Mitigating selective exposure to information by matching intervention messages to intrapersonal and interpersonal motivations

by

Lane Matthew Banks

B.S., University of Utah, 2020
M.S., Kansas State University, 2022

AN ABSTRACT OF A DISSERTATION

submitted in partial fulfillment of the requirements for the degree

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Abstract

Across two studies, this dissertation aimed to mitigate selective exposure to information. Selective exposure (i.e., people not being willing to be exposed to counterattitudinal opinions and information) is problematic because optimal decisions and interpersonal interactions require unbiased exposure to information (Jang, 2014; Johnston, 1996; Pinkley et al., 1995). Selective exposure is motivated by defense, accuracy, or impression management concerns (Hart et al., 2009; Hart et al., 2020; Moore et al., 2023). Study 1 targeted the intrapersonal motivations of selective exposure: defense (maintaining one's current attitude, belief, behavior, or self-concept), and accuracy (having a correct attitude/decision/judgment) through the use of theory-informed intervention messages. Results found that message frames, using cognitive/logical arguments, and advocating to *be unbiased*, why it is good to *consider the opposite*, and why looking at counterattitudinal information can enhance one's ability to defend their views (*inoculation*) mitigated selective exposure. However, the frames based on cognitive dissonance theory, that used emotional appeals, were not effective (*cognitive dissonance*, and *self-affirmation*). Study 2 investigated the interpersonal motivation of selective exposure: impression management. Results from Study 2 found that short intervention messages that told people they should *be open-minded*, that they could *be liked by being open-minded* and *be liked and influential by being open-minded* were effective at mitigating selective exposure. Furthermore, Study 2 included the personality variable of self-monitoring (Snyder, 1974), but the hypotheses were not supported. Selective exposure to information interferes with making good decisions, being able to defend one's views, and good interpersonal interactions. It is promising that the two research studies were able to identify message frames to persuade participants to be less selective to information.

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Chapter 1 - Introduction

"The human understanding, when it has once adopted an opinion, draws all things else to support and agree with it." – Francis Bacon (1620; Lord et al., 1979)

Dissertation Project Summary

This project aimed to address the problem of people not being willing to be exposed to opinions and information they disagree with (*selective exposure*). Selective exposure can result in disastrous decision-making (e.g., Bay of Pigs invasion; medical malpractice; false criminal convictions), poor interpersonal interactions (e.g., uninviting speakers to college campuses; cutting others off from speaking; unfriending on social networking sites), and hinder democratic processes (e.g., less legislation passed). This dissertation tested message frames that are rooted in theory to mitigate this selectivity. Research has established that messages are often more influential when they are *matched* to motivations or attributes of the participant (e.g., an emotionally laden message is more persuasive than a cognitive based message when presented to someone with an affective attitude-base; Teeny et al., 2021). Therefore, the present dissertation targeted three known motivations of selective exposure: defense (maintaining one's current attitude, belief, behavior, or self-concept), accuracy (having a correct attitude/decision/judgment), and impression management (managing how one comes across to others so that they are perceived favorably, i.e., motivated to be liked) to investigate which are effective at mitigating selectivity (Hart et al., 2020). Study 1 investigated **intrapersonal** (things that are within the individual) motivators: defense and accuracy. Study 2 investigated the **interpersonal** (dealing with other people; Moore et al., 2023) motivation of impression management, including the personality variable of self-monitoring (Snyder, 1974). The *self-*

monitoring (SM) scale measures how much people self-monitor and adjust the impression they are making on others.

Concerning **Study 1**, *Cognitive dissonance* (Festinger, 1957) is frequently cited as the main driver behind selective exposure when people are motivated to defend their attitudes. Cognitive dissonance theory (CDT) states that it is aversive to be exposed to information that is inconsistent with one's attitudes, beliefs, or behaviors. Once people are subjected to this dissonance, they are motivated to reduce it. One such way to reduce it is to engage in selective exposure practices. Therefore, a message frame based on dissonance theory told participants why it is uncomfortable, but not harmful, to be exposed to counterattitudinal information in order to persuade them to simply not believe their feelings about something are objective truth.

Additionally, another theory that has accounted for dissonance effects is *self-affirmation theory* (Steele, 1988). Self-affirmation theory studies have found that affirming the self (i.e., making positive attributes of the self salient), even in an unrelated way can reduce the discomfort and aversion that dissonance incurs. Therefore, affirming participants was thought to reduce the dissonance they would feel when exposed to counterattitudinal information, thereby reducing their selective exposure tendencies. This idea was tested in the *"self-affirmation"* message frame.

The last defensively motivated message frame, the "*inoculation message"* is based on inoculation theory (McGuire, 1961a). The inoculation frame informed participants that being exposed to the other side of an issue (opposed to their own position) can help them defend their current attitudes.

Other theories state that selectivity is occurring because people are motivated to be accurate (*confirmation bias*; Hart et al., 2009), or because it is easy (*cognitive economy model*;

Fischer et al., 2012). Thus, interventions were tested that addressed these explanations. The "*be unbiased"* message frame was used to investigate if merely telling people to *"not be biased"* would result in less selectivity (underlying theory: *cognitive economy*). The *"consider the opposite"* message frame argues that people often think it is less effort to just choose consistent information, however, it can often backfire and cause more effort to be expended when selectivity results in decision-making errors. The consider the opposite message frame utilizes the accuracy motivation and cognitive economy model of selectivity as the underlying theory and rationale.

Study 2 investigated ways of mitigating selective exposure by targeting the interpersonal motivation of impression management. Further, some people are more predisposed to be concerned with the impression others have of them. These people are high in the personality trait *self-monitoring* (Snyder, 1974). Therefore, message interventions have been crafted to target those who are both high and low in self-monitoring.

Selective exposure to information and why it's a bad thing

This section will address some consequences of selective exposure to information, followed by an exploration of theories that explain why people are selective. *Selective exposure* is the tendency to seek out information consistent with attitudes and decisions, and avoid inconsistent information (Lazarsfeld et al., 1944; Mills, 1968; Frey, 1986; Sweeny et al., 2010; Festinger, 1957). For example, a voter seeks out news that supports their preferred candidate, while avoiding information that is critical of said candidate (Lazarsfeld et al., 1944). Numerous studies have demonstrated selective exposure effects (Brannon et al., 2007; Brock, 1965; Burghartswieser & Rothmund, 2021; Canon, 1964; Cartwright, 1949; Cohen et al., 1959; Garrett et al., 2013; Fischer et al., 2008; Freedman & Sears, 1963; Hart et al., 2009; Kroon et al., 2022; Lazarsfeld et al., 1944; Mills et al., 1959; Mills, 1965; Lowin, 1967; Rodriguez et al., 2017; Steppat et al., 2022; Wamsley, 2022). Although the earlier quote by Francis Bacon (1620) mentioned the idea of selectivity, the term: *selective exposure* comes from Festinger's (1957) *cognitive dissonance theory* (this theory will be explained shortly, after some examples of selective exposure).

Military mistakes resulting from selectivity:

In 2003, the United States invaded Iraq on grounds that Iraq possessed weapons of mass destruction (WMD's). However, a report the next year revealed that the U.S. never had any compelling intel, nor did subsequent searching result in any sign of the purported weapons (Report on the U.S. Intelligence Community's Prewar Intelligence Assessments on Iraq, 2004). Evidence suggests that then U.S. President, George W. Bush, and his advisors had a strong preference for information that supported their theories, while minimizing any contrary information (Fischer & Greitemeyer, 2010). This launched U.S. military involvement in the

Middle East that is still ongoing as of 2025. Similarly, the disastrous 1961 'Bay of Pigs invasion' in Cuba was the result of a preference for confirmatory information by U.S. President John F. Kennedy and his advisors. The United States' Central Intelligence Agency (CIA), wary of Fidel Castro's hold of Cuba, secretly trained guerrilla warriors in an attempt to regain control. In short, the operation was a disaster. Poor planning, along with terrible execution led to a botched invasion that surrendered within hours to Castro's superior force of 20,000 troops. An analysis of audio-tape recordings from closed-door discussions revealed that those who supported the invasion were given significantly more time to speak than those who objected to it (John F. Kennedy Presidential Library Staff, 2024; Janis, 1972, 1982).

Negative health consequences resulting from selectivity:

Another area that can have poor outcomes when decision-makers seek out attitudinally consistent information, while downplaying inconsistent information, is health (Croskerry, 2013). For example, if during flu season a patient comes into the clinic with symptoms of the flu, the doctor might just assume the patient has the flu and prescribe medication for it without doing testing for other illnesses that could have the same symptoms. The prevalence of diagnostic error has been estimated to be ~15% (Elstein, 1995). This is alarming because incorrect diagnoses can lead to medical malpractice, which can sometimes lead to death. Many deaths resulting from medical practice are partially caused by cognitive decision-making errors, rather than a lack of knowledge or skills (Berner & Graber, 2008; Croskerry, 2015; Croskerry et al., 2013a, 2013b).

Further, patients demonstrate selectivity regarding their own health risks (Fox & Duggan, 2013; Fox & Jones, 2009; Lo & Parham, 2010; Ropka et al., 2006; Sassenberg & Greving, 2014). Ropka et al. (2006) found that women in their study were generally unwilling to learn about their genetic predisposition for developing breast cancer, a concerning finding due to the

benefits of early detection (i.e. more successful treatment). Greving et al. (2015) found that participants who were given a threatening fake diagnosis within the confines of an experimental study, were more likely to click on positive article links about the diagnosis (e.g., it leads to a healthier diet; the disease is less common than it is claimed to be), rather than articles that warned of negative consequences (e.g., increased sensitivity; weakened immune response). People were less likely to read a pamphlet about preventing a disease if they perceived the information as stigmatizing (Earl et al., 2015). People often make decisions about whether to see the doctor, or which medications to take after searching on the internet (Fox & Duggan, 2013; Fox & Jones, 2009). This selectivity can lead people to be overoptimistic about their health (Sassenberg & Greving, 2014). This can result in medical decisions that unduly harm people (Lo & Parham, 2010).

Criminal conviction mistakes resulting from selectivity:

Due to the long-lasting consequences of criminal sentencing, decision-making researchers have taken a great interest at investigating the process through which criminals are convicted (Rosmo & Pollock, 2019). This is especially troublesome when prosecutors are so sure that a truly innocent suspect is guilty that they engage in faulty decision-making that increases the likelihood of a guilty verdict. One such observed phenomenon within legal fields is known as tunnel vision (Findley & Scott, 2006; Martin, 2002). Tunnel vision has been described as the tendency to: *"focus on a suspect, select and filter the evidence that will 'build a case' for conviction, while ignoring or suppressing evidence that points away from guilt."* (Martin, 2002). Later analyses of these erroneous convictions found that investigators ignored or minimized evidence that did not support conviction (Rassin, 2010; Rosmo & Pollock, 2019; Rossmo, 2021). In fact, half of the 50 mistaken-verdict cases that Rosmo and Pollock (2019) analyzed, revealed

that the erroneous verdict was reached by investigators who had demonstrated an undue preference for information supporting their views. Between the years 1990-2006, hundreds of wrongfully convicted people were exonerated through DNA evidence (Findley & Scott, 2006). This is especially worrisome, because only a small fraction of criminal cases have DNA evidence. Therefore, many people who are erroneously convicted have little hope for justice. For other articles on selective exposure within legal fields see (Dumas & Esnard, 2019; Esnard & Dumas, 2019; Schmittat & Englich, 2016).

Subpar interpersonal interactions resulting from selectivity:

Selective exposure can lead to a refusal to interact with those who hold counterattitudinal views, which can result in increased *outgroup polarization* (Del Vicario et al., 2017; Teeny & Petty, 2022). *Outgroups* are groups of people who are in a group that is different from the one that the person belongs to. Groups can be formed about anything, such as: race, hair color, political identity, height, age, music taste. For example, if you like classical music, then you would be in the *ingroup* for those who also like classical music. Conversely, people who prefer a different genre of music (one that you do not like), such as rock, belong in your outgroup. *Polarization* refers to two or more groups whose views towards each other become increasingly negative or extreme. Therefore, *outgroup polarization* refers to an increasingly negative sentiment towards outgroups and people within the outgroup. Del Vicario and associates (2017) state that the greater the emotional distance that separates groups, the greater the resulting polarization.

A recent study (Teeny & Petty, 2022) found that people assumed others to be closed-minded if they held attitudes that were incompatible with their own. This led to a reduced likelihood of interacting with them. This is unfortunate because when people with differing

viewpoints interact, it has been shown to reduce polarization (Broockman & Kalla, 2016; Cortland et al., 2017; Pons, 2018; Walton & Wilson, 2018). Furthermore, people are unwilling to engage in constructive disagreements, instead preferring to silence the other side (Lukianoff & Haidt, 2018) by cutting them off (Dragon & Kossowska, 2019). Selective exposure on social media can lead to unfriending 'friends' who post, engage with, or endorse counterattitudinal content (John & Gal, 2018; Kim et al., 2021; Neely, 2021, 2023; Zhu & Skoric, 2021). Moreover, people on social media sites have exhibited selective exposure tendencies as they seek for information that supports their attitudes, while rejecting unsupportive information (Quattrociocchi et al., 2016). This leads to the formation of *echo-chambers* (i.e., people are surrounded by like-minded others who 'echo' back to them their own viewpoints while minimizing exposure of new ideas; see Garrett, 2009a; Hahn et al., 2015; Iyengar & Hahn, 2009; Quattrociocchi et al., 2016; Stroud, 2008; Sunstein, 2001, 2017). Furthermore, recent research (Moore et al., 2023) found that observers rated an outgroup member as more trustworthy if the outgroup member selected information from the observer's ingroup. In other words, the outgroup member was selecting counterattitudinal information, and receiving an interpersonal benefit of being regarded favorably. Contrastingly, those people who selected less outgroup information (i.e., counterattitudinal), were regarded as less trustworthy by outgroup members than those who primarily selected ingroup information (i.e., proattitudinal). Additionally, this extends to situations in which both people are from the same ingroup. Specifically, in experiment 4, participants were asked to choose a collaboration partner, and were informed about the information selection decisions that the potential partner had made. Participants preferred collaboration partners who had mostly selected ingroup information, but not exclusively ingroup information (i.e, selecting 4 out of 5 pieces of ingroup information is preferable over selecting 5

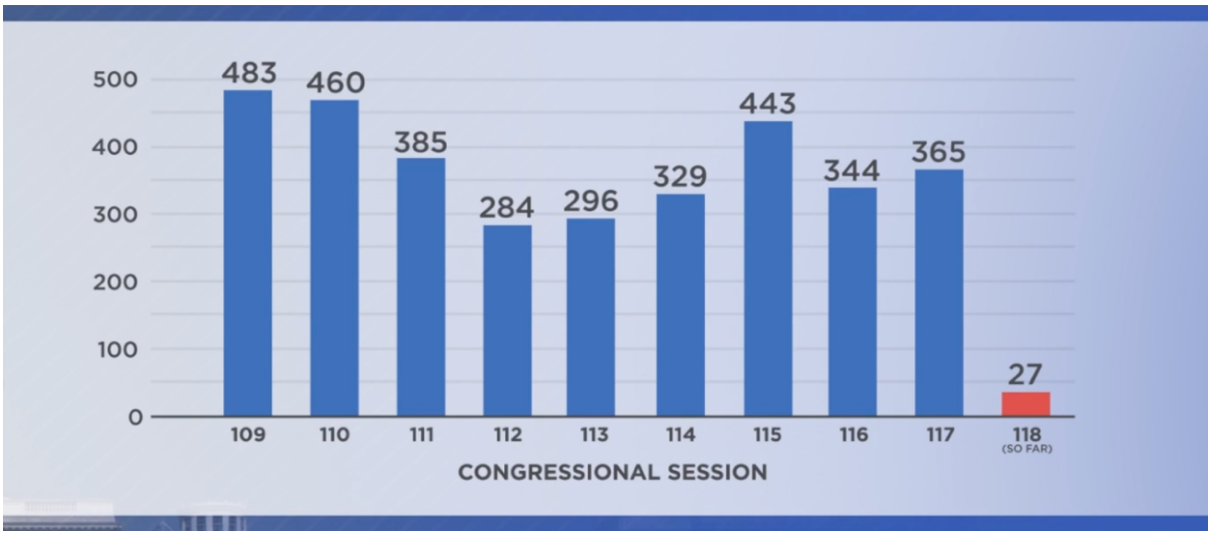
out of 5). Similar results were obtained from a series of six experiments by Heltzel and Laurin (2021) who found that people liked ingroup members who sought to understand those endorsing the other side of an issue (i.e., outgroup) more than those who avoided this counterattitudinal information. In summary, both studies (Heltzel & Laurin, 2021; Moore et al.., 2023) found that ingroup members favor ingroup members more when they consume some outgroup information.

This selectivity is hurting people's interpersonal interactions because people tend to like those who are more open-minded (McCrae & Costa, 1997). Ultimately, when people are viewed as closed off, others who hold counterattitudinal positions are less willing to engage with them (Teeny & Petty, 2022).

Democratic polarization resulting from selectivity:

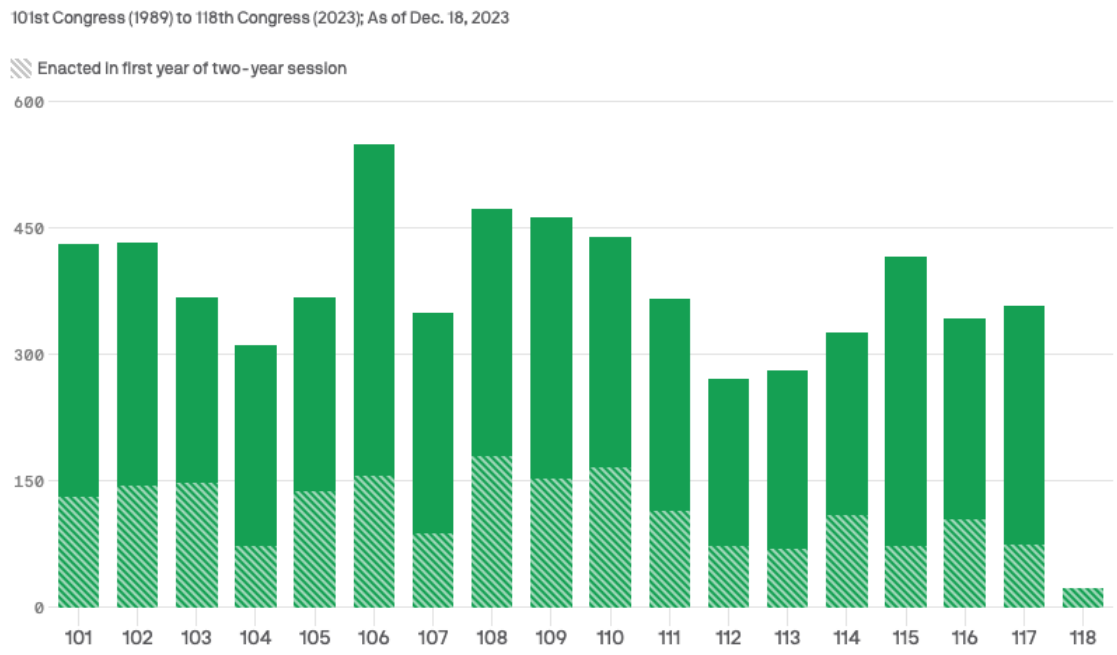
The political polarization problem has been framed as one of the greatest societal threats (Finkel et al., 2020; Teeny & Petty, 2022). It was recently stated that out-group hate now supersedes ingroup love (Finkel et al., 2020). Selective exposure contributes to polarization because in political arenas it is often necessary to hear messages that differ from one's current attitudes, and sometimes concede some ground to them (i.e., cooperation and compromise). As people become increasingly unwilling to engage with others, the ideological divide increases. In fact, numerous research studies have demonstrated that interacting with others in a non-judgmental, or cooperative, way is an effective way to improve intergroup interactions (Allport, 1954; Kalla & Broockman, 2021; Yeomans et al., 2020; also see Robbers Cave study, Sherif et al., 1961). Therefore, this reluctance to interact with those who hold counterattitudinal positions has been framed as one of the main obstacles in bipartisan engagement (Akhtar & Wheeler, 2016; Bechler et al., 2020).

Further, avoiding contact with counterattitudinal political information is worse for democracy than solely seeking consistent information (Garrett, 2009b). People that seek out attitudinally-consistent information may do so out of habit, or ease, but if they happen across information that contradicts their views may still look at it. However, people who are avoidant of counterattitudinal information may engage in problematic behaviors to avoid or terminate exposure (e.g., cutting others off when they are speaking). A Pew Research Center (2018) poll found that political polarization is at an all-time high as people are becoming increasingly more resistant to discuss politics with people whom they disagree with (also see Teeny & Petty, 2022). This polarization goes up from the everyday citizen to legislators. Indeed, Congress has passed less legislation now than at any prior time, suggesting an unwillingness to compromise on policy (Govtrack.US, 2023). The 118th congressional session (2023-2024) is currently tracking to become the least effective congress yet (Govtrack.US).



Note. Data from Dec 2023 shows only 27 bills passed, it is now up to 62 as of May 2024 (Govtrack.US).

Figure 1. Legislation Enacted by 118th Congress (Dec, 2023)



Note. Data: Quorum; Chart: Simran Parwani/Axios

Figure 2. Bills Enacted by 118th Congress (Dec, 2023)

A meta-analysis on selective exposure found that people are most selective when it comes to political topics, as opposed to more benign topics like shopping (Hart et al., 2009). Consistent with these findings, an eye tracking study investigating selective exposure and selective avoidance found evidence that people selectively avoid political ads if they are from a different political party than their own (Schmuck et al., 2020). This is problematic behavior because for a democracy to be well-functioning, citizens should be consuming information from various viewpoints (Cohen, 1997; Mutz & Martin, 2001). One worrying claim by Mutz and Martin (2001) is that people's exposure to ideologically inconsistent (i.e., counterattitudinal) information is inversely related to the degree that they can control their exposure. Indeed, a recent article about information on the internet found that the ability to customize information channels hinders beneficial exposure to the other side of issues (Dylko et al., 2017). It is,

therefore, plausible that this increasing customizability, and consequent decreased *cross-cutting exposure* (i.e., looking at information across the political aisle), is partially to blame for the growing polarization problem. In relation to political attitudes, it is undesirable for attitudes to be polarized in a well-functioning democracy (Stroud, 2010). It is therefore best to have frequent exposure to challenging information, which increases tolerance, and leads to better policy outcomes (Mutz, 2002, 2006).

