report overall news use amounts. For example, Edgerly (2015) and others who use a repertoire approach likely capture overlap when including content presented on multiple platforms.

So, what can be done about inadequate measures of news habits? Pew Research suggests if researchers are trying to reduce the amount of confusion over source-type, then providing examples of content, as is done in Edgerly et al. (2018), is a way to create a comparison of user types that is relative to other responses. Although this method does not capture a true measure of amount, it does clarify source platforms, which is a problem noted by Barthel (2020). He suggests that consumers do not understand the differences between cable and television news (Barthel, 2020). Consumers may also be unclear about the difference between online-only news and social media since both are online. Additionally, as Messing and Westwood (2014) suggest, users may be guessing about self-reported news sources.

This research aims to improve upon existing measures in an attempt to meet the presented challenges. This means improving on the traditional repertoire approach to eliminate measures that would result in overreport. Additionally, Barthel et al. (2020) found participants expressed more confidence in correctly answering measures that provided examples of news content and established quantifiable frequency amounts. Based on these recommendations, the research will employ revised news habit measures to increase validity (Table 1). Note that the new measures clarify that respondents are to indicate media type from any platform or device and asked to quantify use by days.

These modifications also aim to improve upon another concern: the lengthy scale used to measure user repertoires likely leads to survey exhaustion and click-through responses. Revilla and Ochoa (2017) suggest surveys take no more than 20 minutes if results are to be trusted. Longer mobile surveys also present a challenge because of increased distractions (Antoun, Cooper, & Conrad, 2017). Lin & Wronski (2018) also found increased numbers of questions and survey pages related to increased survey dropout.

Table 1: *News habit measures*

| |
|---|
| <i>Thinking back, how often in the <u>last week</u> have you paid attention to the following news using <u>any platform</u> (e.g., social media, television, cable, newspapers, streaming, news apps.) 1 =never; 2 = 1 to 2 days; 3 = 3 to 4 days; 4 = 5 to 6 days; 5 = every day</i> |
| <i>On-air or digital television network news (e.g., CBS, ABC, or NBC)</i> |
| <i>On-air or digital local television news content</i> |
| <i>Your local newspaper, printed or digital</i> |
| <i>Printed or digital news from national newspapers like the New York Times, USA Today or Washington post</i> |
| <i>Cable or digital news from CNN like Jake Tapper, Anderson Cooper, or Don Lemon</i> |
| <i>Cable or digital news from FOX News like Sean Hannity, Tucker Carlson, or Fox & Friends</i> |
| <i>Cable or digital news from MSNBC like Rachel Maddow, Lawrence O'Donnell, or Joy Reid</i> |
| <i>On-air or digital news from NPR like Morning Edition or All Things Considered</i> |
| <i>Digital conservative news content like The Federalist, Drudge Report, National Review</i> |
| <i>Digital liberal news content like Daily Kos, The Nation, Mother Jones or Vox</i> |
| <i>Digital content from international news sources (e.g., The Independent, BBC, or The Guardian)</i> |
| <i>Conservative news content via talk radio, podcasts, or streaming (e.g., Mark Levin, Rush Limbaugh, or Infowars)</i> |
| <i>Online-news/entertainment news sources like Buzz Feed, TMZ, People, or Huffington Post</i> |

Exploratory and confirmatory factor analysis for these measures are described later in this chapter.

Independent Variables

Chronic Anxiety

Measures for chronic anxiety and the independent variables are shown in Table 2. Spitzer et al. (2006) reduced several anxiety measures into a seven-item scale. The widely cited General Anxiety Disorder-7 scale (GAD-7) is simple and offers high reliability (*Cronbach α = .92*) and Test-retest reliability (*correlation = 0.83*). Participants are asked: *Thinking back over the past two weeks, how many days have you been bothered by the following problems? The measures included: a) feeling nervous, anxious, or on edge, b) not being able to stop or control worrying, c) worrying too much about different things, d) trouble relaxing, e) being so restless that it is hard to sit still, f) becoming easily annoyed or irritable, and g) feeling afraid as if something*

awful might happen. (1 = not at all, 2 = several days, 3 = more than half of the days, 4 = nearly every day, 5 = every single day). The analysis confirmed all items loaded on the same factor with loadings between .86 (item 5) and .92 (item 2). The results are shown in Table 2.

Story Importance

Story importance consistently predicts approach and avoidance of threat and risk information (Knobloch-Westerwick et al., 2005;) and will also be used as a control variable based on the responses to the following questions: *Thinking of what you just read, how much do you agree or disagree with the following?* Three intuitive statements were derived from the literature: *This story is important to me; this story is relevant to my life; and I believe this story is valuable to me.* (strongly disagree = 1 to strongly agree = 7). To improve the quality of responses, reverse coded items were added. These include: *This story has no bearing on my life; this story is not important to me; this topic is not something that I care about.* Exploratory and confirmatory factor analysis was used to measure scale validity. Results are shown in Table 2.

Story Anxiety

Anxiety scales that measure a person's response to a stimulus contain words including anxious, worried, and concerned (Kim et al., 2020; Yang & Kahlor, 2013). Survey questions were structured to include the adjectives in statement form. As suggested by Goldberg (1999), statements more accurately capture measures relating to personality. The questions included: *Regarding you personally, how would the following statements describe your feelings after this story?* a) *I feel anxious about the topic of this story,* b) *I am worried that this problem can't be resolved,* c) *Thinking about this topic makes me concerned,* d) *I don't feel worried after reading this story* (reversed), e) *This story doesn't cause anxiety for me* (reversed), f) *I don't feel*

concerned about this topic (reversed). (strongly disagree = 1 to strongly agree = 7). (Overall Mean = 4.48).

News-Search Efficacy

In this paper, news-search efficacy measures are derived from the work of well-known scholars including, Bandura et al. (1999), Ajzen (1998) and (Ajzen & Fishbein, 2005), and Park (2019). As suggested by these scholars, a component of self-efficacy relates to confidence in one's ability to obtain available information about the topic or task (Ajzen, 1998; Bandura et al., 1999; Yang & Kohler, 2013; Park, 2019). This item is concerned with one's efficacy toward both finding news and should be related to whether someone will avoid information, as it is considered a type of information seeking anxiety that can lead a person to give up (Bandura, 1982, Wurman, 2001)

Measures for news-search efficacy were kept simple and are shown in Table 2. Spearman correlation coefficients ranged from $r = .40, p < .001$ (homicide) and $r = .51, p < .001$ (pandemic) across the five news stories.

Table 2: *Independent variables*

| | | |
|--|--|-------------------------------|
| Importance | Thinking of what you just read, how much do you agree with the following? 1. <i>This story is important to me.</i> 2. <i>This story is relevant to my life.</i> 3. <i>I believe this story is valuable to me.</i> 4. <i>This story has no bearing on my life.</i> 5. <i>This story is not important to me.</i> 6. <i>This topic is not something that I care about.</i> (strongly disagree = 1 to strongly agree = 7) | $\alpha = .84-.89$ |
| Immediate Anxiety | In regard to you personally , how would the following statements describe your feelings after this story? 1. <i>I feel anxious about the topic of this story</i> 2. <i>I am worried that this problem can't be resolved</i> 3. <i>Thinking about this topic makes me concerned</i> 4. <i>I don't feel worried after reading this story</i> 5. <i>This story doesn't cause anxiety for me</i> 6. <i>I don't feel concerned about this topic.</i> (strongly disagree = 1 to strongly agree = 7) | $\alpha = .81-.85$ |
| Chronic Anxiety (GAD-7) Scale Spitzer et. al, 2006) | Over the past 2 weeks, how often have you been bothered by the following problems in your daily life? 1. <i>Feeling nervous, anxious, or on edge</i> 2. <i>Not being able to stop or control worrying</i> 3. <i>Worrying too much about different things</i> 4. <i>Having trouble relaxing</i> 5. <i>Being so restless that it's hard to sit still</i> 6. <i>Becoming easily annoyed or irritable</i> 7. <i>Feeling afraid as if something awful might happen</i> (1 = not at all, 2 = some of the days, 3 = more than half of the days, 4 = nearly every day, 5 = every single day) | $R^2 = .70-.81$ $p < .001$ |
| News Story Efficacy | How well do these statements describe your thoughts after reading this news story? Seeking Efficacy 1. <i>I think I'd struggle to find information about this topic in the news. (reversed)</i> 2. <i>Searching for follow-up stories on this topic would be difficult for me. (reversed)</i> (strongly disagree = 1 to strongly agree = 7) | $R^2 = .40-.51$ $p < .001$ |

Dependent Variables

News Seeking and News Avoidance

Detailed scales measuring news seeking and avoidance are not established in published works; therefore, the research constructed items based on the RISP measures found in Yang and Kahler's (2013) paper on anxiety-driven information approach and avoidance. The original measures offered high reliability (Table 4) but were redundant; therefore, they were reduced to six items and modified to best capture news-related behaviors. For news seeking, the question asked: *After reading this story, how likely are you to do the following?* Correlations are shown in Table 3. No reverse coded items were used for validation as it was determined that the seeking and avoiding measures served as a counterbalance. The items loaded on separate dimensions. The research used exploratory and confirmatory factor analysis to verify the factors.

Chapter 5 will provide analysis of the new news use measures, test the hypotheses, and answer the research questions.

Table 3: *Original and revised measures of the dependent variables*

| Work Cited | Dimension | Original Item | α | Revised News Seeking/Avoiding Item | α |
|--|-----------------------|---|----------|---|----------|
| Yang, Z. J., & Kahlor, L. (2013). What, me worry? The role of affect in information seeking and avoidance. <i>Science Communication</i> , 35(2, 189-212. | Information seeking | <ol style="list-style-type: none"> 1. <i>I plan to seek information about climate change in the near future.</i> 2. <i>I will try to seek information about climate change in the near future.</i> 3. <i>I intend to find more information about climate change soon.</i> | .97 | <ol style="list-style-type: none"> 1. <i>After reading this story, how likely are you to do the following?</i> 2. <i>I plan to seek more information about stories like this one.</i> 3. <i>I intend to look into more news about this topic</i> 4. <i>I will make a point to follow news about this topic.</i> | .91-.94 |
| Yang, Z. J., & Kahlor, L. (2013). What, me worry? The role of affect in information seeking and avoidance. <i>Science Communication</i> , 35(2, 189-212. | Information Avoidance | <ol style="list-style-type: none"> 1. <i>I intend to look for information about climate change in the near future.</i> 2. <i>I will look for information related to climate change in the near future</i> 3. <i>I avoid information about climate change.</i> 4. <i>When it comes to climate change, I don't want to know more.</i> 5. <i>I refuse to listen to information about climate change</i> 6. <i>I tune out information about climate change.</i> | .91 | <ol style="list-style-type: none"> 1. <i>I will avoid news stories like this one in the future.</i> 2. <i>I intend to ignore future news about this.</i> 3. <i>I plan to tune out news about this topic if I see it again*</i> | .88-.91 |

*Measures: extremely unlikely = 1; moderately unlikely = 2; slightly unlikely = 3; neither likely nor unlikely = 4; slightly likely = 5; moderately likely = 6; extremely likely = 7

CHAPTER 5

RESULTS

Demographics

The ages of participants ranged from 18 to 87, with a mean age of 47 ($SD = 18.58$). Approximately 45% of respondents were male, while 55% identified as female. Three non-binary responses were removed from the sample to allow for statistical analysis. Annual household incomes before taxes were reported as: less than \$25,000 (18%), \$25,000 to \$49,999 (31%), \$50,000 to \$99,999 (32%), \$100,000 to \$149,000 (10%), and \$150,000+ (6%). The majority of the sample identified as White (65%), followed by Black/African American (13%), Hispanic or Latino (11%), Asian (7%), Indigenous American or Alaska Native (1%), Native Hawaiian or Pacific Islander (.6%), and other race (2%).

The participants presented a diverse level of educational backgrounds. Most respondents had some level of higher education beyond high school: Less than high school (2%), high school graduate (26%), some college (23%), 2-year degree (10%), 4-year-degree (20%), professional degree (15%). Nearly 5% possessed an advanced degree such as a doctorate or medical degree.

The survey asked two questions related to political beliefs. A categorical measure of party affiliation revealed 40% of the sample identified as Democrat, 31% identified as Republican, 25% identified as independent, and 4% identified as non-political, amounting to 23 people out of the 516 responses. For political views, 30% of the respondents identified as somewhat liberal to very liberal, 37% identified as moderate, and the remaining 33% identified as being somewhat to very conservative. Political beliefs were not used as a control variable, but rather to confirm an equal distribution of ideologies in the sample.

News Media Habits

As previously discussed, this research introduced new media habit measures as part of the analysis to attempt to reduce overreport.

Respondents were asked to indicate how often they consumed various news content in the last week regardless of how they accessed the content. The prompt asked: “*Thinking back, how often in the last week have you paid attention to the following news using any platform (For example, social media, television, cable, newspapers, streaming, news apps. etc.).*” Further, as suggested in Barthel (2020), participants were given examples of the particular content they might consume from each media source and asked to quantify it from 1 = never to 5. (Refer to Table 1 in the previous section). Table 4 presents the mean scores for each of the items.

Table 4: Means and standard deviations for news media-habit items

| | <u>Mean</u> | <u>SD</u> |
|---|-------------|-----------|
| On-air or digital television network news (e.g., CBS, ABC, or NBC) | 2.80 | 1.57 |
| On-air or digital local television news content | 2.97 | 1.58 |
| Your local newspaper, printed or digital | 2.36 | 1.47 |
| Printed or digital news from national newspapers like the New York Times, USA Today, or Washington post | 2.04 | 1.34 |
| Cable or digital news from CNN like Jake Tapper, Anderson Cooper, or Don Lemon | 2.05 | 1.37 |
| Cable or digital news from FOX News like Sean Hannity, Tucker Carlson, or Fox & Friends | 2.12 | 1.44 |
| Cable or digital news from MSNBC like Rachel Maddow, Lawrence O'Donnell, or Joy Reid | 1.96 | 1.36 |
| Cable or online news from Newsmax (For example, Greg Kelly, Howie Carr, etc.) | 1.67 | 1.13 |
| On-air or digital news from NPR like Morning Edition or All Things Considered | 1.74 | 1.20 |
| Digital conservative news content like The Federalist, Drudge Report, National Review | 1.61 | 1.11 |
| Digital liberal news content like Daily Kos, The Nation, Mother Jones, or Vox | 1.60 | 1.11 |
| Digital content from international news sources (e.g., The Independent, BBC, or The Guardian) | 1.89 | 1.22 |
| Conservative news content via talk radio, podcasts, or streaming (e.g., Mark Levin, Rush Limbaugh, or Infowars) | 1.71 | 1.16 |
| Online-news/entertainment news sources like Buzz Feed, TMZ, People, or Huffington Post | 2.04 | 1.27 |
| <i>N</i> = 516 | | |
| Thinking back, how often in the last week have you paid attention to the following news using any platform (e.g., social media, television, cable, newspapers, streaming, news apps.) | | |
| 1 = never; 2 = 1 to 2 days; 3 = 3 to 4 days; 4 = 5 to 6 days; 5 = every day | | |

Most participants preferred television and cable content over newer forms of news media, including online-only content or talk content delivered via radio or streaming. This finding is consistent with other recent research on news consumption (Balderston, 2020). National newspaper source content and entertainment-focused content such as Buzz Feed and TMZ were also popular among participants. The research also identified that 7% of consumers used no news the week prior, which decreased to 6% when online entertainment sources were removed from the analysis. The research also confirmed that large amounts of daily use were rare. Only .6% (3 participants) consumed news daily in the previous week across all sources measured. For the remaining analysis, the research removed entertainment news as it was not the focus of this research. Given that only 1% of participants used entertainment content exclusively, this was not expected to make a substantial difference in the overall analysis.

The research next conducted an exploratory factor analysis to investigate media habits across the various sources of news. A maximum likelihood model was selected using Promax rotation, which is an oblique rotation method often used in social sciences because correlations between factors are suspected. Promax rotation identifies latent patterns that can be used to create factors (Osborne, 2015; UCLA Institute, n.d.). Best practices for factor retention include assessments of cross loadings and communalities (Hayton et al., 2004). Although high communalities of .80 or greater are preferred, this is often unobtainable in social sciences where variables are most often correlated; therefore, levels greater than .40 should be considered. Tabachnick and Fidell (2001) also suggest researchers consider eliminating items that cross-load at levels of .32 or higher on two factors. This equates to approximately 10% shared covariance with other factors. These thresholds were applied to the current work to determine factor

retention. The analysis found patterns similar to previous research using latent profile (e.g., Tunney et al., 2021) and principal component factoring (Mourão et al., 2018).

Three news habit repertoires emerged: a diverse number of content sources, conservative sources, and television sources (Table 5). A chi-square goodness of fit confirmed the items were highly correlated: ($X^2 = 201.89; p < .001$).

The research next used confirmatory factor analysis to verify the news habit dimensions. A Standardized Root Mean Squared Error (SRMR) is the preferred fit indicator for ordinal variables because methods such as the Chi-Squared Test of Independence and Root Mean Squared Error of Approximation often reject the model when used for large sample sizes ($N > .500$) (Shi et al., 2020). The SRMR for the news habit analysis was .056. Values $< .05$ are considered good, while scores between .05 and .08 are considered an acceptable confirmatory measure of overall fit (Shi et al., 2020).