In conclusion, the earlier cited problems: military mistakes, negative health consequences, subpar interpersonal interactions, and democratic polarization, are just a small sampling of the varied issues that can arise from selectivity. Selective exposure has also been documented within controversial science issues (Jang, 2014), personal decision-making (Jonas et al., 2001), stereotypes (Johnston, 1996), business (Pinkley et al., 1995), among other domains (Hart et al., 2009; for a review on knowledge resistance see Strömbäck et al., 2022). Many of the cited studies state that these issues could be mitigated if people engaged in more counterattitudinal information consumption. To lay the groundwork for experimental message frames that aim to mitigate selective exposure, theories of selective exposure will now be presented.

Theories that Explain the Motivations of Selective Exposure: Defense, Accuracy, and Impression Management

This section will give an overview of some common explanations for selective exposure. However, this section is not intended as an exhaustive review of the literature. More will be said regarding these theories in the literature review sections for Study 1 (Chapter 2) and Study 2 (Chapter 3). Overall, the following theories will present evidence that people engage in selectivity for three main reasons/motivations: defense motivations, accuracy motivations, and

impression management motivations (Chaiken et al., 1989; Chaiken et al., 1996; Hart et al., 2020; Hart et al., 2009; Moore et al., 2023).

Hart and colleagues (2009), in a meta-analysis of 91 studies on selective exposure, categorized moderators of selective exposure under either an *accuracy motivation* or a *defense motivation* (Kunda, 1990). That is, people are either motivated to hold correct attitudes (see Elaboration Likelihood Model; Petty & Cacioppo, 1986), or to be validated in their current beliefs (defense motivation, Cognitive dissonance theory by Festinger, 1957). *Impression management* was also mentioned as one of the motivations (Chaiken et al., 1989; Hart et al., 2009), however, there had not been enough studies to warrant inclusion in the meta-analysis. Note that the first two motivations, defense and accuracy are **intrapersonal** (things that are within the individual), whereas the last motivation, impression management, is **interpersonal** (dealing with other people; Moore et al., 2023). According to the results of the selective exposure meta-analysis (Hart et al., 2009), a moderate effect for selective exposure ($d = 0.36$) was observed. Specifically, accuracy motivations accounted for 7% of the variance in selective exposure, and defense motivations accounted for 13%, indicating that people are almost twice as likely to want to be validated in their current beliefs than to be correct (Hart et al., 2009; for another review on selective exposure see Smith et al., 2008).

Most selective exposure studies have found their results through the typical selective exposure paradigm (Hart et al., 2009). In this paradigm participants report their attitude on something, then they are presented with options that are either proattitudinal or counterattitudinal (some studies include a third, neutral option). Then the participant is asked to indicate which options they would be interested in viewing. For example, a participant is asked to report their attitude about abortion. Participants are then presented with six article titles: three pro-life, three

pro-choice, and are asked to indicate which two they would most like to read. The extent to which participants select proattitudinal articles (i.e., articles that endorse their reported attitude) would indicate their level of selective exposure. In this example, if participants were to select proattitudinal articles which supported their views, then they would have a higher selective exposure score. Conversely, selecting counterattitudinal articles would result in a low selective exposure score. An alternative method to measure selective exposure is to have participants indicate how desirable it would be for them to read each of the articles rather than asking them to choose between articles (Brannon et al., 2007).

Defense motivations for selective exposure:

One of the most prominent results from the meta-analysis on selective exposure found that certain domains inspire defensive reactions (i.e., politics and religion; Hart et al., 2009). These tend to elicit more defensive motivations than benign topics (e.g., shopping). This is noteworthy, because political topics are partly responsible for some of the earlier highlighted problems in society today (i.e., interrupting others in conversation; unfriending on social media; reduced partisan engagement). Indeed, the first usage of the term *selective exposure* came from Lazarsfeld et al. (1944) who observed that voters had a marked preference for information that supported their political predispositions. Specifically, Lazarsfeld et al. referred to this phenomenon as a: *"general law which pervades the whole field of communication research. Exposure is always selective; in other words, a positive relationship exists between people's opinions and what they choose to listen to or to read"* (Lazarsfeld et al., 1944, p. 164). However, there was not a really compelling explanation as to why people are selective until Leon Festinger (1957, 1964) introduced *cognitive dissonance theory.* Dissonance is a feeling of discomfort that people experience when they have conflicting cognitions (e.g., I binge drink alcohol, but

drinking in excess is bad for me). Therefore, people are motivated to seek out consistent information or avoid inconsistent information (with their attitudes or behaviors) to reduce or avoid dissonance, thereby restoring or maintaining cognitive equilibrium (Festinger, 1957; Frey, 1981a, 1981b, 1986; Hart et al., 2009; Moore et al., 2023). Note that cognitive dissonance theory only applies as an explanation of selective exposure under conditions when a person is motivated to defend their attitude.

Research by Steele (1988) in what he dubbed *Self-Affirmation theory* found that dissonance effects disappear when participants are affirmed in some way regarding the self. As Heine and Lehman (1997) clearly put: *"a positive thought about oneself seems to disarm other unrelated threats to the self."* For example, if a person is presented with threatening health information about their excessive drinking behaviors, but first they are primed to consider their most important value, then this would affirm their self-concept and they would not need to avoid information about the ill effects of drinking to maintain cognitive harmony (Klein & Harris, 2009). As this example demonstrates, affirmations can be unrelated to the current situation and still be effective at mitigating the effects that dissonance typically evokes (Heine & Lehman, 1997; Klein & Harris, 2009; Steele, 1988). The affirmation "shuts off" dissonance, therefore people do not engage in dissonance reducing strategies (dissonance reducing strategies will be discussed in the literature review for study 1). Self-affirmation theory will form the backbone of one of the message frames (in addition to dissonance theory) in study 1 as it is likely that when participants are affirmed regarding the self, they will be less likely to be selective due to the absence of dissonance. Therefore, these ideas will be discussed further in the introduction for study 1 found in Chapter 2.

Another defensively motivated theory is *inoculation*, that people can protect their attitudes from persuasion attempts. McGuire (1961a) presented *inoculation theory* as an explanation for why people who are defensively motivated might engage with counterattitudinal information. Inoculation theory posits that people can protect their attitudes through the same mechanisms that people learn to defend themselves from a disease. Specifically, by being exposed to the thing the person wants to defend against so that they can learn to resist it. For example, being injected with a small amount of the chicken pox virus helps train the body how to fight against it without overwhelming the immune system. Later, when the body is exposed to chicken pox, it is able to successfully defend itself against the virus. Inoculation theory will later be discussed as a possible way to mitigate selectivity by boosting people's ability to defend their views (McGuire, 1961a). Indeed, one study found that the more participants were confident in their ability to defend their views, the more they were willing to engage with counterattitudinal information (Albarracín & Mitchell, 2004).

Accuracy motivations for selective exposure:

Accuracy motivations, as the term implies, occur when people are interested in reaching the correct and/or best result (Hart et al., 2009). Two theories relating to accuracy motivation will be introduced here in minimal detail and then be explained more fully in the literature review for study 1 found in Chapter 2. These theories are the *confirmation bias* (Nickerson, 1999), and *cognitive economy model* (Fischer et al., 2012). Unfortunately, it is frequently the case that people are partial towards attitudinally consistent information even when they are motivated to reach an accurate decision or judgment. However, disregarding attitudinally-inconsistent information can cause decision-making errors as earlier discussed (see section: Selective exposure to information and why it's a bad thing). This undue preference for

attitudinally-consistent information while motivated to be accurate is known as the *confirmation bias* (Nickerson, 1999).

Fortunately, one thing that has been helpful to persuade people to look at more information when they are motivated to be accurate is to encourage the "*consider the opposite"* strategy (Lord et al., 1984; Whitt et al., 2023). The *consider the opposite* strategy is a disconfirmatory approach in which the person seeks information that would disconfirm their attitude, rather than the normal way of seeking confirmatory information. Alternatively, *the cognitive economy model* posits people are selective in order to conserve precious mental resources (Fischer et al., 2012). Given that this proattitudinal preference is not motivationally driven, simply asking people to *be unbiased* could be effective at encouraging them to put more effort into engaging with counterattitudinal information. Message frames in study 1 will investigate these ideas further and will be described in chapter 2.

Impression management motivations for selective exposure:

The impression management motivation (Chaiken et al., 1989; Hart et al., 2009; Hart et al., 2020) has been explored as a driver of selective exposure. Specifically, that people selectively expose themselves to information when doing so helps them attain relational goals, such as being perceived favorably (e.g., open minded; well-informed; credible). Impression motivation has been defined as: *"the desire to express attitudes and beliefs that will address the specific interpersonal goals arising within different social contexts"* (Chaiken et al., 1996; p. 563). One such goal is to get along with others, therefore, people who are impression-management motivated may use the heuristic *go along to get along* and change their reported attitudes to match those of their partner (Chen et al., 1996; Cialdini et al., 1976; McFarland et al., 1984; Tetlock, 1985). Vital to knowing which attitudes and beliefs to express is to first learn

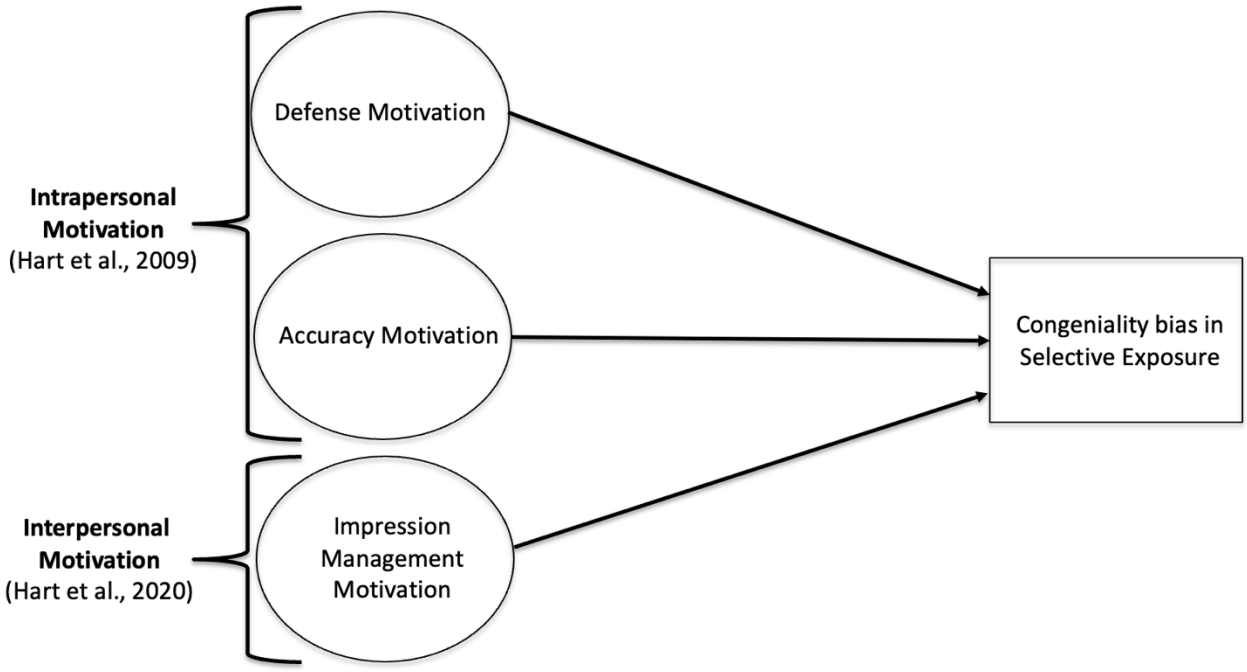
some of the information that the other person will be expressing. Therefore, impression management goals can moderate people's engagement with information (Adams et al., 2018; Hart et al., 2020). The implications of impression management for selective exposure will be examined in study 2 and described in more detail in chapter 3.

In conclusion, the present theories provide the rationale behind the message frames in this dissertation. To explain this rationale, the subsequent sections will summarize literature about selective exposure effects from all three motivation perspectives: defense, accuracy, and impression management.

Summary of the Selective Exposure Motivations:

As earlier established, three main motivations of selective exposure have emerged through decades of research: defense, accuracy, and impression management (see Chaiken et al., 1989; Hart et al., 2020; Hart et al., 2009; Moore et al., 2023). Moreover, according to a recent article by Moore and colleagues (2023), drivers of selective exposure can be categorized as either interpersonal or intrapersonal. The accuracy and defense motivations are "intrapersonal" because they have to do with cognitions within a person. However, the impression management motivation is concerned with others, therefore, it is called "interpersonal". To visualize these distinctions, the current dissertation has added the impression management motivation to Hart et al.'s (2009) model of selective exposure (see **Figure 3**). Note that figure 3 uses the term *"congeniality bias"* which is simply stating that people prefer exposure to that which supports their views (Hart et al., 2009). Furthermore, this figure categorizes the accuracy and defense motivations as intrapersonal, and the impression management motivation as interpersonal. These distinctions are consistent with the framework and terminology from Moore et al.'s (2023) research study. The current dissertation tested these two drivers of selective exposure

motivations: Study 1 targeted the intrapersonal, and Study 2 interpersonal. These motivations and moderators of selective exposure will be discussed in more detail in the literature reviews for study 1 (Chapter 2) and study 2 (Chapter 3).



Note. Figure 3 is adapted from a figure in Hart et al. (2009), with conceptual contributions from Hart et al. (2020) regarding the *impression management motivation* and Moore et al. (2023) regarding the *intrapersonal/interpersonal* terminology.

Figure 3. Motivations of Selective Exposure

This concludes the introduction to the accuracy and defense motivations of selective exposure, however, there is an individual difference variable related to people's tendency to engage in impression management that has not yet been looked at in a selective exposure context. Some people in particular are very concerned with how they come across to others, and therefore more likely to manage the impression they make on others, these people are higher in

self-monitoring (Snyder, 1974). The *self-monitoring* (SM) individual difference variable measures how much people self-monitor the impression they are making on others (Snyder 1974; Snyder & Gangestad, 1986). The 18-item self-monitoring scale measures the degree to which people *"can and do observe and control their expressive behavior and self-presentation"* (Snyder & Gangestad, 1986, p. 125). Given its relevance to impression management, more will be discussed about self-monitoring in the overview for study 2 found in Chapter 3.

Current Research

Although the issues accompanying selective exposure have been well-documented (Del Vicario et al., 2017; Garrett, 2009b; Hart et al., 2009; Hart et al., 2020; Moore et al., 2023; Teeny & Petty, 2022; Strömbäck et al., 2022; Whitt et al., 2023), there have not been many empirically tested techniques that successfully boost exposure to attitudinally-inconsistent information. Consequently, several researchers have called for future researchers to identify more methods for mitigating selectivity, especially pertaining to the impression management motivation (Hart et al., 2020; Whitt et al., 2023). Therefore, the current dissertation utilizes various approaches towards mitigating selective exposure. Specifically, message frames targeted the defense, accuracy, and impression management motivations, which have each been identified as three main motivations behind selective exposure (Chaiken et al., 1989; Hart et al., 2009; Hart et al., 2020; Whitt et al., 2023).

Further, prior studies have demonstrated that messages can be more persuasive when matched to participant traits/motivations/attitude base (e.g., affective-cognitive base; Clarkson et al., 2011; Ng et al., 2023; central and peripheral cues; Petty et al., 1983; matching to their moral foundation; Feinberg & Willer, 2015; personality traits; Hirsh et al., 2012; tailoring to one's extraversion or introversion; Wheeler et al., 2005; political identity; Kim & Kim, 2019; for a

review on matching effects that includes the personality trait s*elf-monitoring* see Teeny et al., 2021). Moreover, a recent study investigated matching effects related to the Covid-19 lockdowns in Italy and found that matched messages were particularly persuasive (Giammusso et al., 2022). One reason why the matched messages were persuasive is because they are easier to process than non-matched messages (See et al., 2008). Therefore, the present dissertation tested message frames that are matched to the aforementioned motivations (i.e., defense, accuracy, and impression management).

Research Question: What type(s) of intervention is(are) effective at persuading people to increase exposure to counterattitudinal information?

Study 1 investigated ways of mitigating selective exposure by targeting the defense and accuracy motivations. These are **intrapersonal motivations**.

Study 2 investigated ways of mitigating selective exposure by targeting impression management motivations. These are **interpersonal motivations.** Further, some people are more predisposed to be more concerned with their impression. These people are high in the personality trait Self-Monitoring. Therefore, message interventions have been crafted to target those who are both high and low in self-monitoring.

Theoretically, findings from this research could be used to inform techniques for teaching critical thinking skills to children in school. Specifically, a simple training teaching the usefulness of being open-minded might be effective at increasing students' willingness to look at attitudinally-inconsistent information.

Chapter 2 - Study 1

Literature Review

Study 1 targets **intrapersonal motivations** of selective exposure: the defense and accuracy motivations by instructing participants about the utility of engaging with attitudinally inconsistent information. To ground the study in theory, the following literature review will unpack the defense and accuracy motivations in more detail.

More on defense motivations for selective exposure: cognitive dissonance theory (CDT) and dissonance reduction

Cognitive Dissonance Theory:

The most enduring and cited theory underlying selective exposure is *Cognitive Dissonance Theory* (CDT) by Leon Festinger (1957, 1964; Frey 1981a, 1981b, 1986; Jonas et al., 2001; Hart et al., 2009; Moore et al., 2023). Festinger (1957), in his seminal book on *cognitive dissonance theory,* posited that it is emotionally uncomfortable and aversive to be exposed to information inconsistent with one's own attitudes, beliefs, and behaviors. Therefore, people are motivated to seek out attitudinally consistent information, and avoid attitudinally inconsistent information so that they can reduce, or avoid bringing about, the uncomfortable state of dissonance. Festinger wrote: *"when dissonance is present, in addition to trying to reduce it, the person will actively avoid situations and information which would likely increase the dissonance"* (Festinger 1957, p. 3). Later studies found that dissonance does, in fact, increase negative affect/feelings (Elliot & Devine, 1994; Harmon-Jones, 2000a, 2000b, 2000c; Zanna & Cooper, 1974). One study found that increasing dissonance arousal also increased selective exposure (Rhine, 1967). In short, when there is dissonance, people are driven to mitigate it, and one such strategy is selective exposure.

Indeed, a review of 34 research studies found support that selective exposure could be attributed to cognitive dissonance (Frey, 1986). For a sample of earlier selective exposure through a dissonance lens see (Ehrlich et al., 1957; Mills et al., 1959; Mills, 1965a, Mills, 1965b). In fact, a study by Mills (1965b) measured dissonance and its effect on selective exposure, finding that participants had a marked preference to attitudinally consistent information. Specifically, participants were asked to rate products by how desirable they perceived them to be, and then to rate ads for those products by how interested they would be in seeing the ads. To increase the relevance, participants were asked to choose a product to receive for free. Consistent with expectations, participants in the study showed a significant preference for ads that supported the decision they had made (i.e., ads with favorable information about the product they chose to receive). This was one of the first empirically conducted research experiments to link dissonance to selective exposure. Moreover, commitment plays a factor too, specifically, the more committed people are to their decision, the more they prefer information which supports that decision (Mills & Ross, 1964). This means that the stronger one feels about their attitude the more likely they are to prefer information that supports their views. Indeed, a study by Brannon et al. (2007) corroborated this, finding that attitude strength moderates selective exposure, such that stronger attitudes, compared to weaker attitudes, resulted in a greater preference for proattitudinal information.

Note the attitude must be of sufficient importance to the recipient to evoke dissonance effects (Festinger, 1957). Additionally, it is important to understand that this discomfort invoked by exposure to dissonant information is solely because it is dissonant, not because of the rightness or wrongness of the information. For example, if a smoker sees a billboard stating that smoking causes cancer (which is true), then the smoker is made aware that their actions are

inconsistent with the information before them, and consequently, feels uncomfortable. A dissonance study found that smokers compared to non-smokers were more attracted to an article stating that smoking is not linked to lung cancer (which is false, Feather, 1962). Smokers feel this discomfort due to the inconsistency between this information and their actions. Similarly, someone who endorses a republican candidate may feel uncomfortable seeing favorable information about a democratic candidate, or vice versa.

Dissonance Reduction:

As established, the state of dissonance is uncomfortable, therefore people are motivated to reduce it. There are several strategies to reduce dissonance that will be unpacked here. One way that people can reduce dissonance is to change their beliefs. In a classic study, Festinger and Carlsmith (1959) put people in a situation where they performed a negative behavior they could not change to see how they would respond to having performed the behavior. Participants came into the laboratory and did a boring task for 30 minutes (i.e., putting pegs into holes and turning them slightly). Afterwards, the participant was led to believe that the experiment was over. However, it was not over as the researcher then asked the participant if they would be willing to help fill in as a research assistant for the next participant. Half the participants were offered $1, and the other half were offered $20, to help (Adjusted for inflation in 2024, $1 would be $10.66, and $20 would be $213; usinflationcalculator.com). The participant was asked to inform the next participant that the task was fun. After the participant informed the next participant, who was in fact a confederate of the experimenter, that the experiment was interesting and fun, the researcher thanked them for helping, gave them the money and then told them that the psychology department wanted to interview them to gauge their experience with the research lab. The interviewer asked the participant how much they had enjoyed the task. Those who were paid

$1 said that they enjoyed the task much more than the group that was paid $20. Festinger and Carlsmith theorized that the participants who were paid $20 had sufficient justification for lying, but those who were paid $1 did not. Those who were paid the lesser sum had convinced themselves that the task was fun. In sum, results revealed that incentivizing participants with less money, rather than more, caused greater attitude change. This was a revolutionary finding within psychology at the time, as earlier theories suggested that greater reinforcement/reward led to greater change (e.g., Skinner, 1938; Hull, 1943). This experiment demonstrated one way that dissonance could be reduced through attitude change. However, there are other ways dissonance can be reduced without changing the underlying attitude.