Table 5: *Pattern matrix of news source use*

| | News Habit Repertoire | | |
|----------------------------|-----------------------|---------------------|-------------------|
| | <u>Diverse</u> | <u>Conservative</u> | <u>Television</u> |
| CNN News | 0.768 | -0.187 | 0.154 |
| MSNBC News | 0.733 | -0.039 | 0.155 |
| International News | 0.637 | 0.148 | -0.114 |
| National Newspapers | 0.609 | -0.026 | 0.068 |
| Liberal Websites | 0.584 | 0.283 | -0.09 |
| NPR | 0.548 | 0.188 | -0.019 |
| Local Newspaper* | 0.291 | 0.098 | 0.245 |
| Fox News | -0.24 | 0.801 | 0.241 |
| Conservative Talk | 0.017 | 0.786 | -0.042 |
| Conservative Websites | 0.293 | 0.612 | -0.117 |
| Newsmax | 0.286 | 0.584 | -0.001 |
| Local Broadcast News | -0.034 | 0.132 | 0.808 |
| National Broadcast News | 0.167 | -0.062 | 0.717 |
| Initial Eigenvalue | 5.745 | 1.580 | 1.067 |
| Percent Variance Explained | 44% | 12% | 8% |
| Cumulative Percent | 44% | 56% | 64% |

Extraction Method: Maximum Likelihood

Rotation Method: Promax with Kaiser Normalization

*Removed from final news-use habit measures

Conservative news habits included those who mostly consumed news originating from Fox News, Newsmax, conservative radio or streaming sources, and conservative websites. This group was most highly correlated to the television news habit repertoire ($r = .671; p < .001$). Television news habits consisted of those who primarily consumed content that originated from national or local broadcast sources. This group was most closely correlated to those within the final group ($r = .381; p < .001$), which consumed content from a diverse array of sources, most of which are traditionally considered liberal-leaning or mainstream (e.g., national and international newspapers, NPR, MSNBC). Those in the diverse media repertoire were the least likely to consume conservative content ($r = .205; p < .001$). Table 5 also displays the Eigenvalues values for each repertoire. The first factor, diverse media use, captured 44% of the variance. Note that local newspapers were removed from the final model due to poor factor loadings. The revised media use measures show similar patterns as studies that measure use through content types and means of access (e.g., computer, iPhone, tablet) (e.g., Edgerly et al., 2018; Mourão et al., 2018). The consistency would indicate that participants using both scales could identify where their content originated from.

In terms of news consumption amounts, all three news-use repertoires had low mean scores, reflecting use between one to two days in the previous week (Diverse: $M = 1.88$; $SD = .96$; Conservative News: $M = 1.78$, $SD = 1.00$; Television News: $M = 2.88$, $SD = 1.43$) on the five-item scale.

The next step was to compare the new media use measures to those used in the two previous studies. The question prompt for the first two studies asked: *Please indicate how often in the last week you've consumed content from each source using any device*. A key difference between the first two studies, and those presented in the present research, is that Tunney et al.

(2021) and Thorson et al. (in review) included social media. (*Note: The analysis in this paragraph isolates the most frequent social media measures, Facebook, Twitter, and YouTube, and adds them to the other media measures for consistency*). For Tunney et al. (2021), participants were asked to answer the questions on a 5-point scale (*1 = never, 2 = rarely, 3 = occasionally, 4 = fairly often, and 5 = very often*). The results showed mean scores leaned toward “rarely” ($M = 2.22$; $SD = 1.34$; $N = 403$). For Thorson et al. (in review), respondents were asked to rate their media use on a five-point frequency scale (*1 = never, 2 = about 1 once a week, 3 = 2 to 3 times a week, 4 = 4 to 6 times a week, and 5 = daily*). In this study, respondents indicated they consumed news slightly more than once a week ($M = 2.29$; $SD = 1.29$; $N = 525$).

The frequency measures in Thorson et al. (in review) were most similar to those used in the present study, which used a 5-point, frequency scale; however, the measures varied slightly: *1 = never; 2 = 1 to 2 days; 3 = 3 to 4 days; 4 = 5 to 6 days; 5 = every day*. Again, the new measures attempted to capture the source of media content, regardless of where people obtained content. It indicated that, on average, people used news 1- 2 days a week. ($M = 2.04$; $SD = 1.30$; $N = 516$). To further compare these three studies, regardless of the measure, it is notable that the mean response was positioned slightly to the left of the midpoint on the 5-point scale that measured use from infrequent to frequent. It is evident that new measures captured remarkably similar amounts of use. (e.g., *rarely, once a week, 1 to 2 times a week*).

Contrary to these findings, Pew Research recently found 48% of people said they get news from television “often” in a typical week, and 52% say they often get news from a smartphone, computer, or tablet when measured using subjective measures without a time period specified (Pew Research, 2020). It is not clear why respondents in the Pew Studies would seem to indicate higher usage amounts.

The findings across the previous studies (1 & 2), and the present study (3), suggest that the need to use social media variables in repertoire studies to measure consumption amounts as part of a measure of overall use is unnecessary since consumption amounts remained similar regardless of whether social media items were included in the scale. Of course, they are still of interest in studies focused on social media use and consumption specifically. Given that shorter scales are preferred, this consideration is important for future research. Another finding worth mentioning is that when measures of media content are provided through all-inclusive ways of obtaining that content, overall use is very infrequent. As stated earlier, 7% of the participants in this sample reported never using news in the week leading up to the survey period.

Unfortunately, this research remains unable to predict whether the refined measures improved the accuracy of self-report; however, these findings do bring important considerations into light and echo the challenge presented by Barthel et al. (2020) to find better measurements of news use, albeit admittedly a challenging endeavor.

Analysis of Main Hypotheses and Research Questions

To test the hypotheses and research questions, the research first looked at the means for each of the independent variables (Table 6).

Table 6: *Means and standard deviations of story importance, story anxiety, and news-search efficacy*

| | Story Importance | | Story Anxiety | | News-Search Efficacy | |
|--------------|-------------------------|-----------|----------------------|-----------|-----------------------------|-----------|
| | <i>M</i> | <i>SD</i> | <i>M</i> | <i>SD</i> | <i>M</i> | <i>SD</i> |
| Economy | 4.09 | .710 | 4.49 | 1.32 | 5.18 | 1.18 |
| Pandemic | 5.13 | 1.37 | 4.45 | 1.20 | 5.31 | 1.24 |
| Mega Drought | 4.65 | 1.33 | 4.40 | 1.29 | 4.97 | 1.23 |
| Homicides | 4.78 | 1.22 | 4.55 | 1.23 | 5.15 | 1.21 |
| Drug Prices | 4.90 | 1.28 | 4.47 | 1.25 | 5.09 | 1.20 |

Means and standard deviations of combined measures for each dependent variable (Range of values 1-7)

Differences between mean scores in Tables 6 and 7 were measured using between subjects ANOVAs with a post hoc analysis using a Tukey HSD Post-hoc Test. Differences were seen for Story Importance ($f = (4, 2075) = 43.26, p < .001$) between the topics of Economy and Pandemic (Economy $M = 4.09, SD = .710$; Pandemic $M = 5.15, SD = 1.37, p < .001$), Economy and Mega Drought (Economy $M = 4.06, SD = .710$; Mega Drought $M = 4.65, SD = 1.33, p < .001$), Economy and Homicides (Economy $M = 4.09, SD = .710$; Homicides $M = 4.78, SD = 1.22, p < .001$), Economy and Drug Prices (Economy $M = 4.09, SD = .710$; Drug Prices $M = 4.90, SD = 1.28, p = .001$), and Pandemic and Mega Drought (Pandemic $M = 5.15, SD = 1.37$; Mega Drought $M = 4.65, SD = 1.33, p = .001$).

Only scores for Pandemic and Mega Drought (Pandemic $M = 5.31, SD = 1.24$; Mega Drought $M = 4.97, SD = 1.23, p = .001$) were statistically different for News-Search Efficacy ($f = 4, 2075) = 4.389, p = .002$). Mean scores for Story Anxiety showed no significant differences ($f = 4, 2075) = .792, p < .530$).

Means and standard deviations for intention to seek or avoid subsequent news are shown in Table 7. There were significant differences between the stories for seeking ($f = 4, 2075) = .596, p < .001$). Differences were seen between Economy and Pandemic Economy $M = 4.53, SD = 1.59$; Pandemic $M = 4.90, SD = 1.60, p = .007$), Pandemic and Mega Drought and Pandemic and Mega Drought (Pandemic $M = 4.90, SD = 1.60$; Mega Drought $M = 4.44, SD = 1.56, p < .001$), and Pandemic and Homicides (Pandemic $M = 4.90, SD = 1.60$; Homicides $M = 4.47, SD = 1.60, p < .001$).

No significant differences were seen for avoiding ($f = 4, 2075) = 1.344, p < .251$). On average, participants indicated that they would be “slightly likely” to seek additional stories on each topic compared to mean scores for subsequent avoidance. Most participants said they would

be “slightly unlikely” to avoid subsequent stories. Additionally, the research found negative correlations between the intention to seek or avoid subsequent news stories for each. These are also included in Table 7.

Table 7: Means, standard deviations, and correlations of intent to seek and avoid subsequent news and correlations between seek and avoid

| | Seeking | | Avoiding | | Correlation |
|--------------|----------|-----------|----------|-----------|-------------|
| | <i>M</i> | <i>SD</i> | <i>M</i> | <i>SD</i> | |
| Economy | 4.53 | 1.59 | 3.28 | 1.65 | -.432*** |
| Pandemic | 4.90 | 1.60 | 3.28 | 1.65 | -.257*** |
| Mega Drought | 4.44 | 1.56 | 3.28 | 1.64 | -.342*** |
| Homicides | 4.47 | 1.60 | 3.28 | 1.69 | -.312*** |
| Drug Prices | 4.68 | 1.57 | 3.07 | 1.63 | -.419*** |

Means of combined measures for each dependent variable (Range of values 1-7)

*** Correlation significant at <.001

The regression model for seeking more information is in Table 8 and the model for avoiding more information in Table 9. The total variance accounted for was larger for seeking than for avoiding. The range of amount of variance accounted for was greater for avoiding than for seeking. The tables also show demographic variables had no significant effect for either seeking or avoiding. The media habit repertoires revealed a higher tendency to seek for those who used a diverse variety of news sources, while those who used mostly conservative sources more often stated they would avoid further stories about the topic. There was also a positive correlation between subsequent news seeking for conservative news source users for Drought, Homicides, and Drug Prices.

Table 8: Regressions predicting additional news seeking (summary of final equations)

| | | <u>Economy</u> | <u>Pandemic</u> | <u>Drought</u> | <u>Homicides</u> | <u>Drug Prices</u> |
|-------------------------|-------------------|----------------|-----------------|----------------|------------------|--------------------|
| | | β | β | β | β | β |
| Demographics | Age | -.057 | -.010 | -.044 | -.085* | -.070 |
| | Gender | .037 | .023 | .010 | .009 | -.007 |
| | Race | -.023 | -.007 | -.066 | -.017 | -.050 |
| | Income | .034 | .037 | .035 | -.005 | .063 |
| | Education | .025 | -.029 | .002 | -.011 | -.079* |
| | ΔR^2 | .028 | .021 | .031 | .022 | .019 |
| News Habits | Broadcast TV News | .036 | .061 | .032 | .116** | .019 |
| | Conservative News | .039 | .061 | .102* | .198*** | .130*** |
| | Diverse Sources | .181*** | .146** | .147** | .065 | .112* |
| | ΔR^2 | .140 | .140 | .168 | .202 | .114 |
| Assessments | Importance | .253*** | .545*** | .590*** | .462*** | .411*** |
| | Story Anxiety | .354*** | .089 | .032 | .119 | .247*** |
| | News Efficacy | .121*** | .096** | .072* | .085* | .100** |
| | ΔR^2 | .431 | .472 | .509 | .479 | .475 |
| | Chronic Anxiety | -.339*** | .183 | .085 | .176 | .080 |
| ΔR^2 | | .437 | .479 | .509 | .481 | .475 |
| Story x Chronic Anxiety | | .345* | -.096 | -.072 | -.149 | -.086 |
| Total | R^2 | .444 | .480 | .510 | .482 | .475 |

Story x Chronic Anxiety = Interaction between story anxiety and chronic anxiety

***Significant at <.001

**Significant at <.01

* Significant at <.05

Table 9: Regressions predicting additional news avoiding (summary of final equations)

| | | <u>Economy</u> | <u>Pandemic</u> | <u>Drought</u> | <u>Homicides</u> | <u>Drug Prices</u> |
|-------------------------|-------------------|----------------|-----------------|----------------|------------------|--------------------|
| | | β | β | β | β | β |
| Demographics | Age | -.049 | -.010 | -.042 | -.119** | -.048 |
| | Gender | .004 | .023 | .001 | .021 | -.003 |
| | Race | .013 | -.007 | -.005 | .017 | .029 |
| | Income | -.032 | .037 | -.030 | -.013 | -.038 |
| | Education | -.032 | -.029 | -.008 | .020 | .018 |
| | ΔR^2 | .066 | .057 | .051 | .055 | .056 |
| News Habits | Broadcast TV News | -.086* | -.025 | -.278 | -.040 | .002 |
| | Conservative News | .130** | .130** | .198*** | .165*** | .160*** |
| | Diverse Sources | -.129* | -.099* | .019 | -.015 | -.059 |
| | ΔR^2 | .109 | .109 | .125 | .085 | .091 |
| Assessments | Importance | .225*** | -.259*** | -.606*** | -.509*** | -.687*** |
| | Story Anxiety | -.295*** | -.223*** | -.033 | .141 | .179** |
| | News Efficacy | -.077* | .002 | -.039 | -.055 | .012 |
| | ΔR^2 | .387 | .379 | .516 | .395 | .501 |
| | Chronic Anxiety | .501*** | .578*** | .245* | .501*** | .480*** |
| ΔR^2 | | .402 | .407 | .523 | .397 | .509 |
| Story x Chronic Anxiety | | -.406** | -.441** | -.167 | -.516*** | -.446*** |
| Total | R^2 | .412 | .418 | .525 | .412 | .519 |

Story x Chronic Anxiety = Interaction between story anxiety and chronic anxiety

***Significant at <.001

**Significant at <.01

* Significant at <.05

Hypothesis 1 suggested that higher levels of chronic anxiety predict greater amounts of avoidance. The effects of chronic anxiety are clear and fairly consistent (Table 9). Chronic anxiety was correlated with greater avoidance in each case from $p < .05$ (Drought) to $p < .001$ for the remaining variables. Hypothesis 1 is fully supported.

The first research question sought to identify if higher chronic anxiety would increase seeking. Table 8 shows higher chronic anxiety predicted less seeking for the Economy, but it had no significant effect in the other stories. The mean importance for the economy story was significantly lower than all the rest of the stories.

Hypothesis 2 predicted that story anxiety and chronic anxiety would be correlated for avoidance of each story. The two types of anxiety were found mostly uncorrelated across all five stories: Economy $R = .056$; Pandemic $R = .056$, Drought $R = .056$, Homicide $R = .077$, and Drug Prices $R = .167^{***}$; $p < .001$). Hypothesis 2 is rejected because story and chronic anxiety were uncorrelated.

The next two hypotheses considered how story anxiety related to subsequent news seeking and avoiding of news stories. Hypothesis 3 predicted higher levels of story anxiety predict less news avoidance because of the findings in the second study that found higher fear related to less avoidance. The results identified that story anxiety predicted less avoidance for Economy and Pandemic, more avoidance for Drug. Hypothesis 3 was unsupported with a mixed pattern of results. Hypothesis 4 predicted that higher levels of story anxiety would also predict greater news seeking. Story anxiety predicted seeking for Economy and Drug Prices; but had no significant effects in the other stories. Hypothesis 4 was also unsupported because of mixed results.

Hypothesis 5 and RQ2 dealt with the effects of the interaction of chronic anxiety with story anxiety. To test this hypothesis and research question, the regressions added an interaction term for each story. For avoidance, the interaction of story and chronic anxiety predicted less avoidance for three of the stories: economy, homicides, and drug prices. Support for H5 is mixed. The interaction of story and chronic anxiety predicted more following for the economy story but had no significant effect in the other stories. In general, the response to RQ2 which asked if there is an interactive effect on following news, was no.

To further understand the conditional effects of the relationship, the research plotted the interactions using *PROCESS* v. 3.2 Mediation Model (Hayes, 2017) 1 with 10,000 bootstraps in the final step. In this model story anxiety was the focal predictor of seeking/avoiding with chronic anxiety treated as the moderator. All other variables in the model were used as covariates. Conditional effects suggested that chronic anxiety strengthened the negative relationships for Economy (Figure 1a) and Pandemic (Figure 1b) at high, moderate, and low levels of chronic anxiety. For Homicide (Figure 1c) and Drug Prices (Figure 1d), the negative effect of story anxiety became significant and stronger at higher levels of chronic anxiety.