A review of dissonance theory found that most dissonance research focuses on reducing dissonance through attitude change, rather than behavior change (Harmon-Jones & Mills, 1999, 2019). Harmon-Jones (1999) proposed an *action-based model of dissonance* which states that negative affect arises to make a person aware that something is inconsistent, and to then motivate the person to make a remedial change. Harmon-Jones and Mills (1999) organized several of Festinger's (1957) thoughts on dissonance reduction into four clear strategies: 1, remove dissonant cognitions; 2, add new consonant cognitions; 3, reduce importance of dissonant cognitions; and 4, increase importance of consonant cognitions.

Each of these four dissonance reduction strategies will be explained in the following example: a man is admitted into the emergency room with a severe case of stomach pain. After examination, the doctor informs him that he is having a gallbladder attack due to his high-fat diet. The doctor recommends a diet change to remove all fatty foods, and if the condition does not improve it will require gallbladder surgery. This immediately induces a state of dissonance as it is uncomfortable to be told that his actions (i.e., bad eating habits) are inconsistent with a

desirable outcome (i.e., good health). To mitigate the dissonance, he can engage in one, or several, of the following dissonance reduction strategies (his thoughts are in quoted italics).

Strategy 1 (remove dissonant cognitions): *"the doctor is wrong. I have been eating the same diet for years and never had an issue before. It must be something else."*

Strategy 2 (add consonant cognitions; Adams (1961)): *"Eating a high-fat diet helps induce ketosis, therefore, it is a net-positive because it helps mitigate weight-gain."*

Strategy 3 (reduce importance of dissonant cognitions): *Eating fatty foods might not be good for my gallbladder, but I don't think I will have to have it removed.*

Strategy 4 (increase importance of consonant cognitions): *"Eating fatty food is worth the cost. Delicious food is one of the joys of life."*

The first two strategies (1, removing dissonant cognitions and 2, adding consonant cognitions) are selective exposure processes. Festinger stated (1957, p. 22): *"in the presence of such dissonance, then a person might be expected to actively seek new information that would reduce the total dissonance and, at the same time, to avoid new information that might increase the existing dissonance."* In this hospital example, to mitigate dissonance via selective exposure, the man could avoid dissonant cognitions by leaving the hospital (strategy 1, remove dissonant cognitions). He then searches for more agreeable information, perhaps seeking a second opinion, watching videos online about the benefits of eating a high-fat diet, or searching out instances of people who had this issue but did not undergo surgery or a diet change (strategy 2, adding consonant cognitions). These actions can be termed "*selective exposure"*, as he is selectively choosing to be exposed to information that is either consistent with his attitudes/behaviors/cognitions or avoid information that is inconsistent with his attitudes/behaviors/cognitions.

A series of four studies investigated dissonance and selective exposure effects by having participants listen to a message that criticized an integral part of the self (Brock & Balloun, 1967). In these experiments, heavy smokers, along with non-smokers, were individually left in a room by themselves with a distorted radio message about the dangers of smoking. The radio had a dial that, if participants chose to turn it, would reduce this distortion level thereby making the message more understandable. The degree to which the participant did not turn the dial, indicated their level of selective exposure. Results found that heavy smokers did not touch the dial, choosing instead to leave the critical message unintelligible. Contrastingly, non-smokers reduced the distortion levels. The same results were obtained with a radio message criticizing Christianity, with Christians leaving it unintelligible, and atheists adjusting it to increase the clarity. These results suggest that people are motivated to defend their beliefs and behaviors, even when doing so could prove harmful (e.g., avoiding information about unhealthy smoking may lead to later development of lung cancer).

As has been discussed, studies that have cited dissonance theory as the underlying motivation for selective exposure typically do so when participants are motivated to defend their attitudes rather than be accurate (Hart et al., 2009; Fischer & Greitmeyer, 2010; Moore et al., 2023). Defense motivations lead to increased selective exposure (Fischer et al., 2008). According to the literature, emotion is tied strongly to defense motivations supporting the cognitive dissonance view of selective exposure (Adams, 1961; Dorison et al., 2019; Sharot & Sunstein, 2020). Specifically, people are motivated to defend their attitudes because they want to avoid the negative affect that accompanies exposure to conflicting information (Dorison et al., 2019; Frimer et al., 2017; Moore et al., 2023). The Hart et al. (2009) meta-analysis on selective exposure found that the defense motivation is nearly twice as strong as the accuracy motivation

(i.e., accounting for 13%, and 7% of the selective exposure variance respectively), and particularly strong within domains of controversial attitudes (i.e., politics and religion).

An irony of the *defense motivation* of selective exposure is that avoidance of dissonant information may result in attitudes and decisions that are more vulnerable (i.e., less defensible). McGuire (1961a) established that being aware of arguments on the other side of an issue actually serves as a buffer against persuasion attempts (a later section on inoculation theory will explore these ideas further). Further, research has found success at boosting counterattitudinal exposure by telling people that they will debate a topic (e.g., Canon, 1964; Freedman, 1965). People who are preparing to debate an issue are more likely to select uncongenial information than those who are preparing to write an essay. Additionally, a study by Valentino et al. (2009) found evidence that people engage in balanced information seeking when political counterattitudinal information would be useful for defending their attitude against a detractor.

An Alternative Explanation for Dissonance Effects: Self-Affirmation

The current review, up to now, has explored dissonance as the underlying motivation behind selective exposure. However, there are other theories that, under some circumstances, can account for the same results as dissonance studies (Steele, 1988). One such theory is *self-affirmation theory* by Steele (1988).

Self-affirmation theory by Steele (1988) states that dissonance effects can be reduced or eliminated if people are affirmed in some way, even if the affirmation is unrelated to the current situation. The classic experiment by Steele et al. (1986) investigated the effect that self-affirmation would have on participants after having a dissonance-inducing experience. In the study participants indicated how much they valued scientific endeavors or business ones and then were put into the relevant category that best represented them. Participants then rated 10

record albums with the assumption they would receive one of the albums as a gift. After rating the albums, participants were made aware of negative attributes related to the ones they chose, and positive attributes of the ones they did not choose. This induced dissonance in the individuals. The participants were then given the opportunity to re-rate the albums. Before re-rating the albums, half the participants put on lab coats. Steele et al. (1986) reasoned that wearing the lab coat should affirm those who valued science, while for those who were business-oriented it likely would not have an effect. The more that participants changed their evaluations, the greater the underlying dissonance. Indeed, results found that those who were science-oriented who put on a lab coat exhibited less dissonance (i.e., did not change their evaluations) compared to those who were business oriented or those not wearing the coats (both science-oriented and business-orientated). This demonstrates that for those in the science mind frame, wearing the lab coat affirmed their values of science. Self-affirmation has been generalized to other experiments.

Self-Affirmation theory has been utilized in several domains to bring about better outcomes through reducing defensive effects, such as enhancing problem-solving under stress (Creswell et al., 2013), increasing intentions to engage in better health behaviors (Armitage et al., 2008; Fielden et al., 2016; Harris & Epton, 2009; Epton & Harris, 2008), increasing self-compassion and pro-social behaviors (Lindsay & Creswell, 2014), helping people interact with information in a less biased manner (Cohen et al., 2000; Liu, 2017; Chaiken et al., 1989; Chen & Chaiken, 1999; Steele, 1988; Stroud, 2017), and increasing intentions to recycle more (Sparks et al., 2010). Most relevant for the current dissertation, researchers Klein and Harris (2009) found that when participants were affirmed they were more likely to look at beneficial yet threatening information compared to those who were not affirmed. Specifically, Klein and Harris (2009) instructed participants to write a one-page essay about their most important value, including

examples. During the selective exposure activity, moderately-heavy drinkers were more likely to be selective when their important values were not affirmed, however, when they were affirmed by their giving examples of their value-consistent behavior, they exhibited a selection preference for threatening information linking alcohol consumption to breast cancer. This was an important finding due to the potential benefits that viewing this information could have on their health-seeking behaviors. In sum, given the success of self-affirmation interventions in various domains and paradigms, particularly the selective exposure study (Klein & Harris, 2009) it is likely that self-affirmation will also mitigate selective exposure in the current study.

The defense motivation can lead to counterattitudinal exposure: Inoculation Theory

Recall the earlier cited evidence that being aware of opposing arguments can make people more resistant to persuasion attempts. *Inoculation Theory* by McGuire (1961a) posits that people can be inoculated against later persuasion attempts by being exposed to attitudinally inconsistent information and trained on how to overcome it. Specifically, McGuire (1961a) warned participants that they would encounter a message that would be critical of their beliefs about a *cultural truism* (i.e., a cultural truism is a common belief that people would have difficulty defending because they do not have easily accessible reasons for holding the attitude, such as *you should brush your teeth after every meal*). This is the same process as which people are vaccinated against diseases. To inoculate someone against a virus, the person is given a small amount of that virus to help the body learn how to defend against it, but not so much as to overwhelm the immune system. When the body encounters the virus later, it is then able to recognize and defend against it. Likewise, someone may be similarly inoculated against counterattitudinal information by being presented the counterattitudinal information, then a refutation of the content they will be exposed to (Banas & Rains, 2010; Compton, 2013;

Compton et al., 2021; McGuire, 1961a, 1961b, 1962, McGuire & Papageorgis, 1961). Importantly, when people are inoculated, they are motivated to defend their vulnerable position (Banas & Richards, 2017). In sum, it is in people's best interest to be exposed to counterattitudinal information, if only for the sole purpose of being able to defend their position from persuasive attacks.

Inoculation theory has been applied as a technique in various domains where misinformation and disinformation are rampant (e.g., science communication; Wood, 2007; vaccinations; Wong & Harrison, 2014; climate behaviors; van der Linden et al., 2017; and politics; Compton & Ivanov, 2013). Specifically, inoculating people has shown to be an effective persuasive tool for both boosting awareness of counterattitudinal arguments, as well as helping people better defend themselves against them. Regarding the Covid-19 pandemic, there was great concern by the World Health Organization (WHO) about misinformation tactics that people were susceptible to (i.e., fearmongering, fake experts, and conspiracy theories; van der Linden et al., 2020). Therefore, the WHO and the UK government created an online game where people were shown false arguments and then taught how to resist them (https://www.goviralgame.com). A meta-analysis of 54 research studies by Banas and Rains (2010) found that inoculation training interventions were effective at conferring resistance to counterattitudinal attacks up until 2 weeks after inoculation, with only minimal loss of effectiveness at 2 weeks. For another review on inoculation theory see (Tormala, 2008).

Another piece of evidence that defense motivations underlie selective exposure is that those who are more confident in their ability to defend their attitudes are less likely to be selective (Albarracín & Mitchell, 2004). The stronger the participants' confidence in their ability to defend their views, the more receptive they were to view counterattitudinal information. Note

that participants were not only more open to viewing this information, but were also more open to processing it. Somewhat counterintuitively, the higher the participant's defensive confidence, the more susceptible they were to being persuaded by the message. Albarracín and Mitchell (2004) aptly named their article: *"how believing that one is strong can sometimes be a defensive weakness"*. Arguably this "weakness" can be a good thing if the counterattitudinal information is something that would be beneficial to become aware of (e.g., screening for cancer; Ropka, 2006). Note that when people overcome their resistance to counterattitudinal information, they can more accurately judge information for its merits, rather than solely by the position it endorses. However, this willingness to view counterattitudinal information seems to have limits. One concerning finding in the meta-analysis by Hart et al. (2009) is that people are less likely to select counterattitudinal information when that information is perceived to be higher in quality rather than lower. This indicates that people are defensive and would rather not view high quality counterattitudinal information, nor as likely to view low-quality proattitudinal information, as it is threatening to their attitude (Frey 1986; Hart et al., 2009; Lowin, 1969).

Some research has utilized defense motivations to boost engagement with counterattitudinal information (Banks & Brannon, 2023; Canon, 1964; Freedman, 1965). One such way of increasing exposure is to tell people that they will debate a topic (e.g., Canon, 1964; Freedman, 1965). Those who are preparing to debate are more likely to select counterattitudinal information than those who are preparing to write a persuasive essay. Another possible way is to prime people about a time they were unable to defend their position because they were unaware of the arguments on the other side of an issue (Banks & Brannon, 2023). Sweeny et al. (2010) found that people are less likely to be avoidant if shown that it is costly to avoid

counterattitudinal information. Thus, intervention messages that highlight the potential costs of information avoidance should be effective at mitigating people's selective exposure tendencies.

More on accuracy motivations for selective exposure: confirmation bias, consider the opposite, cognitive economy/satisficing

Confirmation bias:

People's preference for judgment-consistent information when motivated to be accurate has been referred to as the *confirmation bias* (Fischer et al., 2008; Hart et al., 2009; Jonas et al., 2001; Knobloch-Westerwick et al., 2015; Schulz-Hardt et al., 2000). The confirmation bias is: *"the seeking or interpreting of evidence in ways that are partial to existing beliefs, expectations, or a hypothesis in hand"* (Nickerson, 1998). That is, when making a decision, people demonstrate a preference for information that would support their view, while minimizing, not acknowledging, distorting or disconfirmatory evidence (Kuhn, 1989; Nickerson, 1998). As an aside, the confirmation bias is sometimes framed as one of the underlying mechanisms that can lead to selectivity (Hart et al., 2009), however, it is not necessary for the confirmation bias to be present in order to be selective. Selectivity can still occur when people are not motivated towards accuracy (i.e., confirmation bias), such as when people consume certain information in the presence of others in order to manage their impression (Moore et al., 2023). Due to the ubiquity of the confirmation bias it has been referred to as the 'mother of all biases' (Nickerson, 1998). Supporting this idea, a recent review argued that most information search biases could be classified under the umbrella of the confirmation bias (Oeberst & Imhoff, 2023).

The confirmation bias typically refers to occasions in which people want to have a correct answer but are biased in their attempts to do so (i.e., an accuracy motivation). For example, a police officer has a suspect in custody and only searches for information that confirms their

theory that the suspect is guilty. The suspect matches the eyewitness report of the perpetrator by being roughly the same height, age, and having facial hair. The more information the officer finds that matches, the more convinced they are that they have the right suspect. However, the officer ignores disconfirmatory information which could cast doubt on their suspicions (e.g., other people match the description). In fact, reviews on faulty criminal convictions have found that investigators routinely avoided or minimized evidence that suggested innocence (Rossmo, 2021; for a review on the confirmation bias and criminal sentencing see Rossmo & Pollock, 2019).

Confirmation bias also occurs in medical care when providers have a theory about what condition the patient has, but only seeks to confirm their theory, rather than also seeking to rule it out (Makary & Daniel, 2016). Reviews on medical malpractice lawsuits have found that practitioners failed to order tests, and/or explore alternative explanations for symptoms. Medical malpractice is estimated to be the 3rd highest cause of death in the U.S. (Makary & Daniel, 2016). A research study on the confirmation bias and mental health asked psychiatrists to make a preliminary diagnosis and then to gather information that would help them reach the correct conclusion, either to change the diagnosis, or standing by their initial judgment (Mendel et al., 2011). Results found that 8 out of 10 psychiatrists sought confirmatory information rather than disconfirmatory, resulting in reaching an erroneous conclusion in 13% of the cases. A misdiagnosis has the potential to be extremely problematic as it can inform a treatment plan that is ill-suited for the patient. Therefore, researchers have taken a great interest in investigating how to train people to look for disconfirmatory information in addition to confirmatory information (Lord et al., 1984; Whitt et al., 2023).

The irony of selective exposure being instigated by an *accuracy motivation* is that the process of achieving optimal results (i.e., accurate attitudes and decisions) often requires gathering attitudinally inconsistent information. To illustrate, if someone desires to have a correct attitude, but only looks for information that they agree with already (*confirmation bias*), then it is less of a given that they will obtain an accurate attitude because they may have ignored other relevant information.

It is frequently the case that people are motivated to reach an accurate decision, or attitude, but are biased towards judgment-consistent information (Nickerson, 1998). These people are not trying to defend their judgment, or make a certain impression, rather they are interested in reaching the best result (e.g., a medical doctor diagnosing a patient; Elston, 2020). This is even true when people are incentivized with money to reach the best decision (Camerer & Hogarth, 1999). Indeed, a review found little evidence that incentives are effective at improving decision-making (Camerer & Hogarth, 1999). The process of incentivizing people to be more accurate rests upon the assumption that they have the cognitive abilities to exert more effort. Likewise, holding people accountable for their decisions can be effective at boosting their accuracy, but only when people possess the tools to reach an accurate decision (Lerner & Tetlock, 1999). Alternatively, people may exhibit a confirmation bias when motivated to be accurate because they are simply classifying pro-attitudinal information as higher quality (Fischer et al., 2005).

One study has found that when people are presented with more information to choose from, 10 versus 2 items, they exhibited a stronger selective exposure effect (Fischer et al., 2008). This may be one reason selective exposure is increasing, as there are exponentially more information sources to select from as time goes on (Dylko et al., 2017). However, the irony of

this selectivity is that cutting corners can end up causing people to spend more time if the wrong decision is made, as President Kennedy found out after the botched Bay of Pigs invasion (John F. Kennedy Presidential Library Staff, 2024).

Another factor related to accuracy motivations is the perceived usefulness of the information (Knobloch-Westerwick & Kleinman, 2012). When people view the information as useful (e.g., helps them reach a goal), they are more likely to interact with it (Wagner, 2017), thus overcoming the preference for attitudinally consistent information (Iyengar et al., 2008; Knobloch-Westerwick, 2008).

"Consider the opposite" - a confirmation bias debiasing strategy:

Recent research (Whitt et al., 2023) has noted that most debiasing training interventions for the confirmation bias take a direct approach. The intervention message simply informs the participant about the confirmation bias. This is called *Psychoeducation* (Whitt et al., 2023; Lehman & Nisbett, 1990; Lehman et al., 1988; Nisbett et al., 1987). However, the limitation with this approach is that it fails to consider *bias blind spot* (Lord et al., 1984; Pronin et al., 2002), and the fact that most debiasing interventions have found that the confirmation bias is so insidious that people tend to fall victim to it even when they are aware of it. Better results are obtained by teaching participants a strategy to overcome it, such as *considering the opposite* (Lord et al., 1984). The *consider the opposite* technique is a disconfirmatory approach in which the person seeks information that would disconfirm their attitude. The person is told to consider: *"what are some reasons that my initial judgment might be wrong?"* (Larrick, 2004, p. 323). Numerous studies on debiasing have found some success in mitigating the confirmation bias through the consider the opposite strategy (Adame, 2016; Lord et al., 1984; van Brussel et al., 2020, 2021).

Although the confirmation bias both addresses biased exposure and biased evaluation, most debiasing studies have done so under forced exposure conditions that attempted to mitigate biased evaluation (Lord et al., 1984). Many research studies have demonstrated the effectiveness of the consider the opposite paradigm (Hirt & Markman, 1995; Lord et al., 1984; Schwind et al., 2012; van Brussel, 2021). Traditionally, the consider the opposite paradigm has been used to mitigate biased assimilation (Lord et al., 1984). Biased assimilation is the process of taking new knowledge and selectively interpreting it in a way that supports prior knowledge (Piaget, 1952). However, this dissertation planned to use the consider the opposite technique to mitigate selective exposure, which temporally, comes before the evaluation stage. This is the only empirical study we are aware of that utilizes the consider the opposite instruction as a technique to mitigate selective exposure.

Cognitive economy model (Fischer et al., 2012):

Another theory related to selectivity, *the cognitive economy model*, posits that selectivity occurs not solely due to motivational reasons, rather it is done to conserve precious mental resources (i.e., cognitive reasons; Fischer et al., 2012). One reason why people are engaging with attitudinally-consistent information is because this information is easier to process than counterattitudinal information, thus requiring fewer mental resources (Fischer et al., 2012). Indeed, people tend to store more attitude-consistent information in their memories, and this familiarity reduces the cognitive load when engaging with proattitudinal compared to counterattitudinal information. This is consistent with Herb Simon's (1957, 1976) *bounded rationality model of decision-making* which states that people are interacting with information in an economical way (i.e., using fewer mental resources). This also assumes that people are rational. Therefore, when people are cognizant that interacting with counterattitudinal

information is better for reaching the right decision/judgment, then they often will do so (Greitemeyer & Schulz-Hardt, 2003; Kray & Galinski, 2003). In short, people only have so many cognitive resources, and in order to conserve them, they focus their exposure on attitudinally-consistent information.

Further, people frequently engage in *satisficing*, or in other words, making decisions that are "good enough" (Simon, 1957, 1976). People often use cues, such as the source of the message, rather than argument quality, to help guide their decisions and judgments. If the message comes from a counterattitudinal source, people are more critical of the message (Taber & Lodge, 2006; Westerwick et al., 2017). There are tradeoffs between taking the effort to make the best decision, and the costs involved to do so. Often, people simply do not have the time, the ability, or the motivation to systematically process the information (Johnson et al., 2020; Chen & Chaiken, 1999; Metzger, 2007). Therefore, people make a reasonable decision that is satisfactory rather than trying to make the best decision possible (i.e., maximizing). Fortunately, mitigating this selectivity can be as simple as increasing the personal involvement that people have about the message (Banks & Brannon, 2023; Petty et al., 1981). Specifically, Kahneman and Tversky (1979) found that warning people of the costly mistakes of making a wrong decision reduces their selective exposure tendencies compared to informing them of the benefits of making a good decision.

As discussed, there can be big consequences when neglecting counterattitudinal information. Therefore, there is a need to give people a strategy that helps them view counterattitudinal information. However, it can be tricky to identify how to mitigate selectivity because research has found that people engage in selective exposure for various reasons.

Therefore, there are 5 message frames within Study 1 that aim to address selective exposure from different perspectives. The next section, Study 1 overview, will explain these ideas further.

Study 1 Overview

Study 1 investigated selective exposure through an intrapersonal lens and attempted to mitigate it through frames targeting those *intrapersonal motivations*. Research has established that people are more likely to engage with information when they anticipate it will help them reach a goal, either accuracy or defense. Therefore, some of the message frames in study 1 targeted the defense and accuracy motivations by demonstrating the utility of engaging with attitudinally inconsistent information.

The main premise of the *defense motivation* of selective exposure is that people seek out information supporting their attitudes in order to defend their current views, however, this can backfire and cause their attitudes to be more vulnerable. Conversely, the main premise of the *accuracy motivation* is that people are being selective because they are motivated to achieve an accurate attitude/decision, but they are unintentionally undermining their efforts by avoiding attitudinally inconsistent information. Message frames 2 and 3 targeted the accuracy motivation in order to reduce selective exposure. Message frames 4-6 targeted the defense motivation by aiming to reduce defensiveness, thereby mitigating selective exposure.

Notably, several of these frames directly informed participants about psychological processes (psychoeducation; Whitt et al., 2023) to drive home the lesson of how to intelligently interact with information. Note that this approach is common within confirmation bias debiasing paradigms (message frame 3), as well as in real-world cognitive trainings (Whitt et al., 2023). However, for the other experimental message frames (4-6), this was a novel approach that had

not yet been explored. To help drive home the utility of engaging with counterattitudinal information, the following message frames were tested:

1. **Control**, this message frame is a generic message control.
2. **Be Unbiased** is a message instructing the participant to be unbiased. Further, other theories state that selectivity is occurring because people are motivated to be accurate (Hart et al., 2009), or because it is easy (cognitive economy model, Fischer et al., 2012), or it is simply unintentional. Thus, interventions were tested that address these. The "*be unbiased"* message frame was be used to see if merely telling people to not be biased will result in less selectivity. Additionally, this message frame aimed to rule out the *demand effect* (i.e., the demand effect is when people respond to ways that they think the study wants them to, rather than how they would honestly respond; Orne, 1959, 1962).
3. **Consider the opposite** teaches about the *confirmation bias* and how to overcome it through the *consider the opposite* strategy (Lord et al., 1984). The *"consider the opposite"* message frame taps into the accuracy motivation. This message frame argues that people often think it is less effort to just choose consistent information, however, it can often backfire and cause more effort to be expended when selectivity results in decision-making errors.
4. **Cognitive Dissonance** communicated the main idea behind dissonance theory, that it is uncomfortable to be exposed to information that is different solely because it is different, but not because the information is objectively wrong (Festinger, 1957). In other words, the cognitive dissonance message explored the possibility that merely teaching people about why it is uncomfortable to be exposed to counterattitudinal information may be enough to help them be more willing to approach counterattitudinal information.

5. **Self-Affirmation** continues on with a variation of dissonance theory, that is, an application of self-affirmation theory. Past research has found that affirming the self (*self-affirmation theory; Steele, 1988*) can help reduce biased evaluation of messages when motivated to defend (Cohen et al., 2000; Liu, 2017; Chaiken et al., 1989; Chen & Chaiken, 1999). Most promisingly, a study by Klein and Harris (2009) found that participants who were affirmed selected more counterattitudinal information. Similarly, the self-affirmation message frame in the present study was thought to help participants be more willing to look at information they would normally be resistant towards because they are affirmed as being "thoughtful" and "considerate" towards things they "might not necessarily agree with." It is logical that telling people that they are well-rounded and willing to expose themselves to various perspectives will help them reduce their defensiveness, thereby reducing selectivity.
6. **Inoculation** taught participants about inoculation theory and how those who are aware of arguments on the other side of an issue are better able to defend their position (*inoculation theory*; McGuire, 1961a). Just like the consider the opposite (message frame 3) and dissonance message frame (message frame 4), this message taught participants (psychoeducation) about inoculation theory and why it can be advantageous to look at counterattitudinal information.

Hypotheses and Research Question

As done in Whitt et al. (2023), all message frames are compared to a control message frame.

Hypothesis 1: One or more of the experimental message frames will be more effective than the control at mitigating selective exposure.

Hypothesis 2: One or more of the experimental message frames will be more effective than the control at increasing the level of agreement with the counterattitudinal message.

Research question:

Are some of these message frames more effective than the others?

Methods

Participants: Inclusion and Exclusion Criteria

462 participants were recruited from Cloud Research Connect. A G*power analysis indicated that a final sample size of 402 would be required to detect a small to moderate effect (f = 0.18). To ensure that the counterattitudinal message is counterattitudinal, participants who selected agreement or neutrality on the pre-test measure (i.e., increased internet service bills) were excluded (n = 55). 1 participant who failed the attention check was excluded. In a prior study by Banks (2022), 14% of the sample either failed the attention check, or indicated agreement/ neutrality with the pre-test question. Therefore, to have a sufficient buffer for exclusions, 15% additional participants (n = 60) were recruited for a total sample of 462 participants. As compensation for participation, participants were paid $3.00.

Demographics. Age: (M = 38.1, SD = 11.4). Race: 62.3% white, 16.5% black, 7.4% Asian, 6.2% Hispanic, 7.6% other. Sex: 54.7% male, 43.8% female, 1.5% prefer not to say. Education levels: high school or GED 10.3%, some college 22.2%, associate's 9.6%, bachelor's 43.6%, master's 10.6%, professional or doctoral degree 3.7%.

Design and Variables

Pre-post, experimental design with a between-subjects variable of 6 message frames (1 control and 5 experimental). The pre-post measure is the level of agreement with the principal position of the counterattitudinal message. Covariates are pre-test agreement for all analyses, and neutral message reading speed (for time reading time DV). The dependent variables related to hypothesis 1 are: selective exposure headlines, reading time, argument recall, and engagement; and related to hypothesis 2: agreement.

Materials

Pre-test Agreement: (Adapted from Banks & Brannon, 2023) (The same as study two)

"To what extent do you agree that people should have to pay twice what they currently pay for internet service? (1 = strongly disagree to 7 = strongly agree).

(See Appendix C).

6 Message Frames: 1 Control and 5 Experimental

1. Control (Adapted from Whitt et al., 2023) (117-words)

"Now, we would like for you to read a short passage about human psychology. Please carefully read the passage below.

Psychology of Attitudes

Each of us evaluates our worlds. We form likes and dislikes of virtually every thing or issue we encounter; these are called 'attitudes'. Simply put, for example with regard to an issue, attitudes are evaluations of the issue. Attitudes are important because they often determine what we do regarding an issue.

The following are the three major components of an attitude:

Cognitive component. The thoughts and beliefs that people form about the issue.

Affective component. The emotional reactions that people have towards the issue.

Behavioral component: The behaviors that people display towards the issue."

(See Appendix D).

2. Be Unbiased (adapted from Lord et al., 1984). (106-words)

"Now, we would like for you to read a short passage about human psychology. Please carefully read the passage below.

Be Unbiased

People tend to prefer information that supports their views over information that disagrees with it. However, this can sometimes lead to bad decision-making. Therefore, we would like you to be as objective and unbiased as possible in evaluating the information you read. You might consider yourself to be in the same role as a judge or juror asked to weigh all of the evidence in a fair and impartial manner.

So please resist any temptation you have to ignore information you initially disagree with."

(See Appendix D).

3. Consider the Opposite (121-words)

"Now, we would like for you to read a short passage about human psychology. Please carefully read the passage below.

Consider the opposite

Research has found that the best way to make decisions is different from how most people make them. Most people try to only find information that supports the decisions they are making. However, this blinds them to alternative, oftentimes better, solutions. For example, you want to buy a certain car and focus on positive reviews but ignore negative reviews about it.

It is best to ask yourself: 'which information, if true, would mean that I have the wrong idea, or am making the wrong decision?' Considering the opposite is in your best interest to obtain a correct attitude/decision/judgment."

(See Appendix D).

4. Cognitive Dissonance (121-words)

"Now, we would like for you to read a short passage about human psychology. Please carefully read the passage below.

Feelings aren't facts

Research has shown that it is uncomfortable to be exposed to information that conflicts with our attitudes solely because it is different, not because it is wrong. Feelings aren't facts.

For example, John smokes but he knows smoking is bad for him and that makes him feel uncomfortable. Does that discomfort mean that he should deny that smoking is bad for him? No. You may feel uncomfortable seeing conflicting information, but that's natural.

Don't just trust the feeling you have when you look at information. Feelings aren't facts. Make sure to evaluate messages in a logical, unbiased manner."

(See Appendix D).

5. Self-Affirmation (102-words)

This message frame makes the claim that: *"According to our research, most Cloud Research workers tend to be thoughtful, highly intelligent people."* In a study by Banks and Brannon (2023), the median education level was a bachelor's degree, indicating that participants on cloud research were well-educated. Consistent with expectations, the median education level in the current research was a bachelor's degree (46.2% of the sample).

"Now, we would like for you to read a short passage about human psychology. Please carefully read the passage below.

<u>You're open-minded</u>

According to our research, most Cloud Research workers tend to be thoughtful, highly intelligent people. It is beneficial to be a thoughtful and considerate person, especially when encountering information that you might not necessarily agree with. You should be proud that you are amongst those who are compensated for their opinions because your contributions are so valuable!

Now, if someone challenges something you feel strongly about and it makes you feel kind of bad, that's okay, you're an open-minded person."

(See Appendix D).

6. Inoculation (124-words)

"Now, we would like for you to read a short passage about human psychology. Please carefully read the passage below.

Resist persuasion by being informed

Research has shown that being aware of arguments from the other side of controversial topics can help you resist persuasion attempts. This is the same process as which people are vaccinated against diseases. To inoculate someone against a virus, they are given a small amount of that virus to help the body learn how to defend against it. Likewise, you may be similarly inoculated against information you disagree with.

So, next time you have an opportunity to look at information you disagree with, make sure to take a look, if only to learn how to defend yourself against it."

(See Appendix D).

Attention Check:

Participants were asked about the main theme of the message they read and were presented with four multiple-choice answers to choose from. Only one of which is correct, the three foils were the same for each condition (and for both studies). Participants who failed this attention check were planned to be dropped from all analyses. Each message frame was only presented with the attention check that was written for their message frame.

(1. Control): *"What was the main theme of the message you just read?*

Correct answer: "*There are cognitive, affective, and behavioral components of attitudes*"

Incorrect answers: "*The education system is changing how they teach upcoming generations", "Books are a good tool for learning new information", "The digital age brings instant access to information".*

(2. Be Unbiased): *"What was the main theme of the message you just read?*

Correct answer: "*Being unbiased when evaluating information"*

Incorrect answers: "*The education system is changing how they teach upcoming generations", "Books are a good tool for learning new information", "The digital age brings instant access to information".*

(3. Consider the opposite): *"What was the main theme of the message you just read?*

Correct answer: "*Making better decisions by considering why you could be wrong"*

Incorrect answers: "*The education system is changing how they teach upcoming generations", "Books are a good tool for learning new information", "The digital age brings instant access to information".*

(4. Cognitive Dissonance): *"What was the main theme of the message you just read?*

Correct answer: "*Feelings aren't facts, just because a message makes you uncomfortable doesn't mean you should ignore it"*

Incorrect answers: "*The education system is changing how they teach upcoming generations", "Books are a good tool for learning new information", "The digital age brings instant access to information".*

(5. Self-Affirmation): *"What was the main theme of the message you just read?*

Correct answer: "*Cloud Research Users are open-minded"*

Incorrect answers: "*The education system is changing how they teach upcoming generations", "Books are a good tool for learning new information", "The digital age brings instant access to information".*

(6. Inoculation): *"What was the main theme of the message you just read?*

Correct answer: "*Being informed on both sides of an issue allows you to defend your position"*

Incorrect answers: "*The education system is changing how they teach upcoming generations", "Books are a good tool for learning new information", "The digital age brings instant access to information".*

(See Appendix E).

Selective Exposure Headlines: (The same as study two)

Commonly, selective exposure paradigms test selective exposure by presenting an assortment of proattitudinal and counterattitudinal messages for the participant to choose from (Hart et al., 2009; Whitt et al., 2023). The more the participant says they are interested in reading articles that are consistent with their attitude (1 = not at all interested to 7 = very interested), the higher their selective exposure score. Conversely, if the participant is more interested in reading the counterattitudinal articles than proattitudinal, then their selective exposure score would be lower. The present study utilized this same paradigm to assess participant's selective exposure scores. Specifically, the present study included 6 article titles about internet bills increasing, with 3 being proattitudinal and 3 counterattitudinal. These articles were directly related to the pre-test question and counterattitudinal message about internet bills. Because participants who indicate neutrality or agreement with increased internet bills were excluded, article headlines that advocate for increased internet bills are the counterattitudinal articles, whereas the ones that argue against it are proattitudinal. Participants' scores were used to create a composite score that

represents their selective exposure level. Higher selective exposure scores mean that the participant was more interested in proattitudinal information than counterattitudinal information. The following 6 article titles were presented to the participants in a random order.

Participants received the following instruction before selecting the articles:

"The following article titles are about a proposal to double internet service bills. For each of the following article titles please indicate how interested you would be to read the full-length article." (1 = not at all interested to 7 = very interested)

Counterattitudinal: *"Say YES! Paying Larger Internet Bills Will Actually Help Us Out!"*

Counterattitudinal: *"Several Reasons Why Doubling Your Internet Bill is Beneficial!"*

Counterattitudinal: *"Why One Instagram Influencer Supports Doubling $$$ Spent on Internet Service Bills!"*

Proattitudinal: *"Why charge us more? These Internet Service Fees Are Getting Out of Hand!"*

Proattitudinal: *"At First it Sounded Bad, and it is Still Bad, Say NO! to Doubling Internet Service Charges!"*

Proattitudinal: "*Social Media Influencers Speak Out Against Internet Bill Increases"*

Scoring: Scores for counterattitudinal article titles were reverse coded. The proattitudinal and counterattitudinal scores were combined into a composite score by averaging their ratings. Higher scores mean that the participant was less willing to view counterattitudinal information (1 = low selective exposure to 7 = high selective exposure).

(See Appendix F).

Counterattitudinal Message[1] (530 words): (The message is the same as study two, but the instructions before the message are slightly different)

Note. Banks and Brannon (2023) used a similar counterattitudinal message (298 words) about internet service taxes.

On the page preceding the counterattitudinal message, participants read the following: *"On the following page, you will be presented with one of the full-length articles to read. We want to see what people are interested in reading, that is why we asked you to indicate which articles you are interested in reading. However, until we know what everyone says, we will give people a random article to read. In the future, we will take into account what people say."*

The next page: (The same as study two)

"Several Reasons Why Doubling Your Internet Bill is Beneficial!

"The true cost of the internet is not being properly charged to the end consumer. Once this cost is redistributed, the average person will be paying double what they are currently paying for their internet bill. This could mean you pay $600 extra a year.

The internet provides great benefits to people: chiefly among them being instant access to millions of websites. However, this is expensive to maintain and the more time you spend on it

[1] Online website articles that support claims made in the counterattitudinal message:

https://www.forbes.com/advisor/business/software/website-statistics/

https://www.security.org/resources/data-tech-companies-have/

https://www.pewresearch.org/internet/2019/11/15/americans-and-privacy-concerned-confused-and-feeling-lack-of-control-over-their-personal-information/

https://proton.me/blog/what-is-your-data-worth#:~:text=Depending%20where%20you%20live%2C%20information,analysis%20of%20their%20regulatory%20filings.

https://www.cnet.com/home/internet/the-average-internet-bill-in-the-us-is-63-a-month-heres-how-you-can-lower-it/

https://www.forbes.com/home-improvement/internet/internet-statistics/#:~:text=The%20amount%20of%20time%20users,to%20the%20Global%20Web%20Index.

https://www.cnet.com/home/internet/closing-the-digital-divide-will-90-billion-actually-solve-our-broadband-gap/

causes more strain on the infrastructure (fiber-optic lines; data warehouses, servers, security). Think of it like our highways: the more time you spend driving on the highways, the more wear and tear you do. Therefore, you pay additional fees on your gasoline that goes towards highway maintenance. The more you use it, the more you pay for its upkeep. Well, our virtual highways are crumbling, and we need your tax-dollars to fill the potholes. Recently, there have been cases of internet servers being overloaded, causing great disruptions to many sectors, such as the airline industry! The internet overall is being run on a shoe-string budget relative to its size and more money needs to be raised to pay for its upkeep.

There are even parts of our country that do not have access to broadband internet! The main obstacle being the cost of infrastructure. Larger internet service bills can be the answer to transport these 7 million Americans from the digital stone age to the modern one.

Additionally, the cost of many websites is largely subsidized by collecting your private information and then selling it to advertisers. Unsurprisingly, most people are not happy with this. A Pew research study found that 79% of U.S. adults are "very" or "somewhat concerned" about how their data is used. Therefore, I argue that privacy should and can be given back to the end user, which is you! This will not be free though. It would require you to pay more for your internet bill so that websites can still operate without needing to resort to selling you out.

So, how much will this cost you? By one estimation, your user data is worth over $600 in revenue a year! What if the internet user were to pay that additional $600 each year to not have their data tracked and sold? The average internet bill in the US is $63/month. Therefore, if each person were to double their internet bill, this should cover the value of their data. This increased revenue could be used so that the internet and companies could function without selling user

data. Another benefit of minimizing data collection would be a lessened risk of your information being leaked during data breaches, since there would be no data to leak.

Let's make the internet work better by making it more stable and accessible for all. The more we pay, the greater the internet can become! There is a common phrase: "If you're getting it for free, then you are the product". Are you tired of being a product? Let's make the internet work for you rather than for advertisers by paying your fair share for it."

(See Appendix G).

Argument Recall: (The same as study two)

To assess the degree to which participants paid attention to the counterattitudinal message, participants were presented with exact sentences from the message and then asked if they were in the message or not. The sentences were presented in a random order.

Were the following sentences in the text you read? (Yes or No).

You are indicating whether or not the sentences were in the text, not whether you agree with it. Some of these sentences were in the article, and some were not. In other cases, the sentence was in the article but has been changed slightly. In these cases, you should mark "no".

1. *"The true cost of the internet is not being properly charged to the end consumer" (yes).*
2. *The internet provides great benefits to people: chiefly among them being instant access to millions of websites. (yes)*
3. *Therefore, you pay additional fees on your gasoline that goes towards highway patrol. (no).*
4. *Recently, there have been cases of internet servers being overloaded, causing great disruptions to many sectors, such as the airline industry! (yes).*
5. *The main obstacle being the cost of private information security. (no).*

6. *Unsurprisingly, most people are not happy with this. (yes).*
7. *This will not be free though. (yes).*
8. *By one estimation, your user data is worth over $800 in revenue a year! (no).*
9. *Therefore, if each person were to triple their internet bill, this should cover the value of their data. (no).*
10. *Let's make the internet work better by making it more stable and accessible for all. (yes).*
11. *Are you tired of being a product? (yes).*
12. *"Every day there are nearly 3000 cases of identity theft on the internet." (no)*
13. *"Currently, many websites will have a pop-up that asks you if you consent to "cookies", this is essentially asking you if you consent to them collecting information on you." (no)*
14. *"There are still a billion people in the world without access to high-speed internet." (no)*
15. *"Some estimates suggest around 5% of people are very worried about their internet privacy." (no)*

Scoring: Participants received a point for each correct response leading to an ***argument recall*** score between (0 = no recall to 15 = perfect recall).

(See Appendix H).

Agreement: (Adapted from Banks & Brannon, 2023) (The same as study two)

"To what extent do you agree that people should have to pay twice what they currently pay for internet service? (1 = strongly disagree to 7 = strongly agree).

(See Appendix I).

Engagement: (Adapted from Banks & Brannon, 2023) (The same as study two)

Three questions were asked to assess how engaged the participants were while reading the counterattitudinal message. The self-reported engagement composite is comprised of three

items, open mind, attention, and thought. ***Open Mind:*** *"Whether you agreed or disagreed with the author's message, to what extent did you try to keep an open mind while reading their message, that said, "people should have to pay twice what they currently pay for internet service?"* (1 = no attempt to keep an open mind to 7 = complete attempt to keep an open mind). ***Attention***: *"How much attention did you pay to the author's message, that said, "people should have to pay twice what they currently pay for internet service?"* (1 = no attention to 7 = complete attention). ***Thought*****:** *"How much thought did you give to the ideas the author was proposing, that, "people should have to pay twice what they currently pay for internet service?"* (1 = no thought to 7 = complete thought).

Scoring: The scores from the three items were averaged to form the composite (1 = *no engagement* to 7 = *very engaged*) and the Cronbach's alpha score was calculated. A prior study by Banks and Brannon (2023) found this engagement composite to be a significant predictor of participants' self-reported engagement while reading a counterattitudinal message. Note that the Cronbach's alpha reliability analysis in the Banks and Brannon (2023) study found that the composite was acceptable, but on the lower end of the acceptable range (α = .72).

(See Appendix I)

Reading Time (The same as study two)

One of the main variables of interest was the length of time, in seconds, that the participants spend on the counterattitudinal message. Selective exposure studies have used time spent on the message as a measure of selective exposure, finding that participants spend more time on belief-consistent information compared to inconsistent information (Knobloch-Westerwick & Meng, 2009; Whitt et al., 2023). Therefore, longer reading times on counterattitudinal messages are typically associated with less selectivity. The Knobloch-

Westerwick and Meng (2009) study found that participants averaged 36% more time on proattitudinal information than on counterattitudinal. To gain further specificity, participants were not only timed as they read the counterattitudinal message but also were timed as they read a neutral message. The neutral message reading speed was factored into the analysis on time spent reading the counterattitudinal message.

Neutral reading time message to measure participants' reading speed (185 words): (The same as study two)

Note. The following message about the history of the internet came from the website article: *A short history of the internet,* with revisions to shorten the article (National Science and Media Museum, 2020).

"Please read the following article:

A short history of the internet

President Dwight D. Eisenhower formed the Advanced Research Projects Agency (ARPA) in 1958, bringing together some of the best scientific minds in the country. Among ARPA's projects was to test the feasibility of a large-scale computer network. Lawrence Roberts was responsible for developing computer networks at ARPA, working with scientist Leonard Kleinrock. Roberts was the first person to connect two computers. When the first network was developed in 1969, Kleinrock successfully used it to send messages to another site, and the ARPA Network—or ARPANET—was born.