Figure 1: *Chronic and story anxiety interactions for news avoiding*

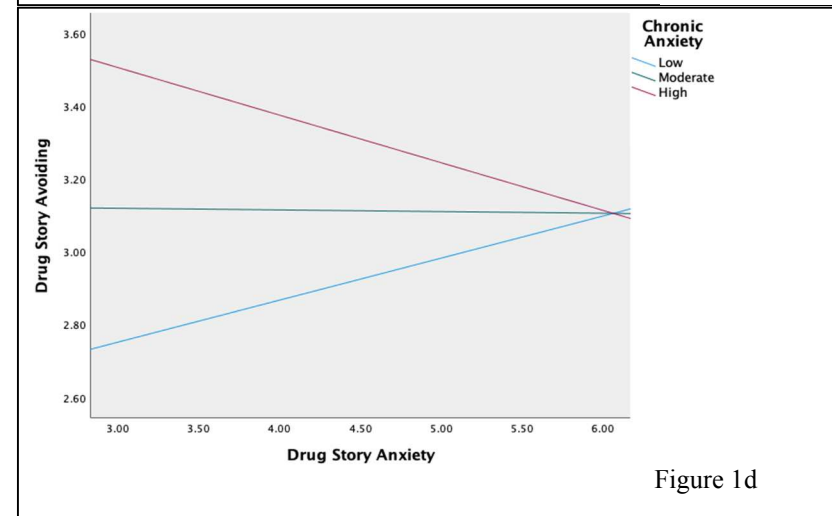
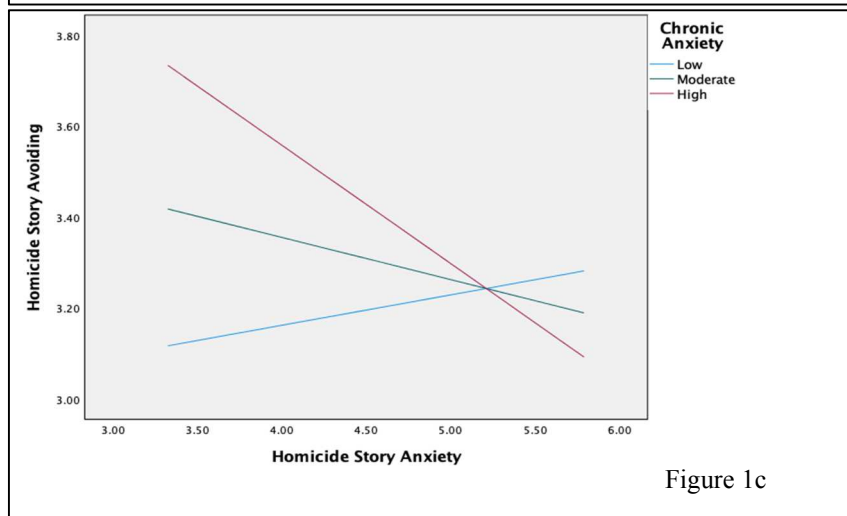
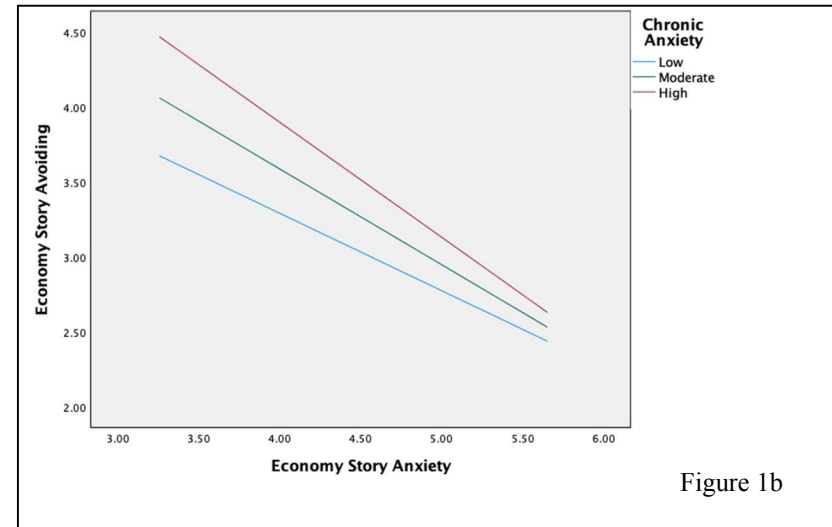
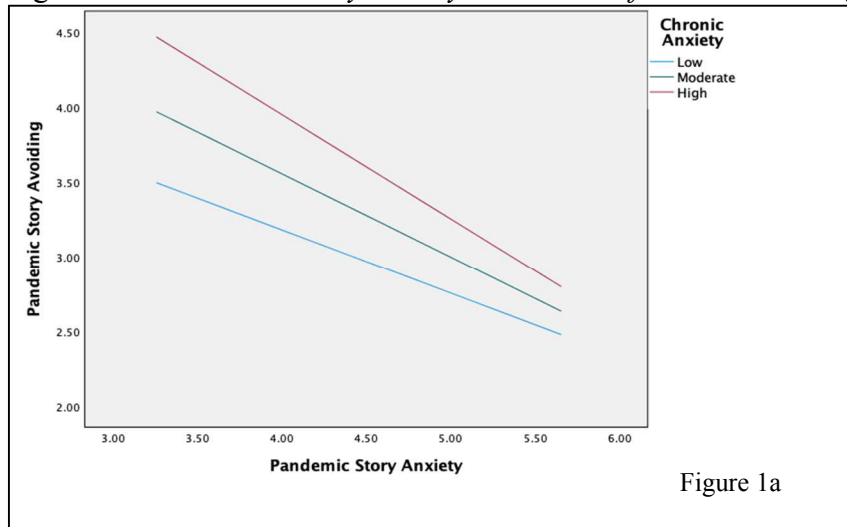
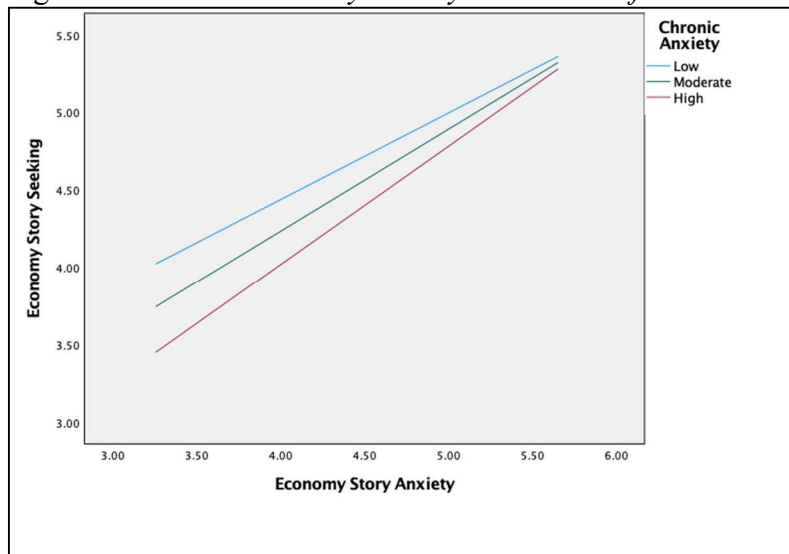


Figure 2: *Chronic and story anxiety interactions for news seeking*



While story anxiety was more mixed, in two cases reducing avoidance and in one case increasing it. In general, when chronic anxiety is high and story anxiety is low, there is high avoidance. When chronic anxiety is high and story anxiety is low, there is lower avoidance. For seeking, only Economy had a significant interaction between story anxiety and chronic anxiety. In this case as story anxiety increased, and as chronic anxiety increased there was an additive effect on seeking.

Hypothesis 6 suggested that news-search efficacy would reduce avoiding. This was only found only for the Economy. There was little support for Hypothesis 6. Hypothesis 7 suggested that news-search efficacy would predict increased seeking. This hypothesis was fully supported for all stories, and Hypothesis 7 is supported.

While not hypothesized because this has been found in prior studies, the regression models found story importance consistently predicting more seeking and lower amounts of avoiding, except for the Economy where importance predicts more avoidance.

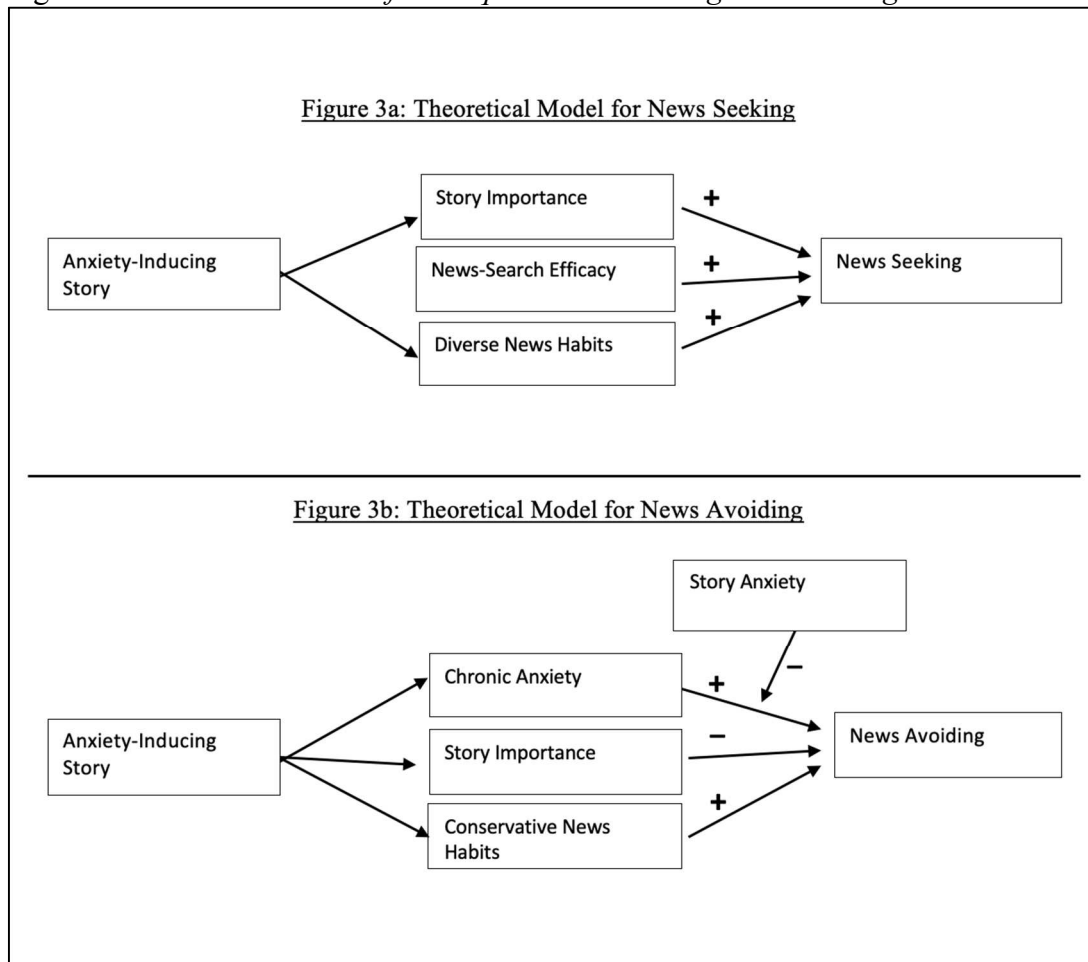
Figures 3a and 3b shows the revised model based on the significant findings. The model considers the pathways to seeking and avoiding as separate processes. For example, chronic

anxiety is not found in the seeking model. Likewise, news-search efficacy is not found in the avoiding model. The hope is that by modeling these as distinct processes, future research will benefit through applying more precise models for each process related to the anxiety response to news stories.

As can be seen in Figure 3a, when a person is exposed to an anxiety-inducing news story, they evaluate the story based on story importance and their beliefs about the ability to find another story about the topic. If story importance and news-search efficacy are high that person is more likely to seek information. Additionally, those who use a diverse variety of news media are more likely to seek information.

But as seen in Figure 3a, the process is very different. Story impotence remains a predictive variable, and if it is low, a person is more likely to engage in subsequent avoiding. Additionally, chronic anxiety comes into play in the avoiding model. A person with chronic anxiety is more likely to a subsequent news story, unless they also have high story anxiety (the anxiety related to the story), and in that case, they will reduce avoiding. In this model, those who use conservative news content are the most likely to engage in news avoiding.

Figure 3: *Theoretical model of subsequent news seeking and avoiding*



CHAPTER 6

DISCUSSION

This section will describe the findings of this research and compare the predictability of the variables to those described in the studies presented in Chapter 2. Together, these three studies will lead to a theoretically driven model of news approach and avoidance that is grounded in evolutionary principles. Recall that evolutionary psychology suggests the basis for all human behavior is the survival of our genes (Tooby & Cosmides, 2015); however, behavior is not wholly determined at birth. In terms of approach and avoidance of information, behavior is dependent on one's genetic predispositions and their learned responses to a threat (Tooby & Cosmides, 2015). Cosmides and Tooby (2013) suggest the brain operates as an advanced computer, and mental modes determine behaviors through categorization, reasoning, learning, and emotion.

The results of this study highlight how an evolutionary approach can successfully explain how humans with anxiety will respond to anxiety-inducing news content. Given much of what we encounter in the news produces anxiety, the evolutionary framework presented in this section contributes significantly to news use research and is a vital step toward understanding why audiences consume and avoid news. But first, the discussion begins with further elaboration of how each variable performed in the present research and attempts to explain both the successful hypotheses and inconsistent findings.

The most important finding in this research is that chronic anxiety leads to subsequent avoidance, regardless of assessments of the story itself, such as the anxiety it brings about, its importance, and one's beliefs about being able to understand and successfully search for subsequent information about the story. This finding supports both previous research on how

anxiety disorders relate to avoidance, in general, and in the field of evolutionary psychology (Marks & Nesse, 1994). As Marks and Nesse (1994) suggest, the anxiety response can be helpful because it triggers an organism to respond; however, an anxiety level that reaches a point in which a person is unable to care for themselves is destructive: “The regulation of anxiety is an example of the benefit-cost tradeoffs that make every organism ‘a bundle of selective compromises’ (Alexander, 1975)” (Marks and Nesse, 1994; p. 254). Therefore, the law of diminishing returns applies to anxiety, as prolonged anxiety carries too many costs that threaten an organism’s survival (Marks & Nesse, 1994). As Sharot and Sunstein (2020) suggest, even though humans are designed to seek important information, they are evolutionarily designed to protect themselves from harm. In the case of prolonged states of anxiety, the biological need for survival overrides other needs. Anxiety often leads a person to a state of helplessness in which they give up and no longer approach threatening information (Wurman, 2001). This study confirms that people with chronic states of anxiety are prone to subsequent news avoidance. Chronic anxiety has no consistent effect on information seeking; however, it is important to note that it does not drive seeking, as is sometimes seen in studies that measure state anxiety (Thorson et al., in review) and fear caused by a frightening stimulus (So et al., 2016). This finding confirms that when one is faced with a decision to seek or avoid news, chronic anxiety and state anxiety (referred to as “story anxiety” in this research) operate differently

So, what conclusions might be drawn from this finding of the effects of chronic anxiety? Kroner & Dugas (2006) suggest that those with chronic anxiety are more likely to lack tolerance for prolonged uncertainty. They are more likely to distract themselves with other activities or suppress thoughts that may further increase discomforting psychological state. Thus, and they avoid the information that causes distress (Kroner & Dugas, 2006). Remember, too, that these

responses often operate outside of a person's consciousness, so the avoidance behavior that results from anxiety may be reflexive versus intentional (Bernard et al., 2005). People may say they avoid news because it has "a negative impact on my mood" (Newman et al., 2019; p. 25) without a conscious understanding of their motivations. It is also likely that for these individuals, avoiding information is a self-protective mechanism that keeps them from increasing anxiety through further exposure to stressful stimuli. Lastly, as chronic anxiety is determined in part by our genetics, the tendency to approach and avoid news itself might also have a chromosomal component. There is evidence of a genetic component to certain types of avoidance behaviors such as avoidant personality disorder (Weinbrecht et al., 2016) and trait avoidance tendencies (Struijs et al., 2017). News research has long suggested that parental habits is one of the most predictive determinants of whether youth will take up a news habit (Edgerly et al., 2018; Shehata, 2016), but is it possible that news avoidance (operating through chronic anxiety) runs in the family?

Story anxiety, operating on its own, was hypothesized to lead to both news seeking and lower amounts of news avoidance as suggested in Thorson et. al.'s (in review) study on news avoidance that used the related measure of fear. These results appeared to be story dependent. Story anxiety had a positive, although not always, significant relationship across the five stories for the seeking model. Economy and Drug Prices were predictive of seeking at a $p < .001$ level. What made these two stories unique? Griffin et al. (1999) find personal control is related to information seeking. One might hypothesize that stories related to personal finance matters require more vigilant monitoring because, unlike homicides, drought, and the Coronavirus pandemic, these risks are more certain. Additionally, Case et al. (2005) suggests that while anxiety is the mechanism that draws the initial response, other factors like personal control,

susceptibility, and self-efficacy influence this effect. Because these variables were not tested, we can only guess whether these variables played an intervening role in the effect of anxiety-driven news seeking. Regardless, the inconsistencies across the variables make it impossible to draw solid conclusions about the role of story anxiety as an immediate response to the stressful content.

The avoidance model also demonstrated mixed results for story anxiety. One notable finding is that greater story anxiety decreased avoiding for Economy and Pandemic. These stories placed the most emphasis on Covid 19's social impacts. For these stories, people were more likely to seek out information even though they were anxious about the topics. This negative correlation was not seen for the other stories and is somewhat surprising given survey data that suggests people experienced news fatigue over the amount of Covid-19 news and were less likely to follow it as the pandemic raged on (Kalogeropoulos et al., 2020).

Yet, despite the inconsistent direct effect of story anxiety, the variable cannot be disregarded. When a person has chronic anxiety, story anxiety decreases news avoidance. This relationship was not hypothesized. The findings elucidate that when story anxiety is low, chronic anxiety is critical to the avoidance response; yet when story anxiety is high the effect of chronic anxiety is diminished. Beesdo-Baum et al. (2012) argue general anxiety can have different effects on people. When presented with new, and stressful information, some people will seek reassurance through searching for additional information to reduce their anxiety. Reassurance seeking is common among those with other mental disorders such as depression and obsessive-compulsive disorder (Beesdo-Baum, 2012; Joiner et al., 1999). Lee and Crunk (2020) argue that this behavior is dangerous, as it can make general anxiety and depression symptoms worsen. Lee and Crunk (2020) studied reassurance-seeking behaviors related to the coronavirus and found

individuals often engaged in excessive internet searches that temporarily relieved their worries about contracting the virus. Reflecting upon the results, one explanation could be that those with general anxiety were triggered by the new information, which led participants to reconsider their avoidance tendencies. While they did not indicate they would seek more information, which would again take more effort for these participants who rarely committed to news use; but they did indicate they would be less likely to avoid it.