Once ARPANET was up and running, it quickly expanded. By 1973, 30 academic, military and research institutions had joined the network, connecting locations including Hawaii, Norway and the UK. As ARPANET grew, a set of rules for handling data needed to be put in place. In 1974, computer scientists Bob Kahn and Vint Cerf invented a new method called

transmission-control protocol, popularly known as TCP/IP, which essentially allowed computers to speak the same language. After the introduction of TCP/IP, ARPANET quickly grew to become a global interconnected network of networks, or 'Internet'."

(See Appendix J).

Demographics: (The same as study two)

Participants were asked to report their age, race, sex, and education level.

Age: *"What is your age? (e.g., 24)"* Free response, with restrictions that participants must write using numbers between 18 to 120.

Education: *"What is the highest level of school you have completed or the highest degree you have received?"*

Response choices of: Less than high school degree, High school graduate (high school diploma or equivalent including GED), Some college but no degree, Associate degree in college (2-year), Bachelor's degree in college (4-year), Master's degree, Doctoral degree Professional degree (JD, MD).

Race: *"Choose one or more races that you consider yourself to be:"*

Response choices: White, Black or African American, American Indian or Alaska Native, Asian, Native Hawaiian or Pacific Islander, Hispanic, Other (free response).

Sex: *"What is your biological sex?"*

Response choices: Male, Female, Prefer not to respond.

(See Appendix K).

Procedure

Participants started the survey by reading and agreeing to informed consent (Appendix B), passing a robot captcha, then taking the pre-test to indicate to what degree they agree with

the idea that internet bills should be doubled. After filling out the pre-test agreement, participants were randomly assigned into one of the 6 message frames and asked to pay close attention: (*1. Control, 2. Be Unbiased, 3. Consider the opposite, 4. Cognitive Dissonance, 5. Self-Affirmation, 6. Inoculation*). To increase the likelihood that participants engaged with the message frame, at the bottom of the page was a short open-response box that told participants: *"Type in the main point of the message above (Hint: it is the bolded and underlined title)."* Following the intervention message participants were asked a simple question to gauge if they paid attention to the message (i.e., "*What was the main theme of the message you just read?"*). There were four multiple-choice answer choices, with only one being correct.

After the message frame, participants were presented with 6 article headlines and indicated how interested they are in reading the full-length article (1 = *not at all interested* to 7 = *very interested*). These responses were averaged into a selective exposure score for each participant. Participants were then presented with the counterattitudinal message. Cover story: because it might strike people as odd that they were being presented a message that they did not pick, on the page preceding the counterattitudinal message, participants read the following: *"We want to see what people are interested in reading, that is why we asked you to indicate which article titles you are interested in reading. Until we know what everyone says, we will give people a random message. In the future, we will take into account what people say."* The Qualtrics platform unobtrusively logged the time that participants spent on the message page.

After reading the counterattitudinal message participants were presented with the attention check, argument recall, and self-reported engagement items. Participants were then presented with a message about the history of the internet to unobtrusively measure their reading speed. Finally, participants completed the demographic questionnaire (i.e., race, age, sex,

education, see Appendix K for questions), and were debriefed (see Appendix L for debriefing message).

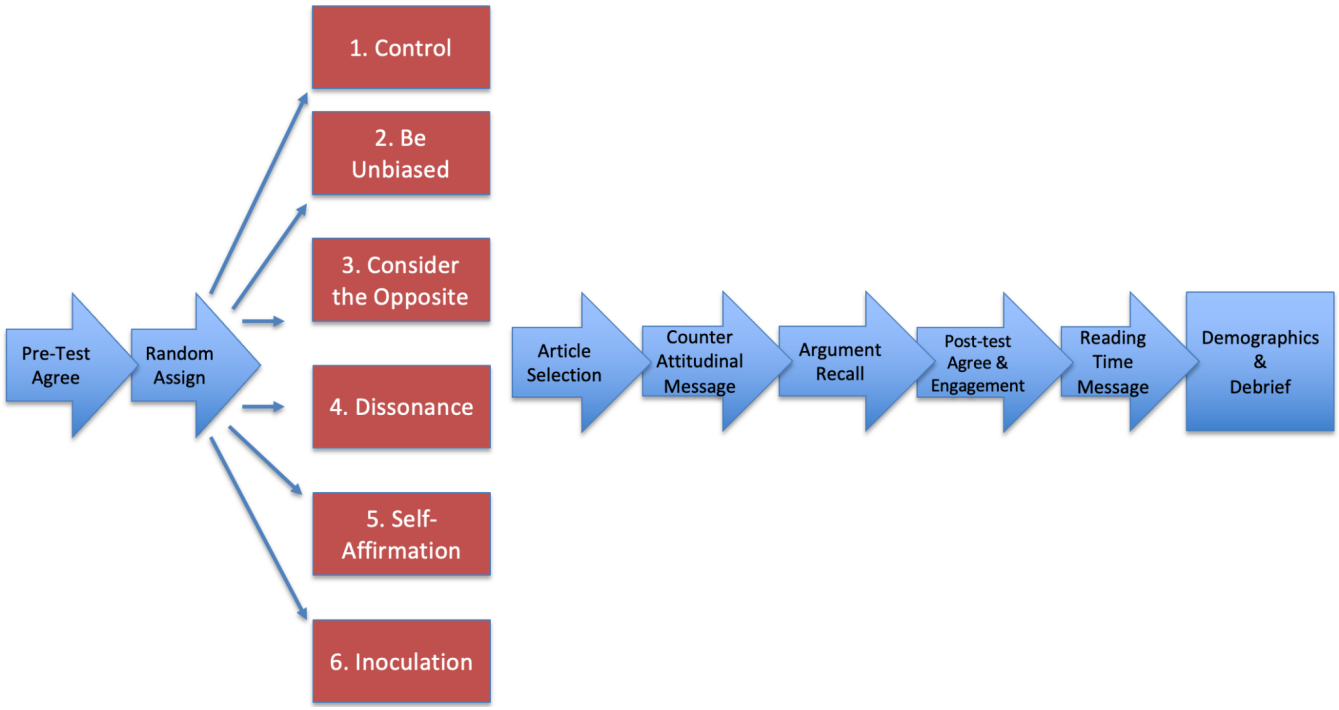


Figure 4. Study 1 Survey Flow

Study 1 Results

Data Preparation. 462 Participants completed the survey. To ensure that the counterattitudinal message was counterattitudinal, participants who selected agreement or neutrality, 4 or higher on the pretest measure were excluded (n = 55): *"To what extent do you agree that people should have to pay twice what they currently pay for internet service?"* (1 = strongly disagree to 7 = strongly agree).

Additionally, 1 participant who failed the attention check was excluded (see Appendix E for attention check questions). In total 56 participants were excluded from analyses, resulting in the final sample size (N = 406). According to the power analysis (see Chapter 2: Participants: inclusion and exclusion criteria), a final sample size of 402 was necessary. Therefore, the goal for the optimal sample size was achieved. The participants were distributed across the 6 frames as follows: 1. control (n = 69), 2. be unbiased (n = 69), 3. consider the opposite (n = 64), 4. cognitive dissonance (n = 70), 5. self-affirmation (n = 63), and 6. inoculation (n = 69) (see Table 1). The Jamovi statistical program (The jamovi project, 2022) was utilized for statistical analysis.

Table 1. Study 1. Frequencies of Frame

Frame	Counts	% of Total	Cumulative %
1.Control	69	17.0 %	17.0 %
2.Be unbiased	71	17.5 %	34.5 %
3.Consider the opposite	64	15.8 %	50.2 %
4.Cognitive dissonance	70	17.2 %	67.5 %
5.Self-affirmation	63	15.5 %	83.0 %
6.Inoculation	69	17.0 %	100.0 %

Hypothesis 1. It was predicted that *"One or more of the experimental message frames will be more effective than the control at mitigating selective exposure."* There are four main dependent variables of interest that could each independently indicate a reduction in selective exposure: selective exposure headlines, reading time, argument recall, and engagement.

Selective Exposure Headlines Data Preparation. For a frame to be effective at mitigating selective exposure, and by extension supporting hypothesis 1, it needs to produce a lower score than the control frame (1 = low selective exposure to 7 = high selective exposure). Participants were told: *"The following article titles are about a proposal to double internet service bills. For each of the following article titles please indicate how interested you would be to read the full-length article."* (1 = not at all interested to 7 = very interested). The article titles are listed below in the following format: SE1 is selective exposure article 1, it is a counterattitudinal article, therefore the (R) means that it was reverse coded (see Table 2).

SE1(R) Counterattitudinal: *"Say YES! Paying Larger Internet Bills Will Actually Help Us Out!"* (*M* = 4.57, *SD* = 2.06).

SE2(R) Counterattitudinal: *"Several Reasons Why Doubling Your Internet Bill is Beneficial!"* (*M* = 4.28, *SD* = 2.12).

SE3(R) Counterattitudinal: *"Why One Instagram Influencer Supports Doubling $$$ Spent on Internet Service Bills!"* (*M* = 5.17, *SD* = 1.94).

SE4 Proattitudinal: *"Why charge us more? These Internet Service Fees Are Getting Out of Hand!"* (*M* = 4.28, *SD* = 2.04).

SE5 Proattitudinal: *"At First it Sounded Bad, and it is Still Bad, Say NO! to Doubling Internet Service Charges!"* (*M* = 4.23, *SD* = 2.01).

SE6 Proattitudinal: "*Social Media Influencers Speak Out Against Internet Bill Increases"* (*M* = 3.57, *SD* = 2.04).

The proattitudinal and counterattitudinal scores were combined into a composite score by averaging their ratings. Higher scores mean that the participant was less likely to be willing to view counterattitudinal information (1 = low selective exposure to 7 = high selective exposure). The average selective exposure headline score was (*M* = 4.34, *SD* = 1.07).

Table 2. Selective Exposure Headlines Means and Standard Deviations

Article Titles	*N*	Mean	Median	*SD*
1. Say Yes	406	4.57	5.00	2.06
2. Several Reasons	406	4.28	4.00	2.12
3. Why one	406	5.17	6.00	1.94
4. Why charge	406	4.28	5.00	2.04
5. At first	406	4.23	4.50	2.01
6. Social Media	406	3.52	4.00	2.04

Selective Exposure Headlines Analyses. To test this dependent variable, an ANCOVA test was conducted with message frame as the factor, pretest agreement as covariate, and selective exposure headlines as the dependent variable. The main effect of frame had marginal significance, $+F(5, 399) = 2.14$, $p = .060$, $\eta^2p = 0.03$ (see Table 3). The effect size was small. A planned contrast revealed significant differences between the *control* ($M = 4.57$, *SE*, 0.13), and *consider the opposite* frames ($M = 4.12$, $SE = 0.13$), $t(399) = 2.46$, $p = .014$, $d = 0.43$ (see Table 4 for contrasts; see Table 5 for estimated marginal means). The effect size was medium. Suggesting that the *consider the opposite* frame reduced participants' selective exposure tendency more than those in the control frame. Additionally, a planned contrast between the *control* ($M = 4.57$, *SE*, 0.13), and the *inoculation* frame ($M = 4.15$, $SE = 0.13$) was significantly different, $t(399) = 2.32$, $p = .021$, $d = 0.40$. The effect size was medium. Results should be interpreted with caution due to the marginal significance of the overall *F* test ($p = .060$),

however, these data are suggestive that hypothesis 1 is tenuously supported. See Figure 5 for a visual representation of the results.

Table 3. ANCOVA for Selective Exposure Headlines

	SS	df	*F*	*p*	$\eta^2 p$
Model	13.12	6	1.95	.072	0.03
Frame	12.01	5	2.14	.060	0.03
Pretest agreement	0.66	1	0.59	.442	0.01
Residuals	448.24	399			
Total	461.36	405			

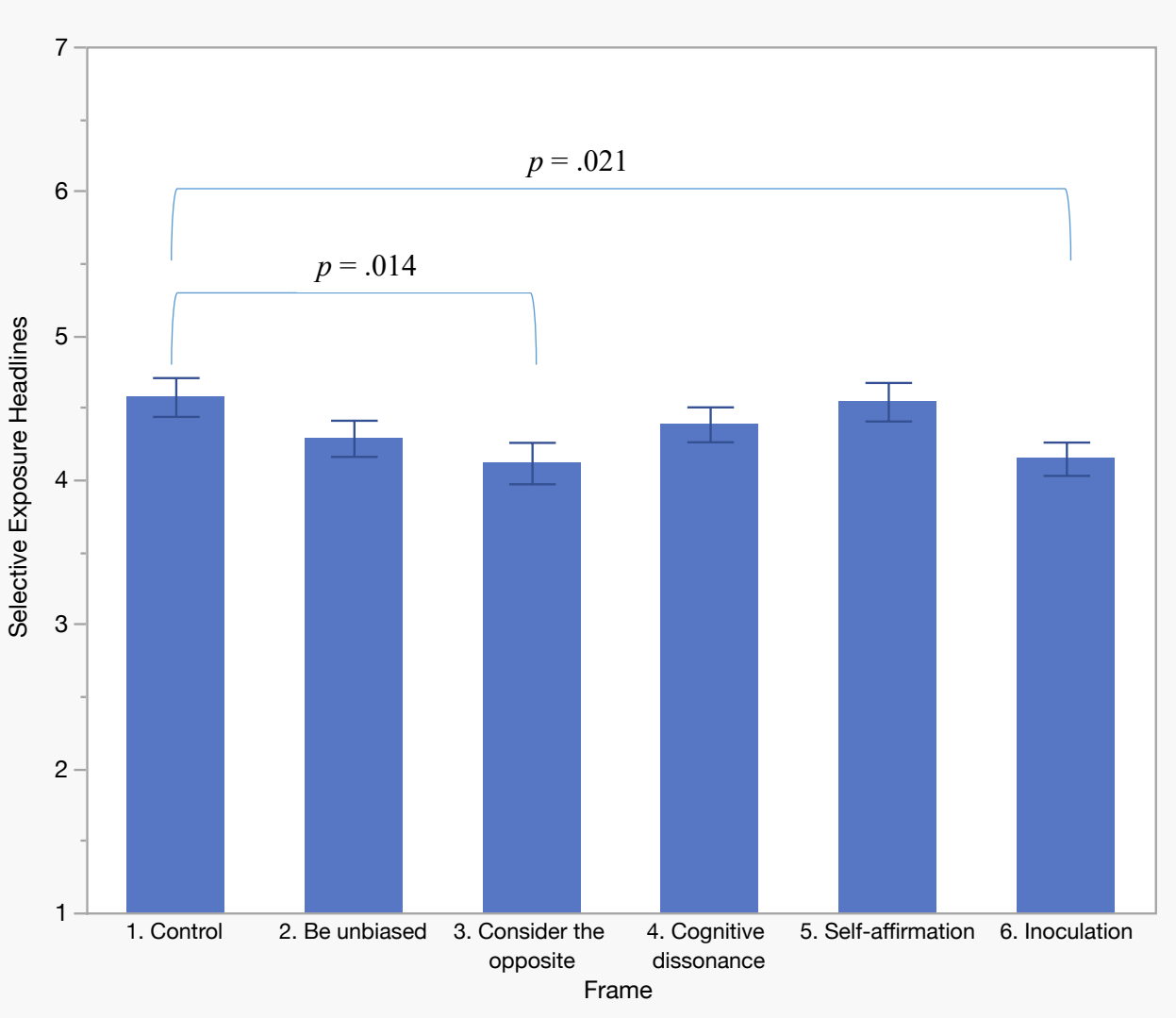
Table 4. Contrasts Between Frames for Selective Exposure Headlines

Comparison								
Frame		Frame	Difference	*SE*	*t*	df	*p*	*d*
1.Control	-	2.Be unbiased	0.29	0.18	1.63	399	.105	0.28
1.Control	-	3.Consider the opposite	0.45	0.18	2.46	399	**.014**	0.43
1.Control	-	4.Cognitive dissonance	0.18	0.18	1.02	399	.307	0.17
1.Control	-	5.Self-affirmation	0.04	0.19	0.20	399	.841	0.03
1.Control	-	6.Inoculation	0.42	0.18	2.32	399	**.021**	0.40

Note. Significant results are bolded.

Table 5. Estimated Marginal Means for Selective Exposure Headlines

			95% Confidence Interval	
Frame	*M*	*SE*	Lower	Upper
1.Control	4.57	0.13	4.32	4.82
2.Be unbiased	4.28	0.13	4.03	4.53
3.Consider the opposite	4.12	0.13	3.86	4.38
4.Cognitive dissonance	4.39	0.13	4.14	4.64
5.Self-affirmation	4.54	0.13	4.27	4.80
6.Inoculation	4.15	0.13	3.90	4.41



Note. Error bars were constructed using 1 standard error from the mean.

Figure 5. Selective Exposure Headlines Score by Frame

Reading Time Data Explanation: One of the main variables of interest was the length of time, in seconds, that the participants spent on the 530-word counterattitudinal message: *"Several Reasons Why Doubling Your Internet Bill is Beneficial!"* (see Appendix G) (*M* = 139, *SD* = 118). To gain further specificity, participants were also timed as they read a 185-word neutral message: *"A short history of the internet"* (see Appendix J) (*M* = 71.3, *SD* = 80.44). The time that participants spent on these pages was unobtrusively measured using the page timing

feature on Qualtrics (Qualtrics, Provo, UT). The longer that a participant spent on the counterattitudinal message (in seconds), the more that their selective exposure was reduced. Therefore, for this variable to support hypothesis 1, an experimental message frame would need to demonstrate that significantly more time was spent on the counterattitudinal message than the control frame.

Reading Time Analyses. An ANCOVA test was conducted with frame as the factor, with neutral reading time and pretest agreement as covariates, and counterattitudinal reading time as the dependent variable. The main effect of frame was not significant, $F(5, 398) = 0.19$, $p = .967$, $\eta^2p < 0.01$ (see Table 6). Therefore, the reading time variable did not support hypothesis 1. See Table 7 for the estimated marginal means.

Table 6. ANCOVA for Reading Time

	Sum of Squares	df	Mean Square	*F*	*P*	η^2p
Overall model	763011	7	109002	9.51	< .001	
Frame	11498	5	2300	0.19	.967	0.01
Pretest agreement	71144	1	71144	5.86	.016	0.02
Neutral reading time	680368	1	680368	56.05	< .001	0.12
Residuals	4.83e+6	398	12138			

Table 7. Estimated Marginal Means for Reading Time

			95% Confidence Interval	
Frame	*M*	*SE*	Lower	Upper
1.Control	131	13.3	105	158
2.Be unbiased	147	13.2	121	173
3.Consider the opposite	135	13.8	108	162
4.Cognitive dissonance	137	13.2	111	163
5.Self-affirmation	139	13.9	111	166
6.Inoculation	145	13.3	119	171

Argument Recall Data Preparation. A composite variable was created for argument recall. The higher the score that the participant received, the better their argument recall. Participants received a point for each correct response leading to an argument recall score between (0 = no recall to 15 = perfect recall). In order for the argument recall variable to support hypothesis 1, the experimental message frame needed to be significantly better at recalling the arguments than the control frame.

The participants were given the following instructions and items. Note that the "yes" or "no" in parentheses indicates whether or not that particular sentence came completely from the text. (See Appendix H).

"Were the following sentences in the text you read? (Yes or No).

You are indicating whether or not the sentences were in the text, not whether you agree with it. Some of these sentences were in the article, and some were not. In other cases, the sentence was in the article but has been changed slightly. In these cases, you should mark "no"."

1. *"The true cost of the internet is not being properly charged to the end consumer."* (yes). (*n* = 366 correct, *n* = 40 incorrect).
2. *The internet provides great benefits to people: chiefly among them being instant access to millions of websites.* (yes). (*n* = 366 correct, *n* = 40 incorrect).
3. *Therefore, you pay additional fees on your gasoline that goes towards highway patrol.* (no). (*n* = 258 correct, *n* = 148 incorrect).
4. *Recently, there have been cases of internet servers being overloaded, causing great disruptions to many sectors, such as the airline industry!* (yes). (*n* = 318 correct, *n* = 88 incorrect).
5. *The main obstacle being the cost of private information security.* (no). (*n* = 283 correct, *n* = 123 incorrect).
6. *Unsurprisingly, most people are not happy with this.* (yes). (*n* = 332 correct, *n* = 74 incorrect).
7. *This will not be free though.* (yes). (*n* = 295 correct, *n* = 111 incorrect).
8. *By one estimation, your user data is worth over $800 in revenue a year!* (no). (*n* = 363 correct, *n* = 43 incorrect).
9. *Therefore, if each person were to triple their internet bill, this should cover the value of their data.* (no). (*n* = 364 correct, *n* = 42 incorrect).
10. *Let's make the internet work better by making it more stable and accessible for all.* (yes). (*n* = 306 correct, *n* = 100 incorrect).

11. *Are you tired of being a product?* (yes). (*n* = 280 correct, *n* = 126 incorrect).
12. *"Every day there are nearly 3000 cases of identity theft on the internet."* (no). (*n* = 370 correct, *n* = 36 incorrect).
13. *"Currently, many websites will have a pop-up that asks you if you consent to "cookies", this is essentially asking you if you consent to them collecting information on you."* (no) (*n* = 361 correct, *n* = 45 incorrect).
14. *"There are still a billion people in the world without access to high-speed internet."* (no) (*n* = 332 correct, *n* = 74 incorrect).
15. *"Some estimates suggest around 5% of people are very worried about their internet privacy."* (no) (*n* = 378 correct, *n* = 28 incorrect).

The points from the 15 items of the argument recall measure were summed for each participant. The average argument recall score was (*M* = 12.2, *SD* = 2.05).

Argument Recall Analyses. An ANCOVA test was conducted with frame as the factor, pretest agreement as covariate, and argument recall as the dependent variable. The main effect of frame was not significant, $F(5, 399) = 1.40$, $p = .222$, $\eta^2p = 0.02$ (see Table 8).

Table 8. ANCOVA for Argument Recall

	Sum of Squares	df	Mean Square	*F*	*p*	η^2p
Overall model	37.18	6	6.20	1.47	.187	
Frame	29.29	5	5.86	1.40	.222	0.02
Pretest agreement	7.90	1	7.90	1.89	.170	0.01
Residuals	1666.51	399	4.18			

Table 9. Estimated Marginal Means for Argument Recall

			95% Confidence Interval	
Frame	*M*	*SE*	Lower	Upper
1.Control	11.7	0.25	11.2	12.2
2.Be unbiased	12.5	0.24	12.0	12.9
3.Consider the opposite	12.5	0.26	12.0	13.0
4.Cognitive dissonance	12.2	0.24	11.7	12.7
5.Self-affirmation	12.2	0.26	11.7	12.8
6.Inoculation	12.4	0.25	11.9	12.9

Engagement Composite Data Preparation. Participants were asked three questions regarding how engaged they were when reading the counterattitudinal message. To support hypothesis 1, participants in any one of the experimental frames should be more engaged than participants in the control frame. A composite variable for engagement was created from the variables: open-mind (M = 5.33, SD = 1.73, Mdn = 6.00), attention (M = 6.07, SD = 1.27, Mdn = 7.00) and thought (M = 5.37, SD = 1.56, Mdn = 6.00). The scores from the three items were averaged to form the composite (1 = no engagement to 7 = very engaged) (M = 5.59, SD = 1.26, Mdn = 6.00) and the Cronbach's alpha score was found to be acceptable (α = .76). See Table 10 for the means and standard deviations of the engagement composite and the three items. (See Appendix I for the full items).

Table 10. Means and Standard Deviations for the Engagement Composite and its Three Items: Open-mind, Attention and Thought.

	N	Mean	Median	*SD*
Engagement	406	5.59	6.00	1.26
Open-mind	406	5.33	6.00	1.73
Thought	406	5.37	6.00	1.56
Attention	406	6.07	7.00	1.27

Engagement Analyses: An ANCOVA test was conducted with message frame as the factor, pretest agreement as covariate, and engagement as the dependent variable. The main effect of frame was significant, $F(5, 399) = 2.90$, $p = .014$, $\eta^2p = 0.04$ (see Table 11). The overall effect size was small. A planned contrast test revealed significant differences between the *control* ($M = 5.13$, *SE*, 0.15), and *be unbiased* frames ($M = 5.65$, $SE = 0.15$), $t(399) = -2.46$, $p = .014$, $d = -0.42$ (see Table 12 for contrasts; see Table 13 for estimated marginal means; see Figure 6 for a visual representation of the results). The effect size was medium. Additionally, a planned contrast revealed significant differences between the *control* ($M = 5.13$, *SE*, 0.15), and *consider the opposite* frames ($M = 5.86$, $SE = 0.16$), $t(399) = -3.33$, $p < .001$, $d = 0.58$. The effect size was medium. Lastly, the planned contrast between the *control* ($M = 5.13$, *SE*, 0.15), and the *inoculation* frame ($M = 5.81$, $SE = 0.15$) was significantly different, $t(399) = -3.17$, $p = .002$, $d = -0.54$. The effect size was medium. These significant results support hypothesis 1, such that participants in the *be unbiased*, *consider the opposite,* and *inoculation* frames were more engaged when reading the counterattitudinal information that participants in the *control* frame.

Note that the frames *cognitive dissonance* (+p = .051) and *self-affirmation* (+p = .056) had marginal significance.

Table 11. ANCOVA for Engagement

	SS	df	*F*	*p*	$\eta^2 p$
Model	22.66	6	2.42	.026	0.04
Frame	22.63	5	2.90	**.014**	0.04
Pretest agreement	0.16	1	0.10	.747	0.000
Residuals	622.86	399			
Total	645.52	405			

Note. Significant results are bolded.

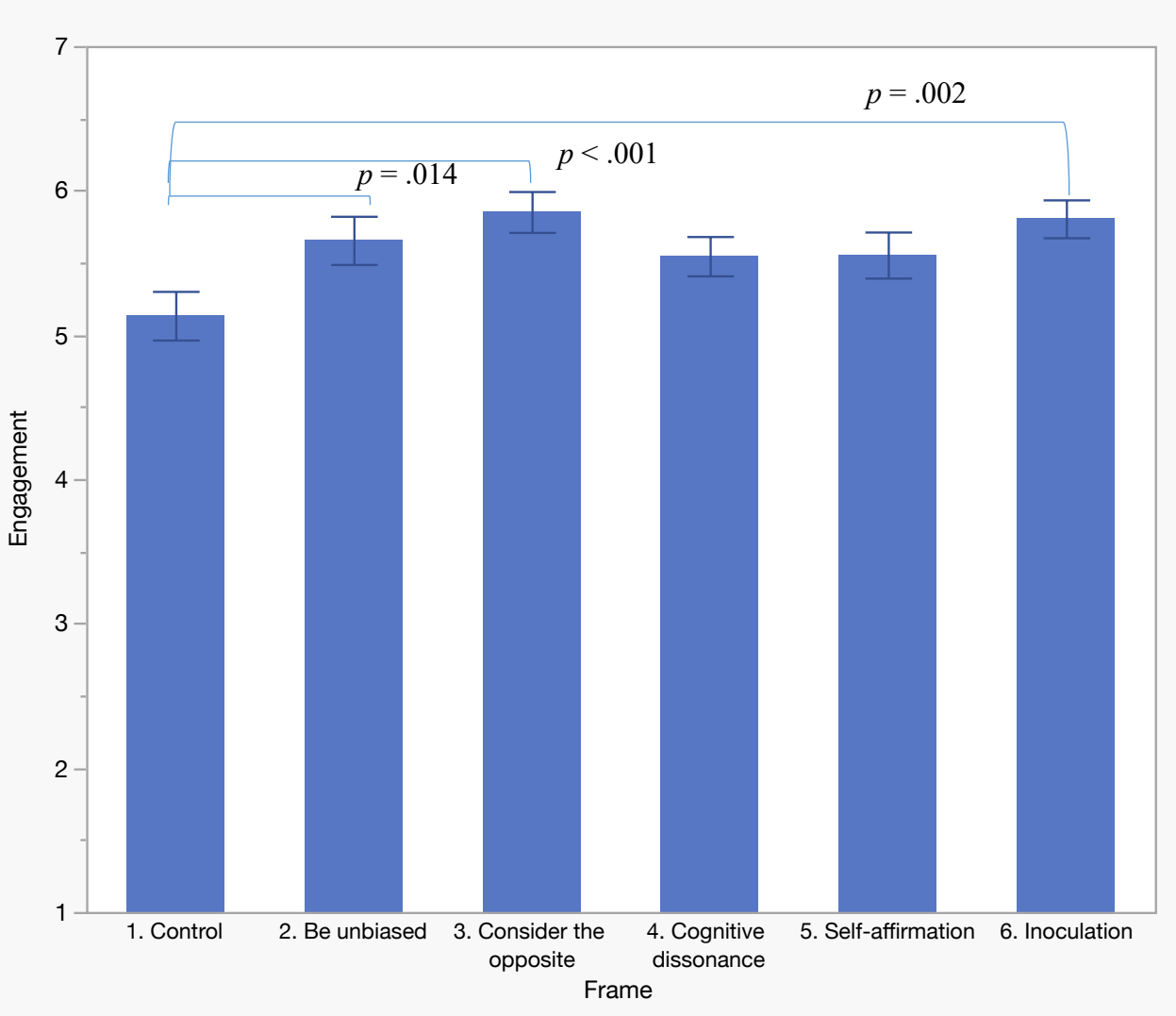
Table 12. Contrasts Between Frames for Engagement

Comparison								
Frame		Frame	Difference	*SE*	*t*	df	*p*	*d*
1.Control	-	2.Be unbiased	-0.52	0.21	-2.46	399	**.014**	-0.42
1.Control	-	3.Consider the opposite	-0.72	0.22	-3.33	399	**< .001**	-0.58
1.Control	-	4.Cognitive dissonance	-0.41	0.21	-1.96	399	.051	-0.33
1.Control	-	5.Self-affirmation	-0.42	0.22	-1.92	399	.056	-0.33
1.Control	-	6.Inoculation	-0.68	0.21	-3.17	399	**.002**	-0.54

Note. Significant results are bolded.

Table 13. Estimated Marginal Means for Engagement

			95% Confidence Interval	
Frame	*M*	*SE*	Lower	Upper
1.Control	5.13	0.15	4.84	5.43
2.Be unbiased	5.65	0.15	5.36	5.95
3.Consider the opposite	5.86	0.16	5.55	6.16
4.Cognitive dissonance	5.55	0.15	5.26	5.84
5.Self-affirmation	5.55	0.16	5.24	5.86
6.Inoculation	5.81	0.15	5.51	6.11



Note. Error bars were constructed using 1 standard error from the mean.

Figure 6. Engagement Score by Frame

Hypothesis 2: *"One or more of the experimental message frames will be more effective than the control at increasing the level of agreement with the counterattitudinal message."*

Agreement Analyses. Participants were asked the following question for both pretest agreement and after reading the counterattitudinal message they were asked the same question for posttest agreement: *"To what extent do you agree that people should have to pay twice what*

they currently pay for internet service? (1 = strongly disagree to 7 = strongly agree) (Pretest agreement: $M = 1.16$, $SD = 0.45$; Posttest agreement: $M = 1.83$, $SD = 1.29$). (See Appendix O). To test hypothesis 2 an ANCOVA test was conducted with frame as the factor, pretest agreement as covariate, and posttest agreement as the dependent variable. The main effect of frame was not significant**,** $F(5, 399) = 1.13$, $p = .344$, $\eta^2p = 0.01$ (see Table 14). Therefore, it can be concluded that participants in the experimental frames were not any more likely to agree than participants in the control frame (see Table 15 for the estimated marginal means). Thus, hypothesis 2 was not supported.

To test whether all participants in the study, irrespective of frame, increased their agreement after reading the counterattitudinal message, a paired *t*-test was conducted between pretest agreement ($M = 1.16$, $SD = 0.45$) and posttest agreement ($M = 1.83$, $SD = 1.29$). Results were significant with a moderate effect size, $t(405) = 11.00$, $p < .001$, $d = 0.54$. This suggests that the counterattitudinal message was generally effective.

Table 14. ANCOVA for Agreement

	Sum of Squares	df	Mean Square	*F*	*p*	η^2p
Overall model	71.96	6	11.99	8.40	< .001	
Frame	8.46	5	1.69	1.13	.344	0.01
Pretest agreement	63.51	1	63.51	42.43	< .001	0.01
Residuals	597.17	399	1.50			

Table 15. Estimated Marginal Means Table by Frame for Posttest Agreement, with Pretest Agreement Covaried Out.

			95% Confidence Interval	
Frame	*M*	*SE*	Lower	Upper
1.Control	1.55	0.15	1.26	1.84
2.Be unbiased	1.80	0.15	1.51	2.09
3.Consider the opposite	1.84	0.15	1.54	2.14
4.Cognitive dissonance	2.02	0.15	1.73	2.31
5.Self-affirmation	1.84	0.15	1.53	2.14
6.Inoculation	1.91	0.15	1.62	2.20

Study 1 Discussion

The primary goal of study 1 was to explore how to mitigate selective exposure (i.e., the problem of people not being willing to be exposed to counterattitudinal opinions and information). To do this, Study 1 targeted the intrapersonal motivations of selective exposure: defense (maintaining one's current attitude, belief, behavior, or self-concept), and accuracy (having a correct attitude/decision/judgment) through the use of theory-informed intervention messages to investigate which are effective at mitigating selectivity (Hart et al., 2009; Hart et al., 2020). The present study crafted and empirically tested 5 experimental message frames against a control frame to investigate which are effective at mitigating selectivity through accuracy and defense message frames (see message frames in Appendix D).

The message frames in Study 1 were: 1. Control. 2. Be unbiased (accuracy) informed participants to be unbiased when looking at information (Fischer et al., 2012; Lord et al.,1984). 3. Consider the opposite (accuracy) argued that the way to get the best result is by considering reasons why your decision may be wrong (Lord et al., 1984; Whitt et al., 2023). 4. Cognitive dissonance (defense) informed participants that it is uncomfortable, but not harmful, to be exposed to counterattitudinal information and to not just trust those feelings (Festinger, 1957). 5. Self-affirmation (defense) affirmed participants by telling them that they are open-minded (Steele, 1988). 6. Inoculation (defense) taught participants about how those who are aware of arguments on the other side of an issue are better able to defend their position (McGuire, 1961a).

Participants in Study 1 were recruited on Cloud Research Connect and were asked to indicate if they agreed that internet bills should be doubled. Only participants who disagreed with this question were included in the analyses to ensure that the research paradigm matched with the attitude of the participant. Participants were randomly assigned into 1 of the 6 message

frames. After reading the message frame, participants completed the *selective exposure headlines* task in which they reported their interest in reading 3 proattitudinal articles, and 3 counterattitudinal articles (higher scores signify higher selective exposure). Participants then read a 530-word counterattitudinal article about doubling their internet bill. While participants read, their *reading time* was logged (longer times mean less selective exposure, Knobloch-Westerwick & Meng, 2009; Whitt et al., 2023). The participants' *argument recall* score was the number of arguments they could correctly recall from the counterattitudinal message, with higher scores indicating better argument recall (i.e., lower selective exposure). Participants then indicated the extent to which they *engaged* with the counterattitudinal message (open-mind, attention, and thought, Banks & Brannon, 2023). Additionally, for hypothesis 2, the dependent variable of *agreement* was included (i.e., agreement that internet bills should be doubled).

Hypothesis 1 predicted that participants in the experimental frames would have reduced selective exposure than participants in the control frame. Importantly, a significant difference for any single one of the selective exposure dependent variables (i.e., selective exposure headlines, argument recall, reading time, engagement) would indicate support for this hypothesis. Statistical analyses found support for hypothesis 1. Specifically, the variables of selective exposure headlines and engagement were significant, but not argument recall or reading time. For the variable selective exposure headlines, the overall test had marginal significance, and the planned contrasts found that the consider the opposite and inoculation frames were significantly better at reducing selective exposure than the control frame (see Table 4). Frames targeting both the intrapersonal motivations of selective exposure, defense (inoculation) and accuracy (consider the opposite), showed some promise. For the engagement dependent variable (open-mind, attention, and thought), the main effect of frame was significant, with planned contrasts revealing that the

frames: be unbiased (accuracy), consider the opposite (accuracy), and inoculation (defense) were significantly more effective than the control frame at influencing participants to report being more engaged when reading the counterattitudinal article.

Furthermore, the consider the opposite and inoculation frames give the participant good reasons along with empirically validated strategies for reducing their exposure (Lord et al., 1984). Although the consider the opposite frame has repeatedly demonstrated effectiveness at mitigating the confirmation bias (Adame, 2016; Lord et al., 1984; van Brussel et al., 2020, 2021), the present research is the first selective exposure study we are aware of that has utilized the consider the opposite instruction as a technique to mitigate selective exposure to information.

Regarding the inoculation frame, research studies have successfully inoculated participants against information (e.g., vaccinations; Wong & Harrison, 2014; climate behaviors; van der Linden et al., 2017; and politics; Compton & Ivanov, 2013). However, these studies did not inform the participants that they were being inoculated. The contribution of the current research is that participants were willfully engaging with information in order to be better able to defend their attitudes. This is a more direct application of inoculation theory that has not been utilized before. The significant results for the inoculation frame are promising because boosting people's desire or confidence in their ability to defend may actually make them more susceptible to persuasive efforts (Albarracín & Mitchell, 2004). This can be a good thing when the information is something that people might be avoidant to, but could be beneficial to learn (e.g., threatening information about one's health, Fox & Duggan, 2013; Fox & Jones, 2009; Lo & Parham, 2010; Ropka et al., 2006; Sassenberg & Greving, 2014).

One of the interests of the study was to investigate if merely telling people to be unbiased could be effective (i.e., be unbiased message frame; Lord et al., 1984) at mitigating selectivity, or

if it was necessary to give them a more targeted strategy (e.g., consider the opposite, cognitive dissonance, inoculation). Results indicate that for the selective exposure headlines variable, it is necessary to give people a more cognitive argument along with a good strategy (consider the opposite or inoculation), given that the be unbiased frame was not effective at reducing people's selective exposure on this task. Alternatively, for the engagement variable, the significant result for the be unbiased frame suggests that simply telling people to be unbiased may induce them to report engaging more with counterattitudinal information, but it does not lead them to demonstrate any additional interest in the counterattitudinal information (e.g., selective exposure headlines task). Future research could look at including a measure of social desirability to see if participants are merely responding in socially desirable ways (social desirability is when a participant responds in ways that they think are socially appropriate, rather than truthfully; Edwards, 1957).

For hypothesis 2, it was predicted that participants in the experimental frames would agree more with the main idea of the counterattitudinal message (i.e., doubling the cost of their internet bills) than participants in the control frame. However, none of the experimental frames were effective at increasing agreement compared to the control frame. It is possible that participants found the counterattitudinal message simply too disagreeable to be persuaded by it. More will be said about the counterattitudinal message in the limitations section found in the general discussion. However, the nonsignificance of the agreement variable is not concerning because the primary goal of this study was to reduce selective exposure. It was always a longshot that participants would be more willing to agree with the message simply because they chose to interact with it. According to the message learning approach (Hovland et al., 1953), attending to a message precedes attitude change. Furthermore, elaborating on a counterattitudinal message

can lead people to strengthen their preexisting attitudes if the arguments advocating for the other side are not strong (Petty & Cacioppo, 1986).

Study 1 Theoretical Implications

Study 1 investigated several defense and accuracy theories of selective exposure in order to see if targeting them could lead towards a reduction in selective exposure. The defense motivated theories are cognitive dissonance theory, self-affirmation theory, and inoculation theory. The accuracy motivated theories are confirmation bias, and the cognitive economy model of selective exposure. Findings suggest that targeting logical, cognitive, thought processes may be the most effective mechanism for mitigating selectivity regardless of whether the underlying motivation is defense or accuracy based.

Cognitive dissonance theory (Festinger, 1957) suggests that people are selective because they want to defend their views, however, results found that the message targeting dissonance were not effective. This suggests that although dissonance mitigation/avoidance may be driving selectivity, tailoring towards it may not be a viable technique to mitigate selectivity. *Self-affirmation theory* (Steele, 1988) has suggested that people will be less selective if they are affirmed, however, in the current study, this was not the case. Because self-affirmation operates by mitigating dissonance, it tracks that if the cognitive dissonance message did not work, neither would the self-affirmation message. Interestingly, dissonance theory is the most cited theory behind selective exposure. Therefore, it was surprising that a message written specifically to mitigate dissonance was not effective at reducing selective exposure to information. Importantly, the consistent attributes in these ineffective frames are that they were attempting to reduce selectivity by manipulating participant's emotions, through making the participant either not trust feelings (cognitive dissonance frame), or to influence the participant's emotions directly (self-

affirmation frame). However, it may be necessary to give people a cognitive strategy to mitigate selectivity, rather than simply attempting to manipulate their emotions. These findings should be taken into consideration when crafting future research studies, or applying them to real-world situations (e.g., teaching critical thinking skills to students). The final defense theory in Study 1, *inoculation theory* (McGuire, 1961a) found that participants are willing to select counterattitudinal information when they are told that exposure to this information can help them defend their views (which was a logical, cognitive strategy).

Study 1 also investigated the *confirmation bias* (Nickerson, 1998), which has been stated as one of the main drivers of selective exposure (Hart et al., 2009) and found that it can be effectively mitigated through the *consider the opposite* technique (Lord et al., 1984). In addition, the *cognitive economy model* (Fischer et al., 2012) suggests that people are selective by default; therefore, a message frame targeted it by asking participants to *be unbiased* to see if merely drawing attention to it would reduce their selectivity (Lord et al., 1984). Although the be unbiased frame worked to boost participant's self-reported engagement, it was not effective for the selective exposure headlines task, which is the more common measure of selectivity in the literature (Hart et al., 2009). Conversely, to get people to select counterattitudinal information, they may need to be persuaded via a cognitive strategy (e.g., consider the opposite).

Therefore, both intrapersonal motivators of selective exposure, accuracy and defense, served as useful motivations for intervention frames to target. These findings demonstrate that people are willing to engage with information when they are told that this information has value. Surprisingly, although the finding from Hart et al. (2009) that people are more than twice as likely to be validated in their current feelings than to be correct may be what is driving selectivity, targeting feelings might not be effective for mitigating selectivity. In fact, targeting

logical, cognitive, thought processes may be the most effective mechanism for mitigating selectivity regardless of whether the underlying motivation is defense or accuracy based.

Cognitive vs Affective Message Frames: A More Useful Framework?

Study 1 categorized the message frames as either accuracy based or defense based. However, the common elements between the significant frames (be unbiased, consider the opposite, inoculation) are that they have logical arguments (i.e., cognitive), and do not talk about feelings (i.e. affective; Clarkson et al., 2011). Alternatively, the cognitive dissonance message (frame 4) and self-affirmation (frame 5) message both talked about feelings. In frame 4, participants were told not to trust these feelings, that "feelings aren't facts", and in frame 5 participants were told that they might "feel kind of bad" when people challenge things they feel strongly about. The nonsignificant results of the affective messages (cognitive dissonance and self-affirmation) demonstrate that within this study, the cognitive approach to mitigating selective exposure was a more fruitful tactic than the affective approach. In fact, going further into the affective framework may elucidate why the affective frames were not effective. Specifically, in message frames 4 (cognitive dissonance) and 5 (self-affirmation) participants were informed that sometimes they may feel bad. However, in retrospect this could have primed the expectation of negative feelings, which have been shown to increase selectivity (Dorison et al., 2019). It is possible that priming feelings may not be a good way of reducing selective exposure. In fact, a recent study on selective exposure and affect (Dorison et al., 2019) found that people who engaged in negative "affective forecasting" (i.e., they anticipated feeling badly) limited their future exposure to counterattitudinal information.