This research's final independent variable is news-search efficacy. This variable consistently predicted whether a person would seek out additional information. Bandura's (1999) self-efficacy theory holds up well in the context of news. As Bandura (1982) suggests, if people feel confidence in achieving mastery, they will exert more energy toward the goal, whereas those who think they lack the ability to acquire and understand information will likely give up. In this study, news efficacy resulted in more seeking. This is consistent with Park's (2019) research that found those who felt efficacious about searching for information on social media were more likely to do so. Interestingly, less self-efficacy did not play a consistent role in avoiding subsequent stories. It would seem that if a person had low efficacy, they would more likely avoid. Still, given the single significant result for Homicide, it appears that lack of news efficacy is not enough to drive people away from seeking additional news. Given that story importance is so highly predictive, it seems likely that if a person feels a topic is important enough to know about, they may continue to monitor the topic, regardless of whether they feel efficacious. This is inconsistent with the literature on efficacy and avoidance, in general, which finds one must believe in their ability to commit effort to achieve the task (Bandura, 1982; 1999).

The findings involving efficacy are also somewhat contrary to the conclusions presented by Park (2019). Park's (2019) research found efficacy related to less avoidance of social media

news. However, Park's (2019) research emphasized the pathways from news overload to news avoidance. In doing so, it considered social media news avoidance more in line with opinions about the value and usefulness of news (e.g., whether or not a person values news, whether they would make efforts to avoid news on social media, and whether they felt news was a "waste of time" on social media). So, a key difference between this work and that of Park (2019) is that the present research measures actual avoidance versus usefulness assessments. Thorson et al. (in review) measured the usefulness of news in a similar way and found while this drives news approach after reading a news story, it did not cause people to avoid news across all six stories.

This finding suggests that anxiety-related information seeking operates differently than traditional information seeking. From an evolutionary standpoint, one could say that when a person assesses the importance of news, they weigh the costs and benefits of knowing versus not knowing. The importance of knowing may outweigh efficacy. At the most basic level, the need to protect oneself is more important than the perceived ability to do so. We can assume this was also the case in our ancestral environments when one encountered a serious and significant threat. If our ancestors faced a hungry lion that was certain to attack, they confronted the threat out of necessity and instinct, not necessarily because they thought they would win.

The consistent effect of importance likely comes as no surprise as this is established in various models that explain the approach and avoidance of content. Such models include fear-response frameworks like the information utility model (Knobloch-Westerwick et al., 2005) and the extended parallel process model (Witte, 1994); news consumption models like uses and gratifications (Diddi & Larose, 2006; Katz et al., 1973); and frameworks that apply evolutionary-psychology (Shoemaker, 1996). The effect of importance on seeking further news and refraining from active avoidance was significant in both models. In the case of stories that cause anxiety,

assessments of importance are critical and determine if a person will engage in self-protective action to either approach or avoid (Bernard et al., 2005). Unlike predispositions, motivations based on assessments are also determined through modules in the brain that work as a computer to using associations, reasoning, and emotional responses (Cosmides & Tooby, 2013). People draw from past experiences to determine if the information is essential in terms of both survival and providing needed context (Bernard et al., 2005; Savolainen, 2005; Tunney et al., 2020; Thorson et al., in review).

Another important finding is that assessments of importance consistently drive seeking and reduce avoiding. This would suggest that in terms of importance, seeking and avoiding can indeed be thought of as a continuum as is measured in studies that use amount of news consumed as a primary dependent variable (e.g., Edgerly, 2015; Schröder, 2015), which is also supported in that seeking and avoiding in this research were negatively correlated across all five stories. What is seen in this study is that if a story is important, you will likely seek out another story about it and are very unlikely to avoid further information that might help you better understand or monitor the threatening stimuli. This is consistent with evolutionary research that indicates the importance of a threat leads to increased monitoring (Adolphs, 2013). It is also consistent with news consumption research that finds the importance of a news story is the most consistent predictor of the choice to consume (Harcup & O'Neill, 2017; Kim, 2008).

In terms of the control variables, demographic variables were not consistent across the five topics. This is consistent with the findings in Tunney et al. (2021) and Thorson et al. (in review). While there were some consistencies in the direction of the relationship, they mainly remained insignificant. For example, age (younger), race (non-white), and education (lower education), had a negative, but mostly insignificant, relationship with seeking news stories. On

the other hand, age had a negative but mostly insignificant relationship with avoiding all stories, as did income. These variables are likely less predictive in the digital environment, which is consistent with Pew Research Center's recent findings (2020). Pew's conducted last year found few demographic differences for social media news use. Age differences still exist, with older people less likely to consume news on social media (Pew Research Center, 2020). Statistics for race, gender, income, and education were found remarkably similar in the Pew research (Pew Research Center, 2020).

The relationship between news habits and the intention to seek or avoid subsequent stories is also noteworthy. Interestingly, those with a diverse repertoire of news sources do not consistently seek more news information. For these users, the intention to seek subsequent news stories was only significant for three stories: Economy, Pandemic, and Drought. There were also significant, negative relationships between Economy and Pandemic and intentional avoiding. On the other hand, conservative media habits did not express intention to seek subsequent information on Economy or Pandemic. However, people were more likely to read subsequent news about the three remaining topics. It is possible that conservatives were more likely to reject these stories because they felt news about the pandemic was overhyped, as is suggested in research by Mitchell et al. (2020), which found that by the summer of 2020, 63% of Republicans compared to 18% of Democrats felt the pandemic was exaggerated. A closer look at the data reveals that Republicans' and Democrats' beliefs about story importance were significantly different for Pandemic ($f = 5.990$; $p = .015$). The mean differences in story importance across the other stories were not significant.

Those with conservative news habits were also more likely to avoid news. Significant relationships between avoiding news and this repertoire were found across all five stories. This is

similar to Pew Research that finds Republicans more likely to experience exhaustion from the news (Gottfried, 2020).

Findings for Broadcast TV News were inconsistent for both seeking and avoiding. People who rely mostly on news from television sources may also be more dependent on “appointment television” (e.g., tuning into programs when the content is available). If this is the case, intentional seeking and avoiding news may be irrelevant, as they accept the content that is in front of them.

Application to Previous Works

The discussion moves onto how this work might strengthen the findings of the two previous studies. First, adapting the previously used fear measures to the anxiety measures more often found in psychological research proved less predictive of both seeking and avoiding. These findings would indicate that people likely assess scale measures of fear, such as afraid and scared, much in the same way they do as anxiety measures, such as worried or concerned. Perhaps people understand that a query of fear in response to a news story is not necessarily measuring their immediate fight or flight response, but rather emotions that are ultimately consistent with worry. Still, this research is important as it finds chronic anxiety is a primary driver of news avoidance and confirms that news efficacy is a primary driver of subsequent news seeking.

Before synthesizing the results, it is essential first to overview the key differences in methodology. Tunney et al. (2021) tested the ability to predict routines of seeking and avoiding specific news topics (e.g., nuclear war, terrorism, mass shootings, Ebola virus, and data breaches) using story importance, fear, and response efficacy (Tunney et al., 2021). The seeking and avoiding measures were simple statements of a tendency to follow or avoid the presented

topic. Thorson et al. (in review) introduced the idea of using short news stories to determine if people would search for or avoid additional news on the topic (Thorson et al., in review). Again, single items were used to measure approach and avoidance. The primary variables in Thorson et al. (in review) included fear, story importance, self-efficacy, optimism, pessimism, and perceptions about the utility of news. Finally, the present research's method used 150-word news stories and a multi-item scale to measure intention to seek or avoid a subsequent story about the topic. Key variables used in the present work included chronic anxiety, story importance, story anxiety, and news-search efficacy.

The present work's model for news seeking explained between 44% and 51% of the variance, which improves upon the variance explained in Tunney et al. (2021) by about 5% and Thorson et al. (in review) by more than 25%. Tunney et al. (2021)'s most predictive measures for seeking included age, importance, and self-efficacy in dealing with the threat. Note that Tunney et al. (2021) also found a preference for local and television news was highly predictive of topic following. In contrast, this research found a conservative news habits were somewhat predictive of seeking. Thorson et al. (in review)'s most predictive measures for seeking included fear, importance, self-efficacy, optimism, pessimism, and beliefs about the utility of news. Demographic variables were not predictive of approach.

Results of these three studies emphasize the critical role of importance in determining whether a person will seek news. This is not surprising in itself; however, all three studies were able to demonstrate that the effect of importance remained powerful even when additional predictors were added to each equation. These two studies also demonstrated that fear, which was measured in the same way in Tunney et al. (2021) and Thorson et al. (in review), predicted both topic and subsequent news story following. The present study's modification of the fear

variable to use items more consistent with anxiety failed to capture this effect as story anxiety was only predictive in two cases. This suggests future research should strongly consider the fear measures used in Study's 1 and 2.

A second important finding is the consistent role that efficacy plays in news approach. Tunney et al. (2021) and Thorson et al. (in review) considered self-efficacy toward a threat, which makes sense because people often state they do not consume news because they can do little about the topics presented (Newman et al., 2018; 2019). The present research aimed to consider another form of efficacy --the ability to retrieve information -- which seems especially important in the context of news. The three studies would indicate that efficacy—whether the ability to deal with the threat itself or to manage the information obtained through news consumption, is important to following news. The present study's approach using news efficacy produced more consistent results, as it had a positive relationship with seeking for each story. Still, the combined results of the studies are important, nonetheless. Efficacy is an important variable in news consumption.

The optimism and pessimism measures included in Thorson et al. (in review) are discussed shortly.

As for avoiding subsequent stories, the current research model was again more predictive than Tunney et al. (2021)'s model used to predict avoiding fear-inducing topics and Thorson et al. (in review)'s model used to predict avoiding a similar news story if encountered. The new model explained about 45% of the variance compared to Tunney et al. (2021)'s average of 18% variance for avoiding across the six topics and Thorson et al. (in review)'s average of 29% of variance explained. It is clear that despite the consistency of the variables of overload, fear, and efficacy leading to avoidance in Tunney et al. (2021), the new model's ability to capture

avoidance through chronic anxiety and assessments of importance was substantially more predictive—an improvement of about 25%. The strength of Thorson et al. (in review) was in mostly consistent findings throughout the model, including avoidance being driven by lesser amounts of fear, self-efficacy, assessed story importance, and beliefs that news lacks usefulness. Greater amounts of optimism and pessimism also drove news avoidance.

The findings about optimism and pessimism are also relevant to the present research. Thorson et al. (in review) argued that adding the genetic predisposition of life orientation (optimism versus pessimism) to both the seeking and avoiding models builds upon an evolutionary approach as an overarching theory. The present study was able to confirm the importance of the genetic component toward both news seeking and avoiding through the measure of chronic anxiety, which was even more predictive of news avoidance.

Even though there were differences between these studies' designs (e.g., topics versus stories, fear measures versus anxiety measures), it is likely that a highly predictive model of anxiety-driven news seeking, and avoidance would emerge from combining the variables found in all three studies. (For following, importance and news efficacy. For avoiding, overload, chronic anxiety, and response efficacy). These models would follow an evolutionary explanation that whether one decides to pay attention to or seek information about a threatening event in their environment depends on if they feel the topic is important and whether they feel efficacious toward gathering the necessary information to better deal with the threat or being able to deal with the threat at all (self-efficacy). This is also very consistent with Bandura's (1982; 1986) self-efficacy theory, which suggests that people approach a task when they feel they can successfully accomplish the goal.

Additionally, one's psychological disposition is essential, too. Together, Thorson et al. (in review) and the present research show that coping styles such as optimism and pessimism and a predisposition of chronic anxiety can predict news use behaviors. This is important because as scholars study what makes people follow news (e.g., clicking on headlines or pausing to read content while scrolling through social media), they will likely not achieve full understanding without considering how predispositions operate. Evolutionary psychology suggests assessments work in conjunction with learned behaviors and our own genetics (Tooby & Cosmides, 2015). Therefore, models of uses and gratifications or emotional response are likely insufficient, since these fail to consider that much of what determines whether people will follow news lies beyond their immediate assessments and explanations. Simply put, consumption and avoidance studies must look beyond motives and psychological responses.

CHAPTER 7

CONCLUSION

This research considers how evolutionary principles relate to seeking and avoidance of anxiety-inducing news information. In doing so, it builds upon the classic work of Shoemaker (1996), who first used evolutionary theory to explain why people are attracted to negative news about threats in their environments. This research helped test Shoemaker's central argument, which was necessary because in the years since that work was published, scholars have learned that negative information does not always lead to information seeking (Harmon-Jones, 2008). This is likely because evolutionary theory is not as simple as the biological need to know to survive. It also depends on learned behaviors and emotional responses (Tooby and Cosmides, 2005). As Mobbs et al. (2015) argue, passing down our genes depends on an organism's mental fitness and ability to continue to confront stimuli that evoke anxiety (in this case, news). The automated processes that lead to approach or avoid do not operate on their own.

On the other hand, this research also builds upon models concerned with assessments of threatening information, such as the information utility model (Atkin, 1973; Knobloch-Westerwick et al., 2005). The information utility model suggests that decisions to approach or avoid environmental threats include one's surveillance needs, amount of efficacy, and their assessment about the threat's importance. Although not explicitly stated as an evolutionary model, Knobloch-Westerwick (2014) recognizes that often decisions to avoid threatening information take place outside of human awareness. What the present research does to add to Knobloch-Westerwick's (2014) suggestion, is test that assumption.

The design of the present work also facilitated consideration of mental processes that help a person make conscious decisions to approach or avoid. Evolutionary theory posits that

mental modes shape our reasoning and future behaviors. Choices to approach or avoid negative stimuli are also based on assessments of the problem and one's ability to resolve it. If given an option to avoid a hungry predator, would one choose to confront it? What if a person was armed with a weapon and the skills needed to protect themselves? Would the decision to confront the threat or avoid it become more complicated? This research would indicate yes. When participants felt they were efficacious in their searching abilities about a story, they were likely to approach new information. However, when it comes to avoiding new anxiety-inducing information, efficacy played an inconsistent role, as did the immediate anxiety brought about by the threat. In these cases, participants drew upon their assessments of vital information. Their anxiety response led them to elect to avoid content that caused additional discomfort.

This dissertation is mostly concerned with emotions relate to news consumption and avoidance. Although the vast majority of people still sometimes consume news (Newman et al., 2019), it seems likely that the heyday of traditional journalism is over. U.S. household daily print newspaper subscriptions held steady at approximately 62 million from the Nixon Era through 1990 but began a steep downward trend to 30.8 million in 2019, which was the lowest level since 1940 (Barthel, 2019). Both European newspaper subscriptions and television audiences declined at an approximate rate of 3% to 4% from 2012 to 2016 (Nielsen & Sambrook, 2016). In recent years newspapers began to offer premium content behind paywalls to offset revenue losses (Hazard Owen, 2020). Another telling sign of a shift in mainstream audiences became apparent in March of 2020 when 37% of U.S. adults reported following network news daily, which was not only an election year but the same month that the U.S. declared the coronavirus a national pandemic (Watson, 2020).

The industry effects of reduced news consumption are catastrophic. The U.S. news industry sliced staffing numbers in half from 2008 to 2019 as the number of people employed in news shrunk from 114,000 to 88,000 (Grieco, 2020). Newspaper staffing cuts drove this trend as broadcast and digital newsrooms saw slight increases in staffing levels (Grieco, 2020).

While these industry shifts are alarming for scholars and news organizations, many psychologists advocate that people limit or eliminate their news consumption to reduce anxiety (e.g., Pinker, 2018). The findings of the present research indicate that it is not anxiety over the stories themselves that leads to seeking and avoiding behaviors. Rather, the chronic anxiety predicts these responses. While this research is unable to identify whether long-term exposures to news contributed a person's continued anxiety, it is also unable to place causation on the immediate anxiety caused by a story to be so worrisome that a person reaches the state in which they shut down and turn away from news. In fact, story anxiety predicted some approach and avoidance in this research, which indicates that the suggestion that people avoid news to reduce anxiety is a bit hasty.

The next step in this line of research is to continue to develop an evolutionary model of news approach and avoidance. This study, and the previous two studies detailed in this work, indicate that biology and assessments are at play in decisions to consume or avoid news. Models that incorporate both will be much more predictive than models that simply consider a news' usefulness or the motives for news consumption or avoidance (e.g., uses and gratifications).

Beyond the scholarly implications, it is more difficult to offer suggestions on how news organizations might better shape content to increase consumption while minimizing harm through possibly contributing to general anxiety. This study cannot identify a causal relationship between the participants' general anxiety levels and news consumption of stressful content;

however, it did identify that individuals are less likely to avoid news if the anxiety related to a specific story is high. News organizations seem to monopolize on this tendency through what Schudson (1997) describes as heightening “moral panic,” which means fear drives surveillance. As described in this study, humans are wired to pay attention to important news, and when threats to their personal freedoms emerge, perceptions of importance are heightened, and they are more likely to follow content that may further increase their anxiety.

However, there is an opportunity for news organizations to better shape content on digital platforms that can capture user predispositions. As shown by the significant effects of general anxiety on avoidance, it is critical for news organizations to consider the role of evolution on seeking and avoiding anxiety-inducing news (e.g., predispositions). Predispositions operate outside of our awareness, and it is a heavy task to overcome one’s programmed genetic response; Therefore, continued attempts to find the perfect prescription to increase news consumption exclusively through news presentation will be fruitless. Fortunately, our high-tech era of digital news may be able to rectify these issues. It is now possible to tailor content to the individual consumer. Algorithms make it possible to filter undesired content and increase relevant content on one’s digital news feed (Weber & Kosterich, 2018; Thorson & Wells, 2016). Additionally, as bots continue to take on more news production and dissemination, the high-tech approach can also do more to customize story style, tone, and content to the individual user (Hong & Oh, 2020; Thurman et al., 2019). These automated processes could use hyperdata to better produce content that attracts and retains a news audience with fewer harmful psychological side effects. While this suggestion likely comes as no comfort to the journalists swimming against the current to keep journalism afloat, it is an encouraging possibility in the sense that it may increase news

consumption, which is considered so vital to our democracy and civic participation (Bennet, 2000; Boulianne, 2020). In the Machiavellian sense, perhaps the ends will justify the means.

This new approach also comes with a dire warning. The ability to use our genetic predispositions to influence behavior has lofty ethical implications. Bots are currently being used to sway political beliefs (Woolley & Howard, 2016) and sell products (Kim & Han, 2020). A lack of transparency about the processes operating behind bots removes user agency (Diakopoulos & Koliska, 2017). Further, Facebook has already demonstrated fuzzy ethical boundaries through its study of social contagion measured through manipulating the feeds of users to play upon their psychological state of depression (Kramer, 2012). Clearly, there are risks to customizing content to match a user's emotional needs, but it would be naive to think technology is not rapidly progressing in this direction. The warning is this: business and governmental leaders must be proactive in determining limits of artificial intelligence because even as the possibility of increasing consumption is exciting, it is not without a cost. It is also likely that our current evolutionary adaptive state is not up to the challenge of automated manipulation.

Caveats

As with any research, there are limitations. Future research should incorporate stories that present a broader range of induced anxiety levels, importance amounts, and efficacy amounts. The results found means for each of these independent variables were similar and slightly above average. More potent effects might be observed with greater variation among the independent variables. Additionally, the research did not test stories that related to immediate threats or proximal threats. The anxiety response to such threats might reveal differences in response, seeking, and avoiding. Finally, an experimental method comparing responses between groups

presented with high-anxiety and low-anxiety and stories that relate to high and low levels of news-search efficacy may bring more support toward making conclusions about causal relationships.

It is also important to remember that this study was only concerned with anxiety-inducing stories; therefore, future research cannot apply the results to general news or news that brings about other discrete emotions such as happiness, anger, and disgust. Likewise, while the breadth of topics strengthens the study in that consistent relationships have more substantial theoretical contributions, there are tradeoffs to this approach. Selecting stories with a unified topic (e.g., pandemic, shootings, climate-change effects) would potentially reduce the variation that resulted from the confounding variable of topic-specific assessments.

Another potential weakness of this research is in the measurement of the independent variables. Items were derived from previous, related literature and confirmed through factor analysis; however, best practices for scale development involve a lengthy and detailed process that includes qualitative and quantitative stages in the design. To assume the scales used here were all-inclusive and best suited for studying news use would be naive. For researchers interested in scale development, this research offers several opportunities for further exploration, especially for scales for seeking and avoiding news and news self-efficacy. Better scales may yield more consistent results.

Replication is always vital. While this research strengthened the findings of importance and news efficacy on news seeking and avoidance, one study on the effects of chronic anxiety is not enough to draw conclusions about its relationship with all news content. It is exciting to introduce a new variable to the study of news seeking and avoiding, especially since such powerful effects were found. However, mass communications research will benefit greatly from

future research that explores an evolutionary model of news seeking and avoidance more deeply. With the popularity of news avoidance as a phenomenon and research area, it seems the time for these studies is at hand.

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APPENDICES

APPENDIX A

Tunney et al. (2021) Regression Equations for Following

Table 10: *Regressions Predicting Following News Topics (Summary of Final Equations)*

| | | <i>Adjusted R²</i> | | | | | |
|--------------------------------|-------------------|-------------------------------|------------------|--------------------|----------------|----------------|--------------|
| | | <u>Shooting</u> | <u>Terrorism</u> | <u>Nuclear War</u> | <u>Weather</u> | <u>Hacking</u> | <u>Ebola</u> |
| Demographics | Age | .214**** | .226**** | .251**** | .106* | .217**** | .183**** |
| | Gender | .047 | -.039 | -.035 | .041 | -.134 | -.003 |
| | Race | .043 | .048 | .010 | -.095* | .057 | .060 |
| | Education | .069 | .034 | .023 | .019 | .102* | .086 |
| | Income | .014 | -.036 | .049 | .007 | -.016 | .001 |
| Media Use | Liberal | -.001 | .026 | .129* | -.090 | .096* | .198**** |
| | Local/TV | .231**** | .254**** | .169**** | .262**** | .208**** | .035 |
| | Conservative News | .138** | .075 | .192**** | .073 | .113** | .070 |
| | Online/Social | .183**** | .100 | .133** | .091 | .063 | .204**** |
| Threat Perceptions | | | | | | | |
| | Importance | .321**** | .293**** | .294**** | .340**** | .334**** | .203**** |
| | Overload | -.013 | .011 | .063 | -.019 | .050 | .050 |
| | Fear | -.021 | .093 | -.068 | .065 | .070 | .095 |
| | Efficacy | -.033 | .016 | -.060 | .105** | .123*** | .120** |
| Adjusted <i>r</i> ² | | .390 | .391 | .404 | .340 | .500 | .408 |

****Significant at <.001

***Significant at <.005

**Significant at <.01

* Significant at <.05

APPENDIX B

Tunney et al. (2021) Final Regression Equations for Avoiding

Table 11: *Regressions Predicting Avoiding News Topics (Summary of Final Equations)*

| | | <i>Adjusted R²</i> | | | | | |
|--------------------|-------------------|-------------------------------|------------------|--------------------|----------------|----------------------|--------------|
| | | <u>Shooting</u> | <u>Terrorism</u> | <u>Nuclear War</u> | <u>Weather</u> | <u>Data Breaches</u> | <u>Ebola</u> |
| Demographics | Age | -.146** | -.154** | -.105 | -.108* | -.096 | -.119* |
| | Gender | -.046 | .014 | .048 | -.067 | -.019 | -.013 |
| | Race | .064 | -.054 | -.027 | .043 | .029 | .014 |
| | Education | -.032 | -.108* | -.002 | -.018 | -.087 | -.025 |
| | Income | -.040 | .087 | .068 | .016 | .034 | .021 |
| Media Use | Liberal | .068 | .031 | .029 | .080 | .088 | .093 |
| | Local/TV | .001 | -.156** | -.122* | -.114 | -.101 | -.115* |
| | Conservative News | .088 | .033 | .059 | .1093 | .100 | .106 |
| | Online/Social | .007 | -.021 | .068 | .062 | .057 | .047 |
| Threat Perceptions | | | | | | | |
| | Importance | -.054 | -.032 | -.107 | -.114 | -.075 | -.079 |
| | Overload | .204**** | .260**** | .163** | .136** | .137** | .182**** |
| | Fear | .115 | .193*** | .167** | .176*** | .284**** | .256**** |
| | Efficacy | .163*** | .203**** | .219**** | .151*** | .049 | .020 |
| Adjusted r^2 | | 0.177 | 0.203 | 0.161 | 0.154 | 0.184 | 0.191 |

****Significant at <.001

***Significant at <.005

**Significant at <.01

* Significant at <.05

APPENDIX C

Thorson et al. (in review) Final Regression Equations for Approach

Table 12: *Regressions Predicting Story Approach (Summary of Final Equations)*

| | | <u>COVID</u> | <u>Drought</u> | <u>Extinction</u> | <u>Retirement</u> | <u>Shooting</u> | <u>Beach</u> |
|--------------|-------------------|--------------|----------------|-------------------|-------------------|-----------------|--------------|
| | | β | β | β | β | β | β |
| Demographics | Age | >.01 | .03 | -.05 | .07 | -.06 | -.02 |
| | Gender | .04 | -.04 | -.02 | -.02 | .01 | -.01 |
| | Race/Ethnicity | .12** | .06 | .05 | .06 | .07 | .01 |
| | Education | -.03 | -.10* | -.05 | -.06 | -.03 | -.04 |
| | Political Party | >-.01 | .04 | .03 | .00 | .00 | .03 |
| Media use | Liberal News | .09 | .18** | .14* | .11 | .11 | .18** |
| | Conservative News | .05 | -.01 | -.01 | .07 | .09 | -.01 |
| | Nightly News | .02 | -.01 | .06 | .03 | -.02 | .06 |
| Perceptions | Fear | .20*** | .26*** | .25*** | -.19** | .23*** | .18** |
| | Importance | .14** | .19*** | .19*** | -.20*** | .14** | .25*** |
| | Efficacy | .09 | .16*** | .19*** | -.12* | .14*** | .14** |
| Traits | Optimism | .28*** | .23*** | .22*** | .26*** | .23*** | .27*** |
| | Pessimism | .09* | .07 | .11** | .15*** | .12** | .15*** |
| | News Utility | .15** | .16 | .12* | .09 | .22*** | .07 |
| adj. R^2 | | .26 | .30 | .26 | .25 | .29 | .31 |

* $p \leq .05$, ** $p \leq .01$, *** $p \leq .001$

Demographics: Race: 1 = White, 2 = Black/African American, 3 = Hispanic, 4 = Am. Indian/Alaska Native, 5 = Asian, 6 = Other; Gender: 1 = Male, 2 = Female; Political Party: 1 = Strong Democrat, 7 = Strong Republican

Media Use: Liberal news: CNN, MSNBC, liberal websites, NPR/podcasts, national, and international newspapers and websites; Conservative news: Fox News, radio, and conservative websites; Nightly TV news: National and local television broadcasts

APPENDIX D

Thorson et al. (in review) Final Regression Equations for Avoiding

Table 13: *Regressions Predicting Story Avoid (Summary of Final Equations)*

| | | <u>COVID</u> | <u>Drought</u> | <u>Extinction</u> | <u>Retirement</u> | <u>Shooting</u> | <u>Beach</u> |
|--------------|-------------------|--------------|----------------|-------------------|-------------------|-----------------|--------------|
| | | β | β | β | β | β | β |
| Demographics | Age | -.01 | .00 | .04 | .01 | .00 | .00 |
| | Gender | -.11* | -.08 | .04 | -.02 | -.07 | -.02 |
| | Race/Ethnicity | -.02 | .00 | -.03 | -.06 | -.05 | .00 |
| | Education | -.08 | -.01 | .09 | .04 | .01 | .07 |
| | Political Party | .14*** | .04 | .10** | .06 | .17*** | .05 |
| Media use | Liberal News | .07 | -.05 | -.04 | .01 | -.02 | -.04 |
| | Conservative News | .04 | .17** | .17** | .03 | .05 | .09 |
| | Nightly TV News | -.04 | .02 | -.03 | .01 | .01 | -.01 |
| Perceptions | Fear | -.29*** | -.31*** | -.34*** | .36*** | -.327*** | -.29*** |
| | Importance | -.14** | -.15** | -.22*** | .16** | -.11* | -.24*** |
| | Efficacy | -.15** | -.19*** | -.24*** | .22*** | -.24*** | -.27*** |
| Traits | Optimism | .07 | .08 | .08* | .08* | .09* | .10** |
| | Pessimism | .26*** | .32*** | .26*** | .31*** | .26*** | .27*** |
| | News Utility | -.15** | -.13** | -.13** | -.07 | -.06 | -.12** |
| adj. R^2 | | .29 | .30 | .34 | .28 | .24 | .29 |

* $p \leq .05$, ** $p \leq .01$, *** $p \leq .001$

Demographics: Race: 1 = White, 2 = Black/African American, 3 = Hispanic, 4 = Am. Indian/Alaska Native, 5 = Asian, 6 = Other; Gender: 1 = Male, 2 = Female; Political Party: 1 = Strong Democrat, 7 = Strong Republican

Media Use: Liberal news: CNN, MSNBC, liberal websites, NPR/podcasts, national, and international newspapers and websites; Conservative news: Fox News, radio, and conservative websites; Nightly TV news: National and local television broadcasts

APPENDIX E

Survey Instrument

Consent

Q1.1 You are invited to participate in a voluntary survey conducted by a research team at Michigan State University (MSU). You have the right to be informed about the procedures, so you can decide if you want to participate. The research consists of a 25-minute survey and questionnaire in which you will be asked to read a news article and answer some questions. You will also be asked to complete additional information about your background and news habits.

All participation is voluntary, and you may withdraw from the study at any time. Your participation is not expected to cause any risks greater than those encountered in everyday life. Additionally, you have the right not to answer any question you are uncomfortable with. However, note that compensation may be reduced if a participant fails to complete the survey per rules set forth by your panel provider.

Your identity, participation, and any information you provide will be kept confidential. Your information will not be shared with anyone. MSU IRB and the researchers will have access to the data. The data will be kept for at least three years after the project closes.

Incentives: Your survey panel provider will award a monetary incentive for this study. Your reimbursement amount depends on the portion of the survey you complete and is determined by the panel provider.

If you have questions or concerns about your role and rights as a research participant, would like to obtain information, offer input, or register a complaint about this study, you may contact Carin Tunney tunneyca@msu.edu or Dr. Esther Thorson at ethorson@msu.edu. Alternatively, you may contact anonymously, if you wish, the Michigan State University's Human Research Protection Program at 517-355-2180, Fax 517-432-4503 or email irb@msu.edu or regular mail at 4000 Collins Road, Suite 136, Lansing, MI 48910.

Consent: I have read this consent form, and my questions have been answered. I understand that participation in this study is voluntary and that I can withdraw if I do not wish to provide an answer. I hereby give my voluntary consent to participate in this study and confirm that I am at least 18 years of age by clicking on the ">>" button

The quality of our data and results is important. Do you promise to read the question thoughtfully, and provide your best answers?

Yes, I promise to provide my best answers. (1)

No, I cannot promise to provide my best answers. (2)

I'm not sure. (3)

Demographics

What is your age?

How would you describe your gender?

- Male (1)
- Female (2)
- Non-binary (3)

What is your race?

- White (1)
- Black or African American (2)
- American Indian or Alaska Native (3)
- Asian (4)
- Native Hawaiian or Pacific Islander (5)
- Hispanic (7)
- Other (6)

What is your approximate annual household income, before taxes? (USD)

- Less than \$24,999 (1)
- \$25,000 to \$49,999 (2)
- \$50,000 to \$99,999 (3)
- \$100,000 to \$149,999 (4)
- \$150,000+ (15)

What is the highest level of education you have completed?

- Less than high school (1)
- High school graduate (2)
- Some college (3)
- 2-year degree (4)
- 4-year degree (5)
- Professional degree (6)
- Doctorate (MD, JD, PhD) (8)

Generally speaking, which best describes your political views?

- Very liberal (1)
- Liberal (2)
- Somewhat liberal (3)
- Moderate (4)
- Somewhat conservative (5)
- Conservative (6)
- Very conservative (7)

Which political party affiliation do you most closely identify with?

- Democrat (1)
- Republican (2)
- Independent (3)
- Non-political (4)

Stimulus Block

Next, you will see a series of brief news stories. Please read them carefully before providing your responses.

Please read this story carefully before moving on to the next set of questions.

(Embedded timer)

After reading this news story, how likely are you to do the following?

Responses: Extremely Unlikely = 1, Moderately unlikely = 2, Slightly unlikely = 3, Neither likely nor unlikely = 4, Slightly likely = 5, Moderately likely = 6, Extremely likely = 7

- I plan to seek more news about stories like this.
- I intend to look into more news stories on this topic.
- I will make a point to follow news about this topic.
- I will avoid news stories like this in the future.
- I intend to ignore future news stories about this.
- I plan to tune out news about this topic if I see it again.

In regard to you personally, how would the following statements describe your feelings after this story?

Responses: Strongly disagree = 1, Disagree = 2, Somewhat disagree = 3, Neither agree nor disagree = 4, Somewhat agree = 5, Agree = 6, Strongly agree = 7

- I feel anxious about the topic of this story.
- I am worried that this problem can't be resolved.
- Thinking about this topic makes me concerned.
- I don't feel worried after reading this story.
- This topic doesn't cause anxiety for me.
- I don't feel concerned about this topic.

How well do these statements describe your thoughts after reading this news story?

Responses: Strongly disagree = 1, Disagree = 2, Somewhat disagree = 3, Neither agree nor disagree = 4, Somewhat agree = 5, Agree = 6, Strongly agree = 7

- I can easily understand what the reporter is talking about.
- This story is too difficult to understand.
- The point of this story is clear to me.
- I can easily find further news I might want on this topic.
- I think I'd struggle to find information about this topic in the news.
- Searching for follow-up stories on this topic would be difficult for me.

In regard to you personally, how would the following statements describe your feelings about this story?

Responses: Strongly disagree = 1, Disagree = 2, Somewhat disagree = 3, Neither agree nor disagree = 4, Somewhat agree = 5, Agree = 6, Strongly agree = 7

- This story is important to me.
- This story is relevant to my life.
- I believe this story is valuable to me.
- I believe this story has no bearing on my life.
- For me, this story is unimportant.
- This story is not something that I care about.

Are you reading the questions thoughtfully before responding? Please respond "definitely yes."

- Definitely not
- Probably not
- Might or might not
- Probably yes
- Definitely yes

Skip To: End of Block If Are you reading the questions thoughtfully before responding? Please respond "definitely yes."

News Habits

Thinking back, how often in the last week have you paid attention to the following news using *any platform* (For example, social media, television, cable, newspapers, streaming, news apps. etc.)