The reasons why this may be a more useful framework for Study 1 is that although defense is typically associated with attitudes that people feel emotional about, the inoculation

frame was geared towards defense but through a logical (cognitive) route. Although defense in selective exposure is typically explained as a technique to mitigate or avoid negative affect (cognitive dissonance, Festinger, 1957), the inoculation frame did not mention affect, instead it argued for a more logical way (cognitive) of defending ones' attitudes. One interesting component here is that the idea of selective exposure is typically explained through the lens of cognitive dissonance theory (Festinger, 1957), such that people are selective because they are attempting to mitigate their dissonance. Self-affirmation is an extension of dissonance theory (Steele, 1988). Therefore, in this study, the two frames for countering dissonance were not effective. Although selective exposure was originally framed as a dissonance mitigation technique, results from Study 1 align with recent research that selective exposure can be motivated by other mechanisms (e.g., confirmation bias; Hart et al., 2009) and mitigated through messages targeting those motivations.

Study 1 Limitations

Notwithstanding the contributions of Study 1, there were a number of limitations that hampered the current research (i.e., sample issues, all participants may have been accuracy motivated, only 1 attitude topic, and there was only 1 attitude topic). These limitations also apply to Study 2, therefore, they will be covered in the general discussion.

Study 1 Future Directions

The discussion of future directions that pertain to both Study 1 and Study 2 are found in the general discussion. The following future directions apply to unique aspects of Study 1.

Investigate the cognitive vs affective paradigm further. Given the finding that the cognitive dissonance and self-affirmation messages were not effective, it may be tempting to discard them. Instead, future research should construct the affective messages to give a positive

spin, instead of negative. For example, the self-affirmation frame could inform the participant that they are an open-minded person, and that it can feel good to consider things from multiple perspectives as they will feel good knowing they have all the information in order to make the best decision. This could help the participant to feel affirmed (thereby mitigating dissonance).

Adjustments to the inoculation frame. Although the inoculation frame demonstrated effectiveness, the small effect sizes indicate that there is room to improve the message. The inoculation message is informing participants that they can better defend themselves from the message, but they are not necessarily aware of the underlying theory behind it (i.e., inoculation theory; McGuire, 1961a). Informing participants about inoculation, through a technique called: *psychoeducation* (Whitt et al., 2023), where the message teaches the participant about the psychological concept and then gives them advice for how to apply it, could be an effective strategy. Making this message more explicit in communicating psychological theory could help boost people's defensive confidence even higher, and as Albarracín and Mitchell (2004) observed, higher defensive confidence can lead to increased exposure to counterattitudinal information.

Adjustments to cognitive dissonance and self-affirmation frames. Given the finding that the affective messages were not effective, future research should change these messages. One such way is by informing participants that they may feel better when encountering counterattitudinal information than they expect. This is a real finding from a series of experiments (Dorison et al., 2019, studies 4 and 5) that found success at reducing selective exposure to a counterattitudinal political paradigm by informing participants about the findings from the earlier study (i.e., that people thought they would feel worse than they actually would, and that they agreed with more of the information than they forecasted). Participants who

received the intervention message showed a reduction on a selective exposure task by 26%. This is especially promising because political topics have repeatedly demonstrated strong selective exposure effects relative to other topics (Hart et al., 2009). This demonstrates that people may be open to counterattitudinal information when they are told that exposure may not be as uncomfortable as they might expect.

Combine elements from significant frames into one single message frame. The experimental frames each had a different focus, in order to tease apart the components for a theoretical reason. However, it is possible that a more effective message could be crafted that utilizes elements from each of the successful frames. An example message could look like this: *"Try to be unbiased by considering the opposite, furthermore, being aware of the arguments on the other side of an issue (inoculation) can help you better defend your position."* An intervention message with these elements could be strong without needing to compromise brevity. Furthermore, a future study could investigate adding one aspect of the message at a time to see which aspects make the message more or less persuasive. Research has found that adding weak arguments to a strong message can cause the message to be less persuasive than a message with solely strong arguments (Obermaier & Koch, 2024). Therefore, it is crucial to investigate which arguments make the overall message more or less impactful.

Study 1 Conclusion

Results from Study 1 found that short intervention messages that ask people to consider the opposite, or to look at counterattitudinal information to better defend themselves (i.e., inoculation frame) are effective at mitigating selective exposure across two dependent variables: selective exposure headlines and engagement. Furthermore, a message frame asking participants to be unbiased persuaded them to engage more with a counterattitudinal message. Because

selective exposure has to do with exposure, and not necessarily with persuasion, or cognitive engagement, it is not surprising nor problematic that the other variables (argument recall, time spent on the message, or agreement) did not emerge as significant. Given that the significant frames had logical cognitive arguments, and the nonsignificant frames had an affective focus (i.e., “you may feel bad”, “feelings aren’t facts”), it is possible that cognitive arguments were more effective than affective arguments for boosting exposure to messages pertaining to the attitude topic of internet bills. Although certain limitations, such as the online participant pool, and socially desirable responding were present, Study 1 still proved informative. Given these results, future research should investigate intervention frames that have cognitive arguments across more attitude-domains. As discussed in the introduction, there are many reasons why selective exposure is problematic, and why so many researchers have called for investigating how to mitigate it. Therefore, the present study adds its voice to call for more research on mitigating selective exposure.

Chapter 3 - Study 2

Literature Review

Study 2 investigated how to mitigate selective exposure to information from an **interpersonal perspective** by exploring how to reduce selective exposure when there is a motivation to manage impressions. This literature review will discuss impression management and its relationship to selective exposure. An integral part of this section is a review about the personality trait *self-monitoring* (SM) and how people high in SM are particularly concerned with their impression management (Snyder, 1974).

More on impression management motivations for selective exposure:

It is argued that most research on selective exposure has been overly concerned with the self, looking primarily at intrapersonal drivers of selective exposure (i.e., avoidance of negative affect that accompanies dissonance), while neglecting the interpersonal driver of impression management (Moore et al., 2023). Indeed, there have been many calls to study impression management's effects on selective exposure (Hart et al., 2009; Hart et al., 2020; Moore et al., 2023). *Impression management theory* (Tedeschi et al., 1971) explains that people adjust their attitudes to attain relational goals, specifically influencing others to view them as more consistent/credible. According to *impression management,* people do not inwardly change their attitudes, they merely display the socially desirable attitude towards others (Harmon-Jones & Mills, 1999, 2019; Tedeschi et al., 1971). People frequently want to convey certain impressions of the self that portray certain values in order to demonstrate consistency. Therefore, impression management is an *interpersonal* driver of selective exposure because it is concerned with the social ramifications, rather than an *intrapersonal* driver concerned with accuracy or defense (for intrapersonal drivers see Study 1).

Accordingly, people frequently select information to display an impression that is consistent with their target audience (e.g., selecting pro-choice information when in the presence of people who endorse pro-choice or selecting pro-life information when around people who endorse pro-life). Hart et al. (2020) tested an intervention of social signaling where participants engaged with information in a way to signal to others what beliefs they held. Results found evidence that people's tendency to be selective is moderated by what that information would display to others about their identity. One of the most important findings was that people selected different information depending on whether selecting the information was done privately or was displayed in public. Indeed, people differ in their consumption of information in private than in public when they are worried about the impression that it would convey to others if seen consuming that information (Earl et al., 2015). Specifically, Earl and colleagues found that people were less likely to read a pamphlet about stigmatizing health information if they were reading the information in the public view of others rather than in private. This is consistent with a study by Adams et al. (2018) who found that when people were told that the information they consumed displayed their commitments, they were more likely to prefer attitudinally consistent information so as to be seen as more consistent.

Further, people may engage in selective behaviors as a tool to be liked more by others (Dardenne & Leyens, 1995). Specifically, Dardenne and Leyens (1995) in a study where the participants were asked to take on the role of an interviewer found that participants adaptively changed whether they searched for confirmatory information that would confirm their attitude about the personality of an interviewee or disconfirmatory information that would help them attain a more accurate profile. Specifically, asking a confirming question would make the interviewee like the interviewer (the participant in the study) more, so they asked the confirming

question rather than the disconfirming one. These results suggested that people cared more about the impression that asking the question would make rather than the accuracy. In fact, when people anticipate having a conversation, they tend to engage more with the information that supports positions of their conversation partner (Canon, 1964; Freedman, 1965) and to move their attitudes more in the direction of the perceived stance of that person (Chen et al., 1996; Cialdini et al., 1976; McFarland et al., 1984; Tetlock, 1985). A study by Chen et al. (1996) suggests that impression management motivations can be stronger than accuracy or defense motivations. In Chen et al.'s (1996) study, participants were told that they would be interacting with someone who held a counterattitudinal position. People who were impression-management motivated were more likely to change their attitude in the direction of the person they were about to have a discussion with than those who were accuracy or defense motivated.

There is a fitting term that encapsulates the concept of getting others to like oneself: *ingratiation* (Jones & Pittman, 1982). Ingratiation is any behavior or act done to facilitate others' liking of oneself (e.g., being perceived as likable, credible, trustworthy). Indeed, one of the main studied aspects of impression management is ingratiation. Recent research investigated the extent that people will change their selection behaviors in order to be liked by others (i.e. ingratiation; Moore et al., 2023). Specifically, Moore et al. (2023) observed that participants who consumed outgroup information were rewarded by outgroup members (i.e., given more money and boosted their reputation by viewing them as more trustworthy). Additionally, participants were perceived better by outgroup members when they consumed outgroup (counterattitudinal) information, than they were rewarded by their own ingroup for consuming ingroup information. Further, people have been influenced to express attitudes that were in alignment with a person they were accountable to (Tetlock, 1992, 1985).

One research study on selective exposure and influence (Walther et al., 2010) investigated people's goals at being likable to see how that influenced selective exposure. Walther and colleagues found that people with higher goals of being liked were more likely to expose themselves to information that they believed their discussion partner endorsed. Additionally, people who were motivated to appear likable gave greater consideration to recommendations and were less likely to prefer consistent articles than those in the defense message frame (Winter et al., 2016). This suggests that those who are trying to manage their impression to be perceived as likable will reduce their selective exposure tendencies when it is socially advantageous to do so.

A recent selective exposure study (Whitt et al., 2023) found that a message frame based on impression management theory was effective at mitigating selectivity (Whitt et al., 2023). Specifically, people who were motivated to appear likable gave greater consideration to recommendations and were less likely to prefer consistent articles. Given these results, one promising, yet-to-be-tested technique for mitigating selective exposure is to inform people that they could be liked by others if they engage with information from the other person's side (i.e., counterattitudinal information). Further, these results may be enhanced for people who particularly care more about the impressions they make on others, specifically, those higher in self-monitoring (Snyder, 1974). This personality trait will now be discussed.

A key variable of Impression Management: Self-Monitoring (SM)

Some people in particular are very concerned with how they come across to others, and therefore more likely to manage the impression they make on others, these are people high in the personality trait: *self-monitoring* (Snyder, 1974). The *self-monitoring* (SM) individual difference variable measures how much people self-monitor the impression they are making on others

(Snyder 1974; Snyder & Gangestad, 1986). Specifically, the 18-item self-monitoring scale measures the degree to which people *"can and do observe and control their expressive behavior and self-presentation"* (Snyder & Gangestad, 1986, p. 125). The scale contains statements that participants either endorse or deny: *"I would probably make a good actor"* and *"I guess I put on a show to impress or entertain others".* High self-monitors care a great deal about how they are perceived, whereas low self-monitors are not as concerned about what people think about them. Although there have been some criticisms of the psychometric properties of the scale (Briggs et al., 1980; Briggs & Cheek, 1988; Wilmot, 2015), it has still demonstrated predictive utility (Briggs & Cheek, 1988; Graeff, 1996; Lavine & Snyder, 1996; Paek et al., 2012; Shavitt et al., 1992; see DeBono, 2006 for a review).

There is an extensive literature investigating self-monitoring and impression management (Bolino & Turnley, 2003; DeBono, 2006; Harnish & Bridges, 2016; Turnley & Bolino, 2001). A review on the self-monitoring personality measure found that people can be identified by their motivation to express *socially-adjustive attitudes* (high SM), or *value-adjustive attitudes* (low SM) (DeBono, 2006). *Social-adjustive functions* help people behave appropriately according to societal norms to try to fit in and engender liking (Smith et al., 1956). *Value-expressive functions* are what facilitate expression of personal values, dispositions, or personality (Katz, 1960). Further, research has validated that higher self-monitors are most interested in social-adjustment, whereas low self-monitors are most interested in value-adjustment (DeBono, 2006; Harnish & Bridges, 2016). In theory, high SMs worry about what people think and they change to be more socially acceptable (Snyder & Gangestad, 1986). Further, high SMs are better at changing how they present themselves, but that does not mean that low SMs do not care at all about the impression they make, they are just less concerned than high SMs (Bolino & Turnley, 2003;

DeBono, 2006). Low self-monitors sometimes try to manage impressions, but not as much or as well as high self-monitors (Bolino & Turnley, 2003). Freidus, 2010).

Research on personality-based tailoring with the self-monitoring scale found that tailoring persuasive messages to self-monitoring levels was effective (Alqahtani et al., 2022). It is surprising, given the evidence that impression management motivations can influence selective exposure (Whitt et al., 2023; Hart et al., 2020), that the self-monitoring personality variable, which measures people's predisposition to engage in impression management, has not been investigated within a selective exposure study before.

Study 2 Overview

Study 2 investigated how to mitigate selective exposure to information when there is a motivation to manage impressions (i.e., **interpersonal motivations**). To do this, experimental message frames tested message interventions mitigating selective exposure by targeting impression management motivations (Chaiken et al., 1989; Hart et al., 2020; Whitt et al., 2023). This is especially promising because a recent study (Whitt et al., 2023) successfully mitigated selective exposure by targeting the impression management motivation. As earlier cited, people have demonstrated that they change how they engage with information when they are aware of the way it will make them be perceived (e.g., increased consumption of stigmatizing health information in private than in public; Earl et al., 2015). Participants engage with information to signal to others what beliefs they hold (Hart et al., 2020). Further, people have been influenced to express attitudes that were in alignment with a person they were accountable to (Tetlock, 1992, 1985). Although these findings are suggestive of why people do these things, little research has investigated how to mitigate selective exposure to information through an impression management motivation perspective. Indeed, there have been calls to study impression

management's effects on selective exposure (Hart et al., 2009; Hart et al., 2020). In Study 2, there are four message frames: 1) control; 2) be open-minded (a message just asking people to be open-minded, designed to also test the demand effect; Orne, 1962); 3) be liked by being open-minded, and 4) be liked and therefore influential by being open-minded.

1. Control is a generic message control.

2. Be open-minded is a message instructing the participant to be more open-minded. The other message frames (message frames 3 and 4) utilize impression management motivations for being open-minded, however, this "be open-minded" message frame investigated if merely telling people to be open-minded would result in less selectivity. Additionally, this message frame aimed to rule out the *demand effect* (i.e., the demand effect is when people respond to ways that they think the study wants them to, rather than how they would honestly respond; Orne, 1959, 1962).

3. Be liked by being open-minded is a message frame investigating if telling participants about the interpersonal benefit of being open-minded will mitigate their selective exposure behaviors. Moore and colleagues (2023), in their section on practical contribution, recommend that interventions be designed which communicate to people that it is to their benefit to be receptive to opposing views (also see Heltzel & Laurin, 2021; Minson et al., 2020). Further, Moore et al. (2023) suggest that future studies should investigate how selective exposure signals to others how likable they are. Therefore, message frame 3: *Be liked by being open-minded* is a message frame that tells participants that being perceived as open-minded by others will make them more liked (i.e., ingratiation; McCrae & Costa, 1997; Moore et al., 2023; Teeny & Petty, 2022). This message frame was thought to mitigate participant's selective exposure tendencies because people have changed their selective exposure behaviors in response to

interpersonal impression management goals (Hart et al., 2009; Hart et al., 2020; Moore et al., 2023).

4. Be liked and influential by being open-minded

Further, these impression management theories (Chaiken et al., 1989; Tedeschi et al., 1971) are built on the premise that people have a desire to influence others. Therefore, there was also a message frame conveying to people that being regarded as "open-minded" will help them be more influential. This is consistent with earlier research on source characteristics by Hovland et al. (1953) that found that communicators who communicated two-sided messages (i.e., points that both supported their side, and ones that argued against it) were viewed as more credible by people than those who only communicated one-sided messages (i.e., only points that supported the source's position). It therefore follows that a message frame arguing that viewing counterattitudinal information can make people be perceived as more open, and consequently more influential, should be an effective message frame. People care about the impressions they make on other people because it helps them be liked and to influence others. If participants are told that listening to what others say will then be reciprocated by others listening back, then they will likely be more open to selecting counterattitudinal information. Indeed, recent research found that appealing to reciprocity persuaded participants to engage in more open-minded engagement (Xu & Petty, 2022).

Anticipated discussion. Furthermore, to boost engagement with the counterattitudinal message, participants were told that they may be randomly selected to have a short conversation with the author of the counterattitudinal message. As earlier studies demonstrated, when people anticipate having a conversation, they tend to engage more with the information (Canon, 1964; Freedman, 1965) and to sometimes move their opinions more in the direction of the perceived

position of their conversation partner (Chen et al., 1996; Cialdini et al., 1976; McFarland et al., 1984; Tetlock, 1985).

Self-Monitoring (SM). Additionally, there is an individual difference variable that measures the degree that people actively self-monitor the impression they are making: *self-monitoring* (SM, Snyder, 1974; Snyder & Gangestad, 1986). Some people are very concerned with how they come across to others (high self-monitors) and others are not as concerned about what people think about them (low self-monitors). One study found that people higher in SM were more likely to change what type of information they gathered in order to have a smooth interaction with an interviewee, whereas those lower in SM did not (Dardenne & Leyens, 1995). A *smooth interaction* is defined as *"get along to be liked"* (p. 1236). A study on impression management and self-monitoring by Chen et al. (1996) found that people higher in self-monitoring were especially likely to change their attitudes in order get along with their partner. Therefore, telling people that *"people like you if you're open minded"* will likely be an effective message frame for mitigating selective exposure behaviors for high SMs. However, for low self-monitors that might not work. But if low SMs were given an incentive like: *"you'll be more influential"* or *"people might listen to you more"*, then they might respond to an impression management motivated message. In fact, that is the point of message frame 4, that if a lower self-monitor is given a reason to care, then they are going to care. Self-monitoring has not been investigated within a selective exposure study before.

Hypotheses and Research Questions

As done in Whitt et al. (2023), all message frames were tested and compared to a control message frame.

Hypothesis 1: One or more of the experimental message frames will be more effective than the control at mitigating selective exposure.

Hypothesis 2: One or more of the experimental message frames will be more effective than the control at increasing the level of agreement with the counterattitudinal message.

Self-Monitoring Hypotheses:

Hypothesis 3: In message frame 3, the higher self-monitors will be more influenced than lower self-monitors to be less selective. This will be demonstrated by an interaction between message frame and self-monitoring.

Hypothesis 4: Message frame 4 will be more effective for lower self-monitors than message frame 3 at mitigating selective exposure. This will be demonstrated by an interaction between message frame and self-monitoring.

Research questions:

1. Are some of these message frames more effective than the others?
2. Are message frames tailored to impression management concerns more influential for high self-monitors?

Methods

Participants: Inclusion and Exclusion Criteria

321 participants were recruited from Cloud Research Connect. A G*power analysis indicated that a final sample size of 277 would be required to detect a small effect ($f^2 = 0.04$). To ensure that the counterattitudinal message was counterattitudinal, participants who selected agreement or neutrality on the pre-test measure (i.e., increased internet service bills) were excluded ($n = 12$). In a prior study by Banks (2022), 14% of the sample either failed the attention check, or indicated agreement/ neutrality with the pre-test question. Therefore, to have a sufficient buffer for exclusions, 15% additional participants ($n = 44$) were recruited for the study for a total sample of 321. As compensation for participation, participants were paid ~$3.00.

Demographics

Age: ($M = 38$, $SD = 11.6$). Race: 65.7% white, 13.9% black, 6.8% Asian, 5.2% Hispanic, 8.4% other. Sex: 49.8% male, 49.8% female, 0.3% prefer not to say. Education levels: high school or GED 9.7%, some college 16.2%, associate's 7.4%, bachelor's 45.3%, master's 17.8%, professional or doctoral degree 3.3%.

Design and Variables

Pre-post, between-subjects design with 4 message frames: 1 control and 3 experimental. The pre-post measure is the level of agreement with the principal position of the counterattitudinal message. Covariates: pre-test agreement, neutral message reading speed, self-monitoring. The dependent variables related to hypotheses 1, 3, and 4 are: selective exposure headlines, reading time, argument recall, engagement; and related to hypothesis 2: agreement.

Materials

Pre-test Agreement: (Adapted from Banks & Brannon, 2023) (The same as study one)

"To what extent do you agree that people should have to pay twice what they currently pay for internet service? (1 = strongly disagree to 7 = strongly agree).

(See Appendix O).

4 Message Frames: 1 Control and 3 Experimental

1. Control (Whitt et al., 2023). (112 words)

"Now, we would like for you to read a short passage about human psychology. Please carefully read the passage below.

Psychology of Attitudes

Each of us evaluates our social worlds. We form likes and dislikes of virtually everything and everyone we encounter; these are called 'attitudes'. Simply put, attitudes are evaluations of people and things. Attitudes are important because they often determine what we do and how we act towards other people.

The following are the three major components of an attitude:

Cognitive component. The thoughts and beliefs that people form towards others.

Affective component. The emotional reactions that people have towards others.

Behavioral component. The behaviors that people display towards others."

(See Appendix P).

2. Be open-minded (Adapted from Lord et al., 1984). (110 words)

"Now, we would like for you to read a short passage about human psychology. Please carefully read the passage below.

Be open-minded

People tend to naturally be exposed to and prefer information that supports their views. However, this can sometimes lead others to consider you to be closed-minded. Therefore, we

would like you to be as open-minded as possible in evaluating the information you read. You might consider yourself to be in the same role as a judge or juror asked to weigh all of the evidence in a fair and impartial manner.

So please resist any temptation you have to be closed-minded and ignore information you initially disagree with."

(See Appendix P).

3. Be liked by being open-minded (107 words)

"Now, we would like for you to read a short passage about human psychology. Please carefully read the passage below.

Be liked by being open-minded

People like those that are open-minded. Looking at messages that you disagree with can be a way of demonstrating to others that you're open-minded. People like those that are open-minded because they tend to be regarded as knowledgeable, well-informed, credible, and thoughtful.