Responses: Never = 1, 1-2 days = 2, 3-4 days = 3, 5-6 days = 4, Every day = 5

- On-air or online national television network news (For example, ABC, NBC, CBS, etc.)
- On-air or online local television news
- Your local newspaper, printed or online
- Printed or online news from national newspapers (For example, New York Times, USA Today, Washington Post, etc.)
- Cable or online news from CNN (For example, Jake Tapper, Anderson Cooper, Don Lemon, etc.)
- Cable or online news from FOX News (For example, Sean Hannity, Tucker Carlson, Fox & Friends, etc.)
- Cable or online news from MSNBC (For example, Rachel Maddow, Lawrence O'Donnell, Joy Reid, etc.)
- On-air or online news from NPR (For example, Morning Edition or All Things Considered, etc.)
- Online conservative news content (For example, The Federalist, Drudge Report, National Review, etc.)
- Online liberal news content (For example, Daily Kos, The Nation, Mother Jones, Vox, etc.)
- Online content from international news sources (For example, The Independent, BBC, The Guardian, etc.)
- Conservative news content via talk radio, podcasts, or streaming (For example, Mark Levin, Rush Limbaugh, Infowars, etc.)
- Online-news/entertainment news sources (For example, Buzz Feed, TMZ, People, Huffington Post, etc.)
- Cable or online news from Newsmax (For example, Greg Kelly, Howie Carr, etc.)
- *Please respond "never" to this question*

News Skepticism

Generally speaking, how do the following statements describe your feelings about news?

Responses: Strongly disagree = 1, Disagree = 2, Somewhat disagree = 3, Neither agree nor disagree = 4, Somewhat agree = 5, Agree = 6, Strongly agree = 7

- *I don't believe the news media tells the whole story.*
- *I think most news is accurate.*
- *I don't think most news can be trusted.*
- *I trust the news media to report the news fairly.*
- *I question the credibility of the news media.*
- *I can rely on most news stories to be true.*

Chronic Anxiety

How often over the past two weeks have you been bothered by the following problems in your daily life?

Responses: Not at all = 1, Several days = 2, More than half the days = 3, Nearly every day = 4, Every single day = 5

- Feeling nervous, anxious, or on edge
- Not being able to stop or control worrying
- Worrying too much about different things
- Having trouble relaxing
- Being so restless that it's hard to sit still
- Becoming easily annoyed or irritable
- Feeling afraid as if something awful might happen

End

Thank you for being a part of Michigan State University's quality research tradition. The goal was to examine how anxiety and other factors influence whether you follow or avoid news stories. Please note, the content of these stories contained some misinformation, which was necessary to construct our research. If you have questions, please contact the primary researcher, Carin Tunney, at tunneyca@msu.edu.

APPENDIX F

Stimulus Stories

By Editorial Staff | Published 2:10 p.m. ET February 2, 2021 |



Health officials worldwide are racing to increase the speed of vaccinations as new coronavirus mutations emerge. Cities worldwide report new and more contagious variations, prompting additional lockdowns, curfews and social distancing orders.

Mutations concern scientists because there's little research about the vaccinations' efficacy as the virus changes. Scientists said current vaccines will likely provide immunity against the mutations, but there's no certainty of how severe future mutations may be.

Globally, officials are scrambling to vaccinate higher-risk individuals. But the coordination of massive-scale vaccinations is a challenge, leaving many of the most vulnerable at risk. Less than 10% of the world's population has received vaccinations. Vaccine eligibility for low-risk groups may not come until this spring.

Scientists said the virus won't stop until enough people are inoculated to halt the spread. But even as drug manufacturers roll out millions of doses, many people distrust the vaccination and worry about unknown side effects.

By Editorial Staff | Published 2:10 p.m. ET February 2, 2021 |



Despite gains in the stock market over the past several years, economists say there's reason for concern about U.S. economic growth. Unemployment increased sharply amid the global coronavirus pandemic that shuttered retailers and restaurants. Movie theaters, airlines and hotels are also suffering deep losses that threaten those industries.

According to the Bureau of Labor and Statistics, about 10.7 million people are already unemployed. While that's up from the spring of 2020, it's far worse than the pre-crisis record lows.

Estimates from the Bureau of Economic Analysis show goods and services produced in the U.S. decreased 31.7% in the second quarter, which was a significant drop from the 5% losses seen in the first quarter of 2020.

Experts don't anticipate the latest economic stimulus plan to drive enough consumer spending to boost the economy into rapid recovery. The less aggressive approach considers the ballooning federal deficit, which increased dramatically in recent years.

By Editorial Staff | Published 2:10 p.m. ET February 2, 2021 |



2020 was a killer year in the U.S. in every way, including murder. The country saw the largest, single-year spike in homicides since the U.S. started tracking crime data in the mid-1900s. Experts say gun violence is largely to blame.

In the first nine months of 2020, a 20.9% increase in killings was reported, but that number will rise as the remaining yearly crime data comes in.

According to the FBI, the bloody year extends to rural areas, small towns and big cities. Cities with fewer than 10,000 residents saw more than a 30% increase in killings – a percentage one criminologist called “insane.”

In many departments, 2020 saw police ranks thinned significantly by the combined effect of sick officers and others being assigned to manage racial and anti-police protests that occurred across the country. In other cities, departments pulled many officers off patrols to reduce interaction with people due to Covid-19.

By Editorial Staff | Published 2:10 p.m. ET February 2, 2021 |



Experts say a mega-drought is emerging across the southwestern U.S. that could bring the worst conditions since medieval times.

Researchers looked at evidence, including tree-rings dating back to 1,200 years ago. It points to conditions similar to those the region faces now – a coming drought worse than the Dust Bowl that could last for decades.

While the southwest is prone to drought, groundwater reserves ease the impact. Today, reservoirs are dwindling because of reduced rainfall and temperatures that increased between 1 and 2 degrees over the last 20 years. Even deep wells can't effectively reach groundwater. Scientists said humans take water resources for granted.

The last few decades have seen communities around the globe forced to migrate because of environmental changes. Scientists say mega-drought conditions could force some residents to leave areas of the southwest, with major disruptions to cities and towns and damaging effects on agriculture and the global economy.

By Editorial Staff | Published 2:10 p.m. ET February 2, 2021 |



If you or a loved one uses prescription medication, expect to pay more this year. Drug manufacturers launched into 2021 by hiking prices on over 500 medicines, according to 3 Axis Advisors, an independent healthcare firm that tracks drug costs.

Drugmakers lost money in 2020 as fewer doctor and hospital visits decreased demand. Drugmakers, including Pfizer, Bristol Meyers and GlaxoSmithKline, responded by raising prices—with a median increase of 4.8%. Last year, prices on more than 850 medications saw price increases.

The latest hikes spared few medical conditions. The list includes medications to treat cancer, blood clots, rheumatoid arthritis, erectile dysfunction, asthma, anxiety and depression.

The increased prices are expected to further burden families amid the global recession. Drug companies said the money is needed to fund new research and offset the cost of developing vaccines for the coronavirus. Critics say the profitable industries continue to gouge customers with overpriced drugs.

APPENDIX G

IRB Letter

MICHIGAN STATE UNIVERSITY

EXEMPT DETERMINATION Revised Common Rule

February 1, 2021

To: Esther Thorson

Re: **MSU Study ID:** STUDY00005669
Principal Investigator: Esther Thorson
Category: Exempt 2(ii)
Exempt Determination Date: 2/1/2021
Limited IRB Review: Not Required.

Title: Worried, Hopeless, and Inept: Predicting News Seeking and Avoidance through Measures of Anxiety and News Self-Efficacy

This study has been determined to be exempt under 45 CFR 46.104(d) 2(ii).

Institutional restrictions to in-person human subject research activities conducted by MSU employees, MSU students, or agents of MSU are in place, but MSU is phasing in human research that has the potential for in-person interactions with participants, using a Tier approach. Restrictions to in-person interactions with human research participants by MSU employees, MSU students, or agents of MSU are in place until the activity is permitted under a Tier and a Human Research Plan for a Safe Return is approved. Visit <http://hrpp.msu.edu/COVID-19/index.html> for the restrictions, Tiers, forms, and the process.



Office of

**Regulatory
Affairs
Human Research
Protection Program**

4000 Collins Road
Suite 136
Lansing, MI 48910

517-355-2180
Fax: 517-432-4503
Email: irb@msu.edu
www.hrpp.msu.edu

Principal Investigator (PI) Responsibilities: The PI assumes the responsibilities for the protection of human subjects in this study as outlined in Human Research Protection Program (HRPP) Manual Section 8-1, Exemptions.

Continuing Review: Exempt studies do not need to be renewed.

Modifications: In general, investigators are not required to submit changes to the Michigan State University (MSU) Institutional Review Board (IRB) once a research study is designated as exempt as long as those changes do not affect the exempt category or criteria for exempt determination (changing from exempt status to expedited or full review, changing exempt category) or that may substantially change the focus of the research study such as a change in hypothesis or study design. See HRPP Manual Section 8-1, Exemptions, for examples. If the study is modified to add additional sites for the research, please note that you may not begin the research at those sites until you receive the appropriate approvals/permissions from the sites.

Please contact the HRPP office if you have any questions about whether a change must be submitted for IRB review and approval.

REFERENCES

REFERENCES

- Adolphs, R. (2013). The biology of fear. *Current Biology*, 23(2), R79-R93.
- Aharoni, T., Kligler-Vilenchik, N., & Tenenboim-Weinblatt, K. (2021). “Be less of a slave to the news”: A text-material perspective on news avoidance among young adults. *Journalism Studies*, 22(1), 42-59.
- Ajzen, I. (1998). Models of human social behavior and their application to health psychology. *Psychology and Health*, 13(4), 735-739.
- Ajzen, I., & Fishbein, M. (2005). The influence of attitudes on behavior. https://www.researchgate.net/profile/dolores_albarracin2/publication/325114583_the_influence_of_attitudes_on_behavior_the_influence_of_attitudes_on_behavior/links/5af852fa4585157136e795d5/the-influence-of-attitudes-on-behavior-the-influence-of-attitudes-on-behavior.pdf
- Aldwin, C. M., Sutton, K. J., & Lachman, M. (1996). The development of coping resources in adulthood. *Journal of Personality*, 64(4), 837-871.
- Althaus, S. L. (2002). American news consumption during times of national crisis. *PS: Political Science & Politics*, 35(3), 517-521.
- American Psychological Association (n.d.). APA Dictionary of Psychology. *American Psychological Association*. Retrieved January 20, 2021, from <https://dictionary.apa.org/state-anxiety>.
- Alexander, R. D. (1975). The search for a general theory of behavior. *Behavioral Science*, 20(2), 77-100.
- APA. (n.d.). Anxiety. Retrieved October 29, 2020, from <https://www.apa.org/topics/anxiety>
- Archuleta, K. L., Dale, A., & Spann, S. M. (2013). College students and financial distress: exploring debt, financial satisfaction, and financial anxiety. *Journal of Financial Counseling and Planning*, 24(2), 50-62.
- Atkin, C. (1973). Instrumental utilities and information seeking. In P. Clarke, *New Models for Mass Communication Research*. Sage.
- Aupperle, R. L., & Paulus, M. P. (2010). Neural systems underlying approach and avoidance in anxiety disorders. *Dialogues in Clinical Neuroscience*, 12(4), 517-531. <https://doi.org/10.31887/DCNS.2010.12.4/raupperle>

- Balderston, M. (2020, November 19) Broadcast, cable are top sources for U.S. news consumption, study finds. *TV Tech*. Retrieved March 15, 2021, from <https://www.tvtechnology.com/news/broadcast-cable-are-top-sources-for-us-news-consumption-study-finds>
- Bandura, A. (1982). Self-efficacy mechanism in human agency. *American Psychologist*, 37(2), 122.
- Bandura, A. (1986). The explanatory and predictive scope of self-efficacy theory. *Journal of Social and Clinical Psychology*, 4(3), 359-373.
- Bandura, A. (1993). Perceived self-efficacy in cognitive development and functioning. *Educational Psychologist*, 28(2), 117-148.
- Bandura, A., Freeman, W. H., & Lightsey, R. (1999). Self-efficacy: The exercise of control. *Journal of Cognitive Psychotherapy*, 13(2), 158-166.
- Barthel, M. (2019, July 23). 5 key takeaways about the state of the media in 2018. *Pew Research Center*. Retrieved March 28, 2021, from <https://www.pewresearch.org/fact-tank/2019/07/23/key-takeaways-state-of-the-news-media-2018/>.
- Barthel, M., Mitchell, A., Asare-Marfo, D., Kennedy, K., & Worden, K. (2020, December 10). Measuring news consumption in a digital era. *Pew Research Center*. Retrieved March 15, 2021, from <https://www.journalism.org/2020/12/08/measuring-news-consumption-in-a-digital-era/>.
- Bates, M. J. (1974). Speculations on the sociocultural context of public information provision in the seventies and beyond. In *Library and Information Service Needs of the Nation: Proceedings of a Conference on the Needs of Occupational, Ethnic, and Other Groups in the United States* (pp. 51-76).
- Bateson, M., Brilot, B., & Nettle, D. (2011). Anxiety: an evolutionary approach. *The Canadian Journal of Psychiatry*, 56(12), 707-715.
- Beck, A. T., Weissman, A., Lester, D., & Trexler, L. (1974). The measurement of pessimism: the hopelessness scale. *Journal of Consulting and Clinical Psychology*, 42(6), 861.
- Beesdo-Baum, K., Jenjahn, E., Höfler, M., Lueken, U., Becker, E. S., & Hoyer, J. (2012). Avoidance, safety behavior, and reassurance seeking in generalized anxiety disorder. *Depression and Anxiety*, 29(11), 948-957.
- Behar, E., Vescio, T. K., & Borkovec, T. D. (2005). The effects of suppressing thoughts and images about worrisome stimuli. *Behavior Therapy*, 36(3), 289-298.
- Bennett, S. E. (2000). Political apathy and avoidance of news media among generations X and Y: America's continuing problem. *Education for Civic Engagement in Democracy*:

- Service Learning and Other Promising Practices*, 9-28. Retrieved March 15, 2021, from <https://files.eric.ed.gov/fulltext/ED447065.pdf>
- Benton, J. (2020, September 21). Politics as a chronic stressor: News about politics bums you out and can make you feel ill - but it also makes you take action. *Nieman Lab*. Retrieved September 22, 2020, from <https://www.niemanlab.org/2020/09/politics-as-a-chronic-stressor-news-about-politics-bums-you-out-and-can-make-you-feel-ill-but-it-also-makes-you-take-action/>
- Bernard, L. C., Mills, M., Swenson, L., & Walsh, R. P. (2005). An evolutionary theory of human motivation. *Genetic, Social, And General Psychology Monographs*, 131(2), 129-184.
- Blekesaune, A., Elvestad, E., & Aalberg, T. (2012). Tuning out the world of news and current affairs—An empirical study of Europe’s disconnected citizens. *European Sociological Review*, 28(1), 110-126.
- Bode, L., Vraga, E. K., & Troller-Renfree, S. (2017). Skipping politics: Measuring avoidance of political content in social media. *Research & Politics*, 4(2), 1-7.
- Borkovec, T. D., Alcaine, O., & Behar, E. W. E. L. Y. N. (2004). Avoidance theory of worry and generalized anxiety disorder. *Generalized Anxiety Disorder: Advances in Research and Practice*, 2004.
- Boulianne, S. (2020). Twenty years of digital media effects on civic and political participation. *Communication Research*, 47(7), 947-966.
- Branch, J.L. (2001). Information seeking process of junior high school students: A case study of CD-ROM encyclopedia use. *School Libraries Worldwide*, 7(1) 11-27.
- Bronstein, J. (2014). The role of perceived self-efficacy in the information seeking behavior of library and information science students. *The Journal of Academic Librarianship*, 40(2), 101-106.
- Brooks, A. (2020, October 19). Reading too much political news is bad for your wellbeing. *The Atlantic*. Retrieved October 26, 2020, from <https://www.theatlantic.com/family/archive/2020/10/reading-too-much-political-news-bad-happiness/616651/>
- Burchell, B., & Shapiro, G. K. (2012). Measuring financial anxiety. *Journal of Neuroscience, Psychology, and Economics*. 5(2) 92–103.
- Carver, C. S. (1998). Resilience and thriving: Issues, models, and linkages. *Journal of Social Issues*, 54(2), 245-266.

- Case, D. O., Andrews, J. E., Johnson, J. D., & Allard, S. L. (2005). Avoiding versus seeking: the relationship of information seeking to avoidance, blunting, coping, dissonance, and related concepts. *Journal of the Medical Library Association*, 93(3), 353.
- Chaffee, S. H., & Schleuder, J. (1986). Measurement and effects of attention to media news. *Human Communication Research*, 13(1), 76-107.
- Chapman University's America's Top Fears 2019. (2019). *Chapman University*. Retrieved November 24, 2020, from https://www.chapman.edu/wilkinson/research-centers/babbie-center/_files/americas-top-fears-2019.pdf
- Chen, M., & Bargh, J. A. (1999). Consequences of automatic evaluation: Immediate behavioral predispositions to approach or avoid the stimulus. *Personality and Social Psychology Bulletin*, 25(2), 215-224.
- Chen, W., & Thorson, E. (2019). Perceived individual and societal values of news and paying for subscriptions. *Journalism*, 0(00) 1-21 Retrieved from https://journals.sagepub.com/doi/pdf/10.1177/1464884919847792?casa_token=-qkC_QA0C18AAAAA:9q2u53jsabPaV2tuotAozdYdOTfMfIWxmP-69TEj-SH2WosbHwANNVISMwBvLF2IDTWbrLYUsLOW
- Cho, J., Lee, H. E., & Kim, H. (2019). Effects of communication-oriented overload in mobile instant messaging on role stressors, burnout, and turnover intention in the workplace. *International Journal of Communication*, 13, 21
- Cohen, J. (1992). A power primer. *Psychological Bulletin*, 112(1), 155.
- Cosmides, L., & Tooby, J. (2013). Evolutionary psychology: New perspectives on cognition and motivation. *Annual Review Of Psychology*, 64, 201-229.
- Crawford, C., & Krebs, D. (Eds.). (2012). *Foundations of evolutionary psychology*. Psychology Press.
- Derryberry, D., & Reed, M. A. (1998). Anxiety and attentional focusing: Trait, state and hemispheric influences. *Personality and Individual Differences*, 25(4), 745–761. [https://doi.org/10.1016/S0191-8869\(98\)00117-2](https://doi.org/10.1016/S0191-8869(98)00117-2)
- Dervin, B. (2015). Dervin's Sense-Making Theory. In *Information seeking behavior and technology adoption: Theories and trends* (pp. 59-80). IGI Global.
- Dervin, B., Harlock, S., Atwood, R., & Garzona, C. (1980). The human side of information: An exploration in a health communication context. *Annals of the International Communication Association*, 4(1), 591-608.
- Diakopoulos, N., & Koliska, M. (2017). Algorithmic transparency in the news media. *Digital Journalism*, 5(7), 809-828.

- Diddi, A., & LaRose, R. (2006). Getting hooked on news: Uses and gratifications and the formation of news habits among college students in an Internet environment. *Journal of Broadcasting & Electronic Media*, 50(2), 193-210.
- Dillard, J. P., Plotnick, C. A., Godbold, L. C., Freimuth, V. S., & Edgar, T. (1996). The multiple affective outcomes of AIDS PSAs: Fear appeals do more than scare people. *Communication Research*, 23(1), 44-72.
- Dugas, M. J., & Koerner, N. (2005). Cognitive-Behavioral Treatment for Generalized Anxiety Disorder: Current Status and Future Directions. *Journal of Cognitive Psychotherapy*, 19(1), 61-81
- Dunbar, R., Lycett, J., & Barrett, L. (2005). *Evolutionary psychology: a beginner's guide*. Simon and Schuster.
- Edgerly, S. (2015). Red media, blue media, and purple media: News repertoires in the colorful media landscape. *Journal of Broadcasting & Electronic Media*, 59(1), 1-21.
- Edgerly, S., Thorson, K., Thorson, E., Vraga, E. K., & Bode, L. (2018). Do parents still model news consumption? Socializing news use among adolescents in a multi-device world. *New Media & Society*, 20(4), 1263-1281.
- Elliot, A. J. (ed.) (2008). *Handbook of approach and avoidance motivation*. New York: Psychology Press.
- Elliot, A. J., & Covington, M. V. (2001). Approach and avoidance motivation. *Educational Psychology Review*, 13(2), 73-92.
- Elvestad, E., Blekesaune, A., & Aalberg, T. (2014, July 22). The polarized news audience? A longitudinal study of news-seekers and news-avoiders in Europe. *A Longitudinal Study of News-Seekers and News-Avoiders in Europe*.
https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2469713
- Endler, N. S., & Kocovski, N. L. (2001). State and trait anxiety revisited. *Journal of Anxiety Disorders*, 15(3), 231-245.
- Erfanmanesh, M., Abrizah, A., & Karim, N. H. A. (2012). Development and validation of the Information Seeking Anxiety scale. *Malaysian Journal of Library & Information Science*, 17(1), 21-39.
- Esser, F., & Steppat, D. (2017). News Media Use: International Comparative Research. *The International Encyclopedia of Media Effects*.

- Feild, H. A., Allan, J., & Jones, R. (2010). Predicting searcher frustration. In *Proceedings of the 33rd international ACM SIGIR conference on Research and development in information retrieval* (34-41).
- Festinger, L. (1962). *A theory of cognitive dissonance* (Vol. 2). Stanford University Press.
- Fletcher, R., & Park, S. (2017). The impact of trust in the news media on online news consumption and participation. *Digital Journalism*, 5(10), 1281–1299.
- Fletcher, R., Kalogeropoulos, A., & Nielsen, R. K. (2020). News Avoidance in the UK Remains High as Lockdown Restrictions Are Eased. *Reuters Institute for the Study of Journalism*.
- Frost, J. (n.d.) How to Interpret Adjusted R-Squared and Predicted R-Squared in Regression Analysis. *Statistics by Jim*. <https://statisticsbyjim.com/regression/interpret-adjusted-r-squared-predicted-r-squared-regression/>
- Fu, S., Li, H., Liu, Y., Pirkkalainen, H., & Salo, M. (2020). Social media overload, exhaustion, and use discontinuance: examining the effects of information overload, system feature overload, and social overload. *Information Processing & Management*, 57(6), 1–15.
- Gamst-Klaussen, T., Steel, P., & Svartdal, F. (2019). Procrastination and personal finances: Exploring the roles of planning and financial self-efficacy. *Frontiers in Psychology*, 10, 775. <https://www.frontiersin.org/articles/10.3389/fpsyg.2019.00775/full>
- Gardner, D. (2008). *The science of fear: how the culture of fear manipulates your brain*. Penguin.
- Geise, S., Heck, A., & Panke, D. (2020). The effects of digital media images on political participation online: results of an eye-tracking experiment integrating individual perceptions of “photo news factors.” *Policy & Internet*. 1-32
<https://onlinelibrary.wiley.com/doi/pdfdirect/10.1002/poi3.235>
- Gil de Zúñiga, H., Weeks, B., & Ardèvol-Abreu, A. (2017). Effects of the news-finds-me perception in communication: Social media use implications for news seeking and learning about politics. *Journal of Computer-Mediated Communication*, 22(3), 105-123.
- Gilbert, P. (1998). Evolutionary psychopathology: Why isn't the mind designed better than it is?. *British Journal of Medical Psychology*, 71(4), 353-373.
- Gilbert, P. (2001). Evolutionary approaches to psychopathology: The role of natural defenses. *Australian & New Zealand Journal of Psychiatry*, 35(1), 17-27.
- Gliem, J. A., & Gliem, R. R. (2003). Calculating, interpreting, and reporting Cronbach's alpha reliability coefficient for Likert-type scales. *Midwest Research-to-Practice Conference in Adult, Continuing, and Community Education*.
<https://scholarworks.iupui.edu/bitstream/handle/1805/344/Gliem%20&%20Gliem.pdf?s..>

- Golman, R., Hagmann, D., & Loewenstein, G. (2016). Information Avoidance. *Behavioral & Experimental Economics eJournal*.
- Goodall, C. E., & Reed, P. (2013). Threat and efficacy uncertainty in news coverage about bed bugs as unique predictors of information seeking and avoidance: An extension of the EPPM. *Health Communication*, 28(1), 63-71.
- Gottfried, J. (2020, August 18). *Americans' news fatigue isn't going away – about two-thirds still feel worn out*. Pew Research Center. <https://www.pewresearch.org/fact-tank/2020/02/26/almost-seven-in-ten-americans-have-news-fatigue-more-among-republicans/>.
- Gramlich, J. (2017, April 27). How we studied interest in the Flint water crisis using Google search data. Retrieved from <https://www.pewresearch.org/fact-tank/2017/04/27/flint-watercrisis-study-qa/>
- Gray, T. (1747). *An ode on a distant prospect of Eton College* (p. 51). London: R. Dodsley and Sold.
- Grieco, E. (2020, August 18). Americans' main sources for political news vary by party and age. Retrieved October 26, 2020, from <https://www.pewresearch.org/fact-tank/2020/04/01/americans-main-sources-for-political-news-vary-by-party-and-age/>
- Griffin, R. J., Dunwoody, S., & Neuwirth, K. (1999). Proposed model of the relationship of risk information seeking and processing to the development of preventive behaviors. *Environmental Research*, 80(2), S230-S245.
- Hagen, I. (1994). Expectations and consumption patterns in TV news viewing. *Media, Culture & Society*, 16(3), 415-428.
- Hale, C. (1996). Fear of crime: A review of the literature. *International review of Victimology*, 4(2), 79-150.
- Harcup, T., & O'Neill, D. (2017). What is news? News values revisited (again). *Journalism Studies*, 18(12), 1470-1488.
- Hayes, A. F. (2017). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach*. Guilford publications.
- Hayton, J. C., Allen, D. G., & Scarpello, V. (2004). Factor retention decisions in exploratory factor analysis: A tutorial on parallel analysis. *Organizational Research Methods*, 7(2), 191-205.

- Hazard Owen, L. *More Americans are paying for online news - and those who do say they're unlikely to stop*. Nieman Lab. <https://www.niemanlab.org/2020/06/in-some-countries-like-the-u-s-people-really-will-pay-for-more-than-one-news-subscription/>.
- Heid, M. (2020, May 19). *Is Constantly Reading the News Bad For You?* <https://time.com/5125894/is-reading-news-bad-for-you/>.
- Hinkin, T. R. (1995). A review of scale development practices in the study of organizations. *Journal of Management*, 21(5), 967-988.
- Holton, A. E., & Chyi, H. I. (2012). News and the overloaded consumer: Factors influencing information overload among news consumers. *Cyberpsychology, behavior, and social networking*, 15(11), 619-624.
- Hong, H., & Oh, H. J. (2020). Utilizing bots for sustainable news business: Understanding users' perspectives of news bots in the age of social media. *Sustainability*, 12(16), 6515.
- Huang, E. (2009). The causes of youths' low news consumption and strategies for making youths happy news consumers. *Convergence*, 15(1), 105-122.
- Johnson, T. (2020, December 24). Cable networks see big gains in viewership during Tumultuous 2020. *Deadline.com*. <https://deadline.com/2020/12/ratings-cable-news-networks-2020-1234660751/>
- Johnston, W. M., & Davey, G. C. (1997). The psychological impact of negative T.V. news bulletins: The catastrophizing of personal worries. *British Journal of Psychology*, 88(1), 85-91.
- Joiner, T. E., Metalsky, G. I., Katz, J., & Beach, S. R. (1999). Depression and excessive reassurance-seeking. *Psychological Inquiry*, 10(3), 269-278.
- Jordan, K. D., & Okifuji, A. (2011). Anxiety disorders: differential diagnosis and their relationship to chronic pain. *Journal of Pain & Palliative Care Pharmacotherapy*, 25(3), 231-245.
- Harmon-Jones, E., Peterson, C. K., & Harmon-Jones, C. (2010). Anger, motivation, and asymmetrical frontal cortical activations. *International Handbook of Anger*, 61-78.
- Jurkowitz, M., Mitchell, A., Shearer, E. & Walker, M. (2020, August 18). *2. Americans are divided by party in the sources they turn to for political news*. Pew Research Center's Journalism Project. <https://www.journalism.org/2020/01/24/americans-are-divided-by-party-in-the-sources-they-turn-to-for-political-news/>.
- Kane, L., & Ashbaugh, A. R. (2017). Simple and parallel mediation: A tutorial exploring anxiety sensitivity, sensation seeking, and gender. *The Quantitative Methods for Psychology*, 13(3), 148-165.

- Karlsson, N., Loewenstein, G., & Seppi, D. (2009). The ostrich effect: Selective attention to information. *Journal of Risk and Uncertainty*, 38(2), 95-115.
- Katz, E. (1959). Mass communications research and the study of popular culture: An editorial note on a possible future for this journal. *Departmental Papers (ASC)*, 165.
- Katz, E., Blumler, J. G., & Gurevitch, M. (1973). Uses and gratifications research. *The Public Opinion Quarterly*, 37(4), 509-523.
- Kenrick, D. T., & Shiota, M. N. (2008). Approach and avoidance motivation (s): An evolutionary perspective. New York: Psychology Press.
- Kim, H. K., Ahn, J., Atkinson, L., & Kahlor, L. A. (2020). Effects of COVID-19 Misinformation on Information Seeking, Avoidance, and Processing: A Multicountry Comparative Study. *Science Communication*.
- Kim, S., & Han, J. (2020, October). Detecting Engagement Bots on Social Influencer Marketing. In *International Conference on Social Informatics* (pp. 124-136). Springer, Cham.
- Kizilbash, A. H., Vanderploeg, R. D., & Curtiss, G. (2002). The effects of depression and anxiety on memory performance. *Archives of Clinical Neuropsychology*, 17(1), 57-67.
- Knobloch-Westerwick, S. (2014). *Choice and preference in media use: Advances in selective exposure theory and research*. Routledge.
- Knobloch-Westerwick, S., Carpentier, F. D., Blumhoff, A., & Nickel, N. (2005). Selective exposure effects for positive and negative news: Testing the robustness of the informational utility model. *Journalism & Mass Communication Quarterly*, 82(1), 181-195.
- Koerner, N., & Dugas, M. J. (2006). *A Cognitive Model of Generalized Anxiety Disorder: The Role of Intolerance of Uncertainty*. In G. C. L. Davey & A. Wells (Eds.), *Worry and its psychological disorders: Theory, assessment and treatment* (p. 201–216). Wiley Publishing.
- Kormelink, T. G., & Meijer, I. C. (2018). What clicks actually mean: Exploring digital news user practices. *Journalism*, 19(5), 668-683.
- Kramer, A. D. (2012, May). The spread of emotion via Facebook. In *Proceedings of the SIGCHI conference on human factors in computing systems* (pp. 767-770).
- Ksiazek, T. B., Malthouse, E. C., & Webster, J. G. (2010). News-seekers and avoiders: Exploring patterns of total news consumption across media and the relationship to civic participation. *Journal of Broadcasting & Electronic Media*, 54(4), 551-568.

- Kwon, K. H., Shao, C., & Nah, S. (2021). Localized social media and civic life: Motivations, trust, and civic participation in local community contexts. *Journal of Information Technology & Politics*, 18(1), 55-69.
- Leahy, R. L. (2002). Pessimism and the evolution of negativity. *Journal of Cognitive Psychotherapy*, 16(3), 295-316.
- Leal, P. C., Goes, T. C., da Silva, L. C. F., & Teixeira-Silva, F. (2017). Trait vs. state anxiety in different threatening situations. *Trends in Psychiatry and Psychotherapy*, 39(3), 147-157.
- Lee, A. M. (2013). News audiences revisited: Theorizing the link between audience motivations and news consumption. *Journal of Broadcasting & Electronic Media*, 57(3), 300-317.
- Lee, A. M., Holton, A., & Chen, V. (2019). Unpacking overload: Examining the impact of content characteristics and news topics on news overload. *Journal of Applied Journalism & Media Studies*, 8(3), 273-290.
- Lee, S. (2020). Probing the mechanisms through which social media erodes political knowledge: the role of the news-finds-me perception. *Mass Communication and Society*, 23(6), 810-832.
- Lee, S. A., & Crunk, E. A. (2020). Fear and psychopathology during the COVID-19 crisis: neuroticism, hypochondriasis, reassurance-seeking, and coronaphobia as fear factors. *OMEGA-Journal of Death and Dying*, 0030222820949350.
- Levey, D. F., Gelernter, J., Polimanti, R., Zhou, H., Cheng, Z., Aslan, M., ... & Stein, M. B. (2020). Reproducible genetic risk loci for anxiety: results from ~ 200,000 participants in the Million Veteran Program. *American Journal of Psychiatry*, 177(3), 223-232.
- Lewin, K. (1935). *A dynamic theory of personality*. McGraw-Hill.
- Liu, M., & Wronski, L. (2018). Examining completion rates in web surveys via over 25,000 real-world surveys. *Social Science Computer Review*, 36(1), 116-124.
- Maksl, A., Ashley, S., & Craft, S. (2015). Measuring news media literacy. *Journal of Media Literacy Education*, 6(3), 29-45.
- Marshall, G. N., & Lang, E. L. (1990). Optimism, self-mastery, and symptoms of depression in women professionals. *Journal of Personality and Social Psychology*, 59, 132-139.
- Marteau, T. M., & Bekker, H. (1992). The development of a six-item short-form of the state scale of the Spielberger State-Trait Anxiety Inventory (STAI). *British Journal of Clinical Psychology*, 31(3), 301-306.
- Maslow, A. H. (1963). The need to know and the fear of knowing. *The Journal of General Psychology*, 68(1), 111-125.

- Mayo Clinic. (n.d.) Anxiety disorders. (2018, May 04). Retrieved October 29, 2020, from <https://www.mayoclinic.org/diseases-conditions/anxiety/symptoms-causes/syc-20350961>
- McLean, C. P., Asnaani, A., Litz, B. T., & Hofmann, S. G. (2011). Gender differences in anxiety disorders: prevalence, course of illness, comorbidity and burden of illness. *Journal Of Psychiatric Research*, 45(8), 1027-1035.
- Meijer, I. C., & Kormelink, T. G. (2020). *Changing News Use: Unchanged News Experiences?*. Routledge.
- Mellman, M. (2020, September 23). *Mellman: The folly in questions people can't answer*. The Hill. <https://thehill.com/opinion/campaign/517702-mellman-the-folly-in-questions-people-cant-answer>.
- Menchen-Trevino, E. (2012). *Partisans and Dropouts?: News Filtering in the Contemporary Media Environment* (Doctoral dissertation, Ph. D.), Northwestern University, Evanston, Illinois).
- Messing, S., & Westwood, S. J. (2014). Selective exposure in the age of social media: Endorsements trump partisan source affiliation when selecting news online. *Communication Research*, 41(8), 1042-1063.
- Mitchell, A., Jurkowitz, M., Baxter, O., & Sheaer, E. (2020, September 18). *Three months in, Many Americans See Exaggeration, conspiracy theories and partisanship IN COVID-19 News*. <https://www.journalism.org/2020/06/29/three-months-in-many-americans-see-exaggeration-conspiracy-theories-and-partisanship-in-covid-19-news/>.
- Mobbs, D., Hagan, C. C., Dalgleish, T., Silston, B., & Prévost, C. (2015). The ecology of human fear: survival optimization and the nervous system. *Frontiers in Neuroscience*, 9(55). <https://www.frontiersin.org/articles/10.3389/fnins.2015.00055/full>
- Mourão, R. R., Thorson, E., & Tunney, C. (2021). Do Partisans “Verify” News to Find Out the Truth or to Confirm Their Views? (Under Review) ICA, 2021.
- Mourão, R. R., Thorson, E., Chen, W., & Tham, S. M. (2018). Media repertoires and news trust during the early Trump administration. *Journalism Studies*, 19(13), 1945-1956.
- Nabi, R. L. (2003). Exploring the framing effects of emotion: Do discrete emotions differentially influence information accessibility, information seeking, and policy preference?. *Communication Research*, 30(2), 224-247.
- Narayan, B., Case, D. O., & Edwards, S. L. (2011). The role of information avoidance in everyday life information behaviors. *Proceedings of the American Society for Information Science and Technology*, 48(1), 1-9.