So, whenever you encounter messages that are contrary to your opinion, especially on controversial issues, be sure to pay attention to them, at least a little, so that you can be seen as being open-minded, and be liked by others."

(See Appendix P).

4. Be liked and Influential by being open-minded (113 words)

"Now, we would like for you to read a short passage about human psychology. Please carefully read the passage below.

Be liked and Influential by being open-minded

Likable people are influential. Looking at messages that you disagree with can be a way of demonstrating to others that you're open-minded, and therefore likable. In other words, if you are open to what someone else is saying, then they will tend to be open to what you are saying.

So, whenever you encounter messages that are contrary to your opinion, be sure to pay attention to them, so that you can be seen as being open-minded, and likable, which will then help you become influential."

(See Appendix P).

Attention Check:

Participants were asked about the main theme of the message frame and presented with four multiple-choice answers to choose from. Only one of which was correct, the three foils were the same for each condition (and for both studies). Participants who failed this attention check were planned to be dropped from all analyses. Each message frame was only presented with the attention check that was written for their message frame.

(1. Control): *"What was the main theme of the message you just read?*

Correct answer: "*There are cognitive, affective, and behavioral components of attitudes"*

Incorrect answers: "*The education system is changing how they teach upcoming generations", "Books are a good tool for learning new information", "The digital age brings instant access to information".*

(2. Be open-minded): *"What was the main theme of the message you just read?*

Correct answer: "*Be open-minded when evaluating information"*

Incorrect answers: "*The education system is changing how they teach upcoming generations", "Books are a good tool for learning new information", "The digital age brings instant access to information"*.

(3. Be liked by being open-minded): *"What was the main theme of the message you just read?*

Correct answer: "*Being open-minded makes you liked by others"*

Incorrect answers: "*The education system is changing how they teach upcoming generations", "Books are a good tool for learning new information", "The digital age brings instant access to information".*

(4. Be liked and influential by being open-minded): *"What was the main theme of the message you just read?*

Correct answer: "*Being open-minded makes you more influential"*

Incorrect answers: "*The education system is changing how they teach upcoming generations", "Books are a good tool for learning new information", "The digital age brings instant access to information".*

(See Appendix Q).

Selective Exposure Headlines: (The same as Study 1)

Commonly, selective exposure paradigms test selective exposure by presenting an assortment of proattitudinal and counterattitudinal messages for the participant to choose from (Hart et al., 2009; Whitt et al., 2023). The more the participant says they are interested in reading articles that are consistent with their attitude (1 = not at all interested to 7 = very interested), the higher their selective exposure score. Conversely, if the participant is more interested in reading the counterattitudinal articles than proattitudinal, then their selective exposure score would be lower. The present study utilized this same paradigm to assess participant's selective exposure scores. Specifically, the present study included 6 article titles about internet bills increasing, with 3 being proattitudinal and 3 counterattitudinal. These articles were directly related to the pre-test question and counterattitudinal message about internet bills. Because participants who indicated

neutrality or agreement with increased internet bills were excluded, article headlines that advocate for increased internet bills are the counterattitudinal articles, whereas the ones that argue against it are proattitudinal. Participants' scores were compiled into a composite score that represents their selective exposure level. Higher selective exposure scores mean that the participant was more interested in proattitudinal information than counterattitudinal information. The following 6 article titles were presented to the participants in a random order.

Participants received the following instruction before selecting the articles:

"The following article titles are about a proposal to double internet service bills. For each of the following article titles please indicate how interested you would be to read the full-length article." (1 = not at all interested to 7 = very interested)

Counterattitudinal: *"Say YES! Paying Larger Internet Bills Will Actually Help Us Out!"*

Counterattitudinal: *"Several Reasons Why Doubling Your Internet Bill is Beneficial!"*

Counterattitudinal: *"Why One Instagram Influencer Supports Doubling $$$ Spent on Internet Service Bills!"*

Proattitudinal: *"Why charge us more? These Internet Service Fees Are Getting Out of Hand!"*

Proattitudinal: *"At First it Sounded Bad, and it is Still Bad, Say NO! to Doubling Internet Service Charges!"*

Proattitudinal: "*Social Media Influencers Speak Out Against Internet Bill Increases"*

Scoring: Scores for counterattitudinal article titles were reverse coded. The proattitudinal and counterattitudinal scores were combined into a composite score by averaging their ratings. Higher scores mean that the participant is less likely to be willing to view counterattitudinal information (1 = low selective exposure to 7 = high selective exposure).

(See Appendix R).

Counterattitudinal Message[2] (530 words): (The message is the same as study one but the instructions before the message are slightly different)

Note. Banks and Brannon (2023) used a similar counterattitudinal message (298 words) about internet service taxes.

On the page preceding the counterattitudinal message, participants read the following: "*On the following page, you will be presented with one of the full-length articles to read. We want to see what people are interested in reading, that is why we asked you to indicate which articles you are interested in reading. However, until we know what everyone says, we will give people a random article to read. In the future, we will take into account what people say."*

Further, to help induce the impression management motivation, participants in study 2 received the instruction: *"Make sure to pay attention while reading the following message because you may be randomly given the opportunity to have a short conversation with the author of the message. If selected, you will be compensated $50."* (After the conclusion of the experiment, a participant was randomly selected to have the conversation and receive $50, see Appendix Z for the transcript).

The next page: (The same as study one)

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[2] Online website articles that support claims made in the counterattitudinal message:

https://www.forbes.com/advisor/business/software/website-statistics/

https://www.security.org/resources/data-tech-companies-have/

https://www.pewresearch.org/internet/2019/11/15/americans-and-privacy-concerned-confused-and-feeling-lack-of-control-over-their-personal-information/

https://proton.me/blog/what-is-your-data-worth#:~:text=Depending%20where%20you%20live%2C%20information,analysis%20of%20their%20regulatory%20filings.

https://www.cnet.com/home/internet/the-average-internet-bill-in-the-us-is-63-a-month-heres-how-you-can-lower-it/

https://www.forbes.com/home-improvement/internet/internet-statistics/#:~:text=The%20amount%20of%20time%20users,to%20the%20Global%20Web%20Index.

https://www.cnet.com/home/internet/closing-the-digital-divide-will-90-billion-actually-solve-our-broadband-gap/

"Several Reasons Why Doubling Your Internet Bill is Beneficial!

"The true cost of the internet is not being properly charged to the end consumer. Once this cost is redistributed, the average person will be paying double what they are currently paying for their internet bill. This could mean you pay $600 extra a year.

The internet provides great benefits to people: chiefly among them being instant access to millions of websites. However, this is expensive to maintain and the more time you spend on it causes more strain on the infrastructure (fiber-optic lines; data warehouses, servers, security). Think of it like our highways: the more time you spend driving on the highways, the more wear and tear you do. Therefore, you pay additional fees on your gasoline that goes towards highway maintenance. The more you use it, the more you pay for its upkeep. Well, our virtual highways are crumbling, and we need your tax-dollars to fill the potholes. Recently, there have been cases of internet servers being overloaded, causing great disruptions to many sectors, such as the airline industry! The internet overall is being run on a shoe-string budget relative to its size and more money needs to be raised to pay for its upkeep.

There are even parts of our country that do not have access to broadband internet! The main obstacle being the cost of infrastructure. Larger internet service bills can be the answer to transport these 7 million Americans from the digital stone age to the modern one.

Additionally, the cost of many websites is largely subsidized by collecting your private information and then selling it to advertisers. Unsurprisingly, most people are not happy with this. A Pew research study found that 79% of U.S. adults are "very" or "somewhat concerned" about how their data is used. Therefore, I argue that privacy should and can be given back to the end user, which is you! This will not be free though. It would require you to pay more for your internet bill so that websites can still operate without needing to resort to selling you out.

So, how much will this cost you? By one estimation, your user data is worth over $600 in revenue a year! What if the internet user were to pay that additional $600 each year to not have their data tracked and sold? The average internet bill in the US is $63/month. Therefore, if each person were to double their internet bill, this should cover the value of their data. This increased revenue could be used so that the internet and companies could function without selling user data. Another benefit of minimizing data collection would be a lessened risk of your information being leaked during data breaches, since there would be no data to leak.

Let's make the internet work better by making it more stable and accessible for all. The more we pay, the greater the internet can become! There is a common phrase: "If you're getting it for free, then you are the product". Are you tired of being a product? Let's make the internet work for you rather than for advertisers by paying your fair share for it."

(See Appendix S).

Argument Recall: (The same as study one)

To assess the degree to which participants paid attention to the counterattitudinal message, participants were presented with exact sentences from the message and then asked if they were in the message or not. The sentences were presented in a random order.

Were the following sentences in the text you read? (Yes or No).

You are indicating whether or not the sentences were in the text, not whether you agree with it. Some of these sentences were in the article, and some were not. In other cases, the sentence was in the article but has been changed slightly. In these cases, you should mark "no".

16. *"The true cost of the internet is not being properly charged to the end consumer" (yes).*
17. *The internet provides great benefits to people: chiefly among them being instant access to millions of websites. (yes)*

18. *Therefore, you pay additional fees on your gasoline that goes towards highway patrol. (no).*
19. *Recently, there have been cases of internet servers being overloaded, causing great disruptions to many sectors, such as the airline industry! (yes).*
20. *The main obstacle being the cost of private information security. (no).*
21. *Unsurprisingly, most people are not happy with this. (yes).*
22. *This will not be free though. (yes).*
23. *By one estimation, your user data is worth over $800 in revenue a year! (no).*
24. *Therefore, if each person were to triple their internet bill, this should cover the value of their data. (no).*
25. *Let's make the internet work better by making it more stable and accessible for all. (yes).*
26. *Are you tired of being a product? (yes).*
27. *"Every day there are nearly 3000 cases of identity theft on the internet." (no)*
28. *"Currently, many websites will have a pop-up that asks you if you consent to "cookies", this is essentially asking you if you consent to them collecting information on you." (no)*
29. *"There are still a billion people in the world without access to high-speed internet." (no)*
30. *"Some estimates suggest around 5% of people are very worried about their internet privacy." (no)*

Scoring: Participants received a point for each correct response leading to an ***argument recall*** score between (0 = no recall to 15 = perfect recall).

(See Appendix T).

Agreement: (Adapted from Banks & Brannon, 2023). (The same as study one)

"To what extent do you agree that people should have to pay twice what they currently pay for internet service? (1 = strongly disagree to 7 = strongly agree).

(See Appendix U).

Engagement: (Adapted from Banks & Brannon, 2023). (The same as study one)

Three questions were asked to assess how engaged the participants were while reading the counterattitudinal message. The self-reported engagement composite is comprised of three items, open mind, attention, and thought. ***Open Mind:*** *"Whether you agreed or disagreed with the author's message, to what extent did you try to keep an open mind while reading their message, that said, "people should have to pay twice what they currently pay for internet service?"* (1 = no attempt to keep an open mind to 7 = complete attempt to keep an open mind). ***Attention***: *"How much attention did you pay to the author's message, that said, "people should have to pay twice what they currently pay for internet service?"* (1 = no attention to 7 = complete attention). ***Thought*****:** *"How much thought did you give to the ideas the author was proposing, that, "people should have to pay twice what they currently pay for internet service?"* (1 = no thought to 7 = complete thought).

Scoring: The scores from the three items were averaged to form the composite (1 = *no engagement* to 7 = *very engaged*) and the Cronbach's alpha score was calculated. A prior study by Banks and Brannon (2023) found this engagement composite to be a significant predictor of participants' self-reported engagement while reading a counterattitudinal message. Note that a Cronbach's alpha reliability analysis in the Banks and Brannon (2023) study found that the composite was acceptable, but on the lower end of the acceptable range (α = .72).

(See Appendix U).

Reading Time (The same as study one).

One of the main variables of interest was the length of time, in seconds, that the participants spent on the counterattitudinal message. Selective exposure studies have used time spent on the message as a measure of selective exposure, finding that participants spend more time on belief-consistent information compared to inconsistent information (Knobloch-Westerwick & Meng, 2009; Whitt et al., 2023). Therefore, longer reading times on counterattitudinal messages are typically associated with less selectivity. The Knobloch-Westerwick and Meng (2009) study found that participants averaged 36% more time on proattitudinal information than on counterattitudinal. To gain further specificity, participants were not only timed as they read the counterattitudinal message but were also timed as they read a neutral message. The neutral message reading speed was factored into the analysis on time spent reading the counterattitudinal message.

Neutral reading time message to measure participants' reading speed (185 words): (The same as study one)

Note. The following message about the history of the internet came from the website article: *A short history of the internet,* with revisions to shorten the article (National Science and Media Museum, 2020).

"Please read the following article:

A short history of the internet

President Dwight D. Eisenhower formed the Advanced Research Projects Agency (ARPA) in 1958, bringing together some of the best scientific minds in the country. Among ARPA's projects was to test the feasibility of a large-scale computer network. Lawrence Roberts was responsible for developing computer networks at ARPA, working with scientist Leonard

Kleinrock. Roberts was the first person to connect two computers. When the first network was developed in 1969, Kleinrock successfully used it to send messages to another site, and the ARPA Network—or ARPANET—was born.

Once ARPANET was up and running, it quickly expanded. By 1973, 30 academic, military and research institutions had joined the network, connecting locations including Hawaii, Norway and the UK. As ARPANET grew, a set of rules for handling data needed to be put in place. In 1974, computer scientists Bob Kahn and Vint Cerf invented a new method called transmission-control protocol, popularly known as TCP/IP, which essentially allowed computers to speak the same language. After the introduction of TCP/IP, ARPANET quickly grew to become a global interconnected network of networks, or 'Internet'."

(See Appendix V).

Self-Monitoring: 18-item scale (Snyder & Gangestad, 1986)

The self-monitoring construct was planned to be measured as a continuous variable consistent with suggestions from a psychometric study of self-monitoring (Wilmot, 2015). Specifically, participants were asked to indicate on a 5-pt Likert scale the degree to which each statement is (1) extremely uncharacteristic to (5) extremely characteristic of them (Briggs et al., 1980; Briggs & Cheek, 1988). Example items include: *"I find it hard to imitate the behavior of other people"*, *"At parties and social gatherings, I do not attempt to do or say things that others will like"*, *"I can only argue for ideas which I already believe."* See Appendix W for the full scale.

Scoring: A composite variable was created by averaging the scores from each item, and the Cronbach's alpha score was calculated. 10 items are reverse coded.

(See Appendix W).

Demographics: (The same as study one).

Participants were asked to report their age, race, sex, and education level.

Age: *"What is your age? (e.g., 24)"* Free response, with restrictions that participants must write using numbers between 18 to 120.

Education: *"What is the highest level of school you have completed or the highest degree you have received?"*

Response choices of: Less than high school degree, High school graduate (high school diploma or equivalent including GED), Some college but no degree, Associate degree in college (2-year), Bachelor's degree in college (4-year), Master's degree, Doctoral degree Professional degree (JD, MD).

Race: *"Choose one or more races that you consider yourself to be:"*

Response choices: White, Black or African American, American Indian or Alaska Native, Asian, Native Hawaiian or Pacific Islander, Hispanic, Other (free response).

Sex: *"What is your biological sex?"*

Response choices: Male, Female, Prefer not to respond.

(See Appendix X).

Procedure

Participants started the survey by reading and agreeing to informed consent (Appendix N), then participants completed a robot captcha. Following that, participants took the pretest agreement measure to indicate to what degree they agree with the idea that internet service bills should be increased. See Figure 7 for a visual representation of the survey flow. Participants were then randomly be assigned into one of the 4 message frames and asked to pay close attention (1. Control, 2. Be open-minded, 3. Be liked by being open-minded, 4. Be liked and

influential by being open-minded). To increase the likelihood that participants engaged with the message frame, at the bottom of the page was a short open-response box that told participants: *"Type in the main point of the message above (Hint: it is the bolded and underlined title)."* After the message frame, participants were presented with 6 article headlines, and they indicated the degree to which they were interested in reading the full-length article. As an attention check, participants were asked to indicate the main theme from the message frame. There were four multiple-choice answer choices, with only one being correct.

Participants were then informed that they may be randomly given the opportunity to have a short conversation with the author of the message but will be compensated $50 if selected. On the page preceding the counterattitudinal message, participants read the following: *"On the following page, you will be presented with one of the full-length articles to read. We want to see what people are interested in reading, that is why we asked you to indicate which articles you are interested in reading. However, until we know what everyone says, we will give people a random article to read. In the future, we will take into account what people say."* Next, participants were presented with the counterattitudinal message on increasing internet costs. After reading this message participants completed surveys items for agreement, argument recall, and self-reported engagement. Following these measures, participants then read the neutral reading time message while their reading time was unobtrusively logged. Next, participants completed the self-monitoring 18-item survey. Finally, participants filled out the demographic questionnaire (i.e., race, sex, age, education level, see Appendix X) and were debriefed (see Appendix Y).

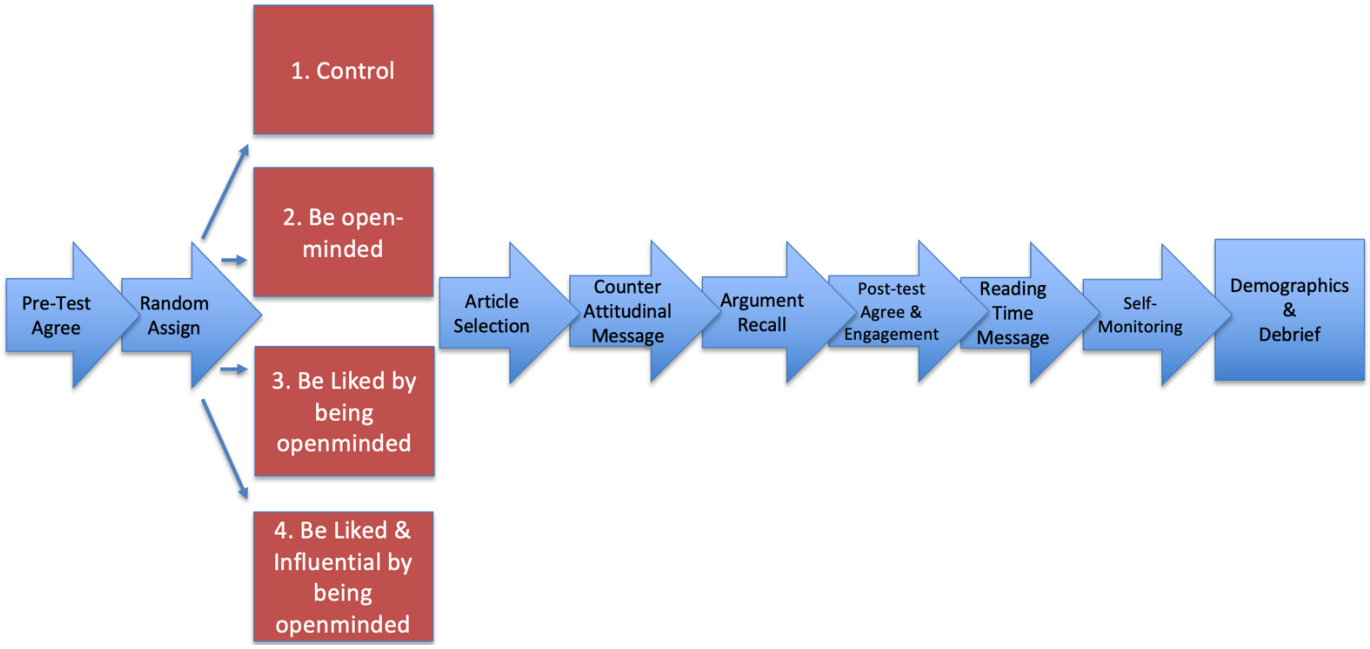


Figure 7. Study 2 Survey Flow

Study 2 Results

Data Preparation:

321 Participants completed the survey. To ensure that the counterattitudinal message was counterattitudinal, participants who selected agreement or neutrality, 4 or higher on the pretest measure were excluded (n = 12): *"To what extent do you agree that people should have to pay twice what they currently pay for internet service?"* (1 = strongly disagree to 7 = strongly agree). Resulting in the final sample size (N = 309). All remaining participants passed the attention check. According to the power analysis (see Chapter 3: Participants: inclusion and exclusion criteria), a final sample size of 277 was necessary. Therefore, the targeted sample size was acquired. The participants were distributed across the 4 message frames as follows: 1. *control* (n = 80), 2. *be open-minded* (n = 77), 3. *be liked by being open-minded* (n = 78), and 4. *be liked and influential by being open-minded* (n = 74) (See Table 16). For the sake of brevity, frames 3 and 4 will be referred to within the results section as: 3. *be liked*, and 4. *be influential*. The Jamovi statistical program (The jamovi project, 2022) was utilized for statistical analysis, including analyses utilizing the GAMLj module (Gallucci, 2019).

Table 16. Study 2. Frequencies of Frame

Frame	Counts	% of Total	Cumulative %
1.Control	80	25.9 %	25.9 %
2.Be open-minded	77	24.9 %	50.8 %
3.Be liked	78	25.2 %	76.1 %
4.Be influential	74	23.9 %	100.0 %

Self-Monitoring Scale Data Preparation. There were 18 items for self-monitoring that participants answered on a 1 to 5 Likert scale (1 = extremely uncharacteristic to 5 = extremely characteristic) (Briggs et al., 1980; Briggs & Cheek, 1988; Snyder & Gangestad, 1986). Participants were told: *"Please indicate the degree to which each statement is characteristic of you. There are no right or wrong answers. Please try to answer as honestly as you can."* See Appendix W for the items. Ten items were reverse coded in the Qualtrics platform. A composite variable was created by averaging the scores from each item ($M = 2.74$, $SD = 0.62$, $Mdn = 2.72$). The Cronbach's alpha score was calculated and found acceptable ($\alpha = .83$).

Hypothesis 1. *"One or more of the experimental message frames will be more effective than the control at mitigating selective exposure."* There are four main dependent variables of interest that could each independently indicate a reduction in selective exposure, thereby supporting hypothesis 1: selective exposure headlines, reading time, argument recall, or engagement. In all analyses in the results section, pretest agreement was included as a covariate. Participants were asked: *"To what extent do you agree that people should have to pay twice what they currently pay for internet service?"* (