- Nekliudov, N. A., Blyuss, O., Cheung, K. Y., Petrou, L., Genuneit, J., Sushentsev, N., ... & Teufel, M. (2020). Excessive media consumption about COVID-19 is associated with increased state anxiety: Outcomes of a large online survey in Russia. *Journal of Medical Internet Research*, 22(9), e20955.
- Nes, L. S., & Segerstrom, S. C. (2006). Dispositional optimism and coping: A meta-analytic review. *Personality and Social Psychology Review*, 10(3), 235-251.
- Nesse, R. M. (1994). Fear and fitness: An evolutionary analysis of anxiety disorders. *Ethology and Sociobiology*, 15(5-6), 247-261.
- Nesse, R. M. (2005). Maladaptation and natural selection. *The Quarterly Review Of Biology*, 80(1), 62-70.
- Newman, N., Fletcher, R., Kalogeropoulos, A., & Nielsen, R. (2019). Reuters Institute Digital News Report 2019. *Reuters Institute for the Study of Journalism*.
https://reutersinstitute.politics.ox.ac.uk/sites/default/files/inline-files/DNR_2019_FINAL.pdf
- Newman, N., Fletcher, R., Kalogeropoulos, A., Levy, D. & Nielsen, R. (2018). Reuters Institute Digital News Report 2018. *Reuters Institute for the Study of Journalism*.
<http://media.digitalnewsreport.org/wp-content/uploads/2018/06/digital-news-report-2018.pdf>
- Newman, N., Fletcher, R., Kalogeropoulos, A., Levy, D. A., & Nielsen, R. K. (2017). Reuters Institute Digital News Report 2017. *Reuters Institute for the Study of Journalism*.
https://reutersinstitute.politics.ox.ac.uk/sites/default/files/Digital%20News%20Report%202017%20web_0.pdf
- Nielsen, R. K., Kalogeropoulos, A., & Fletcher, R. (2020). Most in the UK say news media have helped them respond to Covid-19, but a third say news coverage has made the crisis worse. *Oxford: Reuters Institute for the Study of Journalism*.
[https://reutersinstitute.politics.ox.ac.uk/most-uk-say-news-media-have-helped-them-respond-covid-19-third-say-news-coverage-has-made-crisis#:~:text=A%20majority%20\(56%25\)%20say,ten%20percentage%20points%20since%20April](https://reutersinstitute.politics.ox.ac.uk/most-uk-say-news-media-have-helped-them-respond-covid-19-third-say-news-coverage-has-made-crisis#:~:text=A%20majority%20(56%25)%20say,ten%20percentage%20points%20since%20April).
- Nielsen, R. K., & Sambrook, R. (2016). What is happening to television news?. *Digital news project, Reuters Institute*.
- NIH (n.d.) General anxiety disorder. When worry gets out of control.
<https://www.nimh.nih.gov/health/publications/generalized-anxiety-disorder-gad/index.shtml>

- Norton, A. (2020). Beware of 'Media Overload' During Coronavirus Crisis, Experts Say. *US News*, April 7. <https://www.usnews.com/news/health-news/articles/2020-04-07/beware-of-media-overload-during-coronavirus-crisis-experts-say>
- Öhman, A. (1993). *Fear and anxiety as emotional phenomena: Clinical phenomenology, evolutionary perspectives, and information-processing mechanisms*. In M. Lewis & J. M. Haviland (Eds.), *Handbook of Emotions* (p. 511–536). The Guilford Press.
- Osborne, J. W. (2015). What is rotating in exploratory factor analysis?. *Practical Assessment, Research, and Evaluation*, 20(1), 2.
- Palmer, R., & Toff, B. (2020). What Does it Take to Sustain a News Habit? The Role of Civic Duty Norms and a Connection to a "News Community" Among News Avoiders in the UK and Spain. *International Journal of Communication*, 14, 20. Retrieved from <https://ijoc.org/index.php/ijoc/article/view/12252>
- Palmgreen, P., & Rayburn, J. D. (1982). Gratifications sought and media exposure an expectancy value model. *Communication Research*, 9(4), 561-580.
- Park, C. S. (2019). Does too much news on social media discourage news seeking? Mediating role of news efficacy between perceived news overload and news avoidance on social media. *Social Media and Society*, 5(3), 1-12.
- Petersen, M. B. (2010). Distinct emotions, distinct domains: Anger, anxiety and perceptions of intentionality. *The Journal of Politics*, 72(2), 357-365.
- Pew Research Center. (2020, June 5). *Demographics of Social Media Users and Adoption in the United States*. Pew Research Center: Internet, Science & Tech. <https://www.pewresearch.org/internet/fact-sheet/social-media/>.
- Pinker, S. (2018). *Enlightenment now: The case for reason, science, humanism, and progress*. Penguin.
- Poindexter, P. (2010). *Women, men, and news: Divided and disconnected in the news media landscape*. Routledge.
- Popova, L. (2012). The extended parallel process model: Illuminating the gaps in research. *Health Education & Behavior*, 39(4), 455-473.
- Price, J. S. (2003). Evolutionary aspects of anxiety disorders. *Dialogues in Clinical Neuroscience*, 5(3), 223-236.
- Purves, K. L., Coleman, J. R., Meier, S. M., Rayner, C., Davis, K. A., Cheesman, R., ... & Eley, T. C. (2020). A major role for common genetic variation in anxiety disorders. *Molecular Psychiatry*, 25(12), 3292-3303.

- Reed, D. J. (2016). Coping with occupational stress: the role of optimism and coping flexibility. *Psychology Research and Behavior Management*, 9, 71-79.
- Rossiter, J. R. (2002): The C-OAR-SE procedure for scale development in marketing. *International Journal of Research in Marketing*, 19(4), 305–335.
- Rubin, A. M., & Perse, E. M. (1987). Audience activity and television news gratifications. *Communication Research*, 14(1), 58-84.
- Santaracchi, E., Sprugnoli, G., Tatti, E., Mencarelli, L., Neri, F., Momi, D., ... & Rossi, A. (2018). Brain functional connectivity correlates of coping styles. *Cognitive, Affective, & Behavioral Neuroscience*, 18(3), 495-508.
- Santos, J. R. A. (1999). Cronbach's alpha: A tool for assessing the reliability of scales. *Journal of Extension*, 37(2), 1-5.
- Savolainen, R. (1995). Everyday life information seeking: Approaching information seeking in the context of "way of life". *Library & Information Science Research*, 17(3), 259-294.
- Savolainen, R. (2005). Everyday life information seeking. *Encyclopedia of Library and Information Science*, 155-163.
- Savolainen, R. (2017). Information need as trigger and driver of information seeking: A conceptual analysis. *Journal of Information Management*, 69(1), 2-21.
- Scheier, M. F., Carver, C. S., & Bridges, M. W. (1994). Distinguishing optimism from neuroticism (and trait anxiety, self-mastery, and self-esteem): a reevaluation of the Life Orientation Test. *Journal of Personality and Social Psychology*, 67(6), 1063.
- Schimmack, U. (2005). Response latencies of pleasure and displeasure ratings: Further evidence for mixed feelings. *Cognition & Emotion*, 19(5), 671-691.
- Schröder, K. C. (2015). News media old and new: Fluctuating audiences, news repertoires and locations of consumption. *Journalism Studies*, 16(1), 60-78.
- Schröder, K. C. (2016, June 10). *The nature of news avoidance in a digital world*. <https://www.digitalnewsreport.org/essays/2016/nature-news-avoidance-digital-world/>.
- Schudson, M. (1997). *The sociology of news production. Social meanings of news*. W.W. Norton.
- Sege, C. T., Bradley, M. M., & Lang, P. J. (2018). Avoidance and escape: Defensive reactivity and trait anxiety. *Behaviour Research and Therapy*, 104, 62-68.
- Serrano-Puche, J. (2018). "News doesn't interest me": Exploring reasons for news avoidance in Spanish digital users. *CUICIID 2018*, 313.

- Sharot, T., & Sunstein, C. R. (2020). How people decide what they want to know. *Nature Human Behaviour*, 1-6.
- Shehata, A. (2016). News habits among adolescents: The influence of family communication on adolescents' news media use—evidence from a three-wave panel study. *Mass Communication and Society*, 19(6), 758-781.
- Shi, D., Maydeu-Olivares, A., & Rosseel, Y. (2020). Assessing fit in ordinal factor analysis models: SRMR vs. RMSEA. *Structural Equation Modeling: A Multidisciplinary Journal*, 27(1), 1-15.
- Shoemaker, P. J. (1996). Hardwired for news: Using biological and cultural evolution to explain the surveillance function. *Journal of Communication*, 46(3), 32-47.
- Shoemaker, P. J., & Cohen, A. A. (2012). Evolution and News. In *News Around the World* (pp. 17-32). Routledge.
- Sicherman, N., Loewenstein, G., Seppi, D. J., & Utkus, S. P. (2016). Financial attention. *The Review of Financial Studies*, 29(4), 863-897.
- Siebenhaar, K. U., Köther, A. K., & Alpers, G. W. (2020). Dealing with the COVID-19 infodemic: Distress by information, information avoidance, and compliance with preventive measures. *Frontiers in Psychology*, 11, 2981.
- Sivaramakrishnan, S., Srivastava, M., & Rastogi, A. (2017). Attitudinal factors, financial literacy, and stock market participation. *International Journal of Bank Marketing*, 35(5), 881-841.
- Skovsgaard, M., & Andersen, K. (2020). Conceptualizing news avoidance: Towards a shared understanding of different causes and potential solutions. *Journalism Studies*, 21(4), 459-476.
- Slater, M. D. (2007). Reinforcing spirals: The mutual influence of media selectivity and media effects and their impact on individual behavior and social identity. *Communication Theory*, 17(3), 281-303.
- So, J., Kuang, K., & Cho, H. (2016). Reexamining fear appeal models from cognitive appraisal theory and functional emotion theory perspectives. *Communication Monographs*, 83(1), 120-144.
- So, J., Kuang, K., & Cho, H. (2019). Information seeking upon exposure to risk messages: Predictors, outcomes, and mediating roles of health information seeking. *Communication Research*, 46(5), 663-687.
- Song, S., Yao, X., & Wen, N. (2020). What motivates Chinese consumers to avoid information about the COVID-19 pandemic?: The perspective of the stimulus-organism-response model. *Information Processing & Management*, 58(1), 102407.

- Soper, D. S. (2015). A-priori sample size calculator for structural equation models. URL: <http://www.danielsoper.com/statcalc3/calc.aspx>.
- Spielberger, C. D., Sydeman, S. J., Owen, A. E., & Marsh, B. J. (1999). *Measuring anxiety and anger with the State-Trait Anxiety Inventory (STAI) and the State-Trait Anger Expression Inventory (STAXI)*. Lawrence Erlbaum Associates Publishers.
- Spitzer, R. L., Kroenke, K., Williams, J. B., & Löwe, B. (2006). A brief measure for assessing generalized anxiety disorder: the GAD-7. *Archives of Internal Medicine*, 166(10), 1092-1097.
- Statistics How-To (n.d.). Regression Analysis: Step by Step Articles, Videos, Simple Definitions. <https://www.statisticshowto.com/probability-and-statistics/regression-analysis/>
- Stress in America 2020: Stress in the Time of COVID-19, Volume One. (n.d.). Retrieved October 30, 2020, from <https://www.apa.org/news/press/releases/stress/2020/report>
- Strömbäck, J., Djerf-Pierre, M., & Shehata, A. (2013). The dynamics of political interest and news media consumption: A longitudinal perspective. *International Journal of Public Opinion Research*, 25(4), 414–435.
- Strömbäck, J., Tsfati, Y., Boomgaarden, H., Damstra, A., Lindgren, E., Vliegenthart, R., & Lindholm, T. (2020). News media trust and its impact on media use: Toward a framework for future research. *Annals of the International Communication Association*, 44(2), 139-156.
- Stroud, N. J., & Lee, J. K. (2013). Perceptions of cable news credibility. *Mass Communication and Society*, 16(1), 67-88.
- Struijs, S. Y., Lamers, F., Vroling, M. S., Roelofs, K., Spinhoven, P., & Penninx, B. W. (2017). Approach and avoidance tendencies in depression and anxiety disorders. *Psychiatry Research*, 256, 475-481.
- Suls, J., & Fletcher, B. (1985). The relative efficacy of avoidant and nonavoidant coping strategies: a meta-analysis. *Health Psychology*, 4(3), 249.
- Sylvers, P., Lilienfeld, S. O., & LaPrairie, J. L. (2011). Differences between trait fear and trait anxiety: Implications for psychopathology. *Clinical Psychology Review*, 31(1), 122-137.
- Tabachnick, B. G., Fidell, L. S., & Ullman, J. B. (2007). *Using multivariate statistics* (Vol. 5, pp. 481-498). Boston, MA: Pearson.
- Tenenboim, O., & Cohen, A. A. (2015). What prompts users to click and comment: A longitudinal study of online news. *Journalism*, 16(2), 198-217.

- The Extended Parallel Processing Model, An HC3 Research Primer (2014). *Health Communication Capacity Collaborative*. Retrieved March 15, 2021, from <https://healthcommcapacity.org/hc3resources/extended-parallel-processing-model-hc3-research-primer/>
- Thorson, E., Tunney, C., & Kryston, K. (in review). An evolutionary approach to why people seek and avoid more information about negative news stories.
- Thorson, K., & Wells, C. (2016). Curated flows: A framework for mapping media exposure in the digital age. *Communication Theory*, 26(3), 309-328.
- Thurman, N., Lewis, S. C., & Kunert, J. (2019). Algorithms, Automation, and News. *Digital Journalism*, 7(8), 980-992.
- Toff, B., & Palmer, R. A. (2019). Explaining the gender gap in news avoidance: “News-is-for-men” perceptions and the burdens of caretaking. *Journalism Studies*, 20(11), 1563-1579.
- Tooby, J., & Cosmides, L. (2005). Conceptual foundations of evolutionary psychology. *The Handbook of Evolutionary Psychology*, 5-67.
- Tooby, J., & Cosmides, L. (2015). The theoretical foundations of evolutionary psychology. *The Handbook of Evolutionary Psychology*, 1-85.
- Tsfati, Y. (2010). Online news exposure and trust in the mainstream media: Exploring possible associations. *American Behavioral Scientist*, 54(1), 22-42.
- Tunney, C. (2020) Relationships with News in the Modern Socio-Media Ecology. *Mass Communication and Society Division Division/Interest Group: AEJMC, Annual Conference*, San Francisco, California. (virtual) August 2020.
- Tunney, C., Thorson, E., & Chen, W. (2021). Following and Avoiding Fear-Inducing News Topics: Fear Intensity, Perceived News Topic Importance, Self-Efficacy, and News Overload. *Journalism Studies*, 1-19.
- 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.
- UCLA Institute for Digital Research and Education (n.d.) Factor analysis, SPSS Annotated Output. Retrieved March 3, 2021 from. <https://stats.idre.ucla.edu/spss/output/factor-analysis/#:~:text=For%20orthogonal%20rotations%2C%20such%20as,linear%20combination%20of%20the%20variables.>
- Uhde, T. W., Cortese, B. M., & Vedeniapin, A. (2009). Anxiety and sleep problems: emerging concepts and theoretical treatment implications. *Current Psychiatry Reports*, 11(4), 269-276.

- Van den Bulck, J. (2006). Television news avoidance: Exploratory results from a one-year follow-up study. *Journal of Broadcasting & Electronic Media*, 50(2), 231-252.
- Wagner, M., & Morisi, D. (2019). Anxiety, Fear, and Political Decision Making. In *Oxford Research Encyclopedia of Politics*.
- Watson, A. (2020) Frequency of network news consumption in the U.S. 2020. Statista. <https://www.statista.com/statistics/946580/network-news-usage-frequency/>
- Weber, M. S., & Kosterich, A. (2018). Coding the News: The role of computer code in filtering and distributing news. *Digital Journalism*, 6(3), 310-329.
- Weinbrecht, A., Schulze, L., Boettcher, J., & Renneberg, B. (2016). Avoidant personality disorder: a current review. *Current Psychiatry Reports*, 18(3), 29.
- Weitman, B., & Essling, I. (2020, August 19). Revisited: Media Consumption during the Coronavirus Pandemic. *Comscore.com*. Retrieved September 27, 2020, from <https://www.comscore.com/Insights/Blog/Revisited-Media-Consumption-during-the-Coronavirus-Pandemic>
- Witte, K. (1994). Fear control and danger control: A test of the extended parallel process model (EPPM). *Communications Monographs*, 61(2), 113-134.
- Wollebæk, D., Karlsen, R., Steen-Johnsen, K., & Enjolras, B. (2019). Anger, fear, and echo chambers: The emotional basis for online behavior. *Social Media and Society*, 5(2), 1-14.
- Woolley, S. C., & Howard, P. N. (2016). Automation, algorithms, and politics| political communication, computational propaganda, and autonomous agents—Introduction. *International Journal of Communication*, 10, 9.
- Wurman, R. S. (2001). *Information Anxiety*. New York, Doubleday
- Yang, Z. J., & Kahlor, L. (2013). What, me worry? The role of affect in information seeking and avoidance. *Science Communication*, 35(2), 189-212.
- Yang, Z. J., Aloe, A. M., & Feeley, T. H. (2014). Risk information seeking and processing model: A meta-analysis. *Journal of Communication*, 64(1), 20-41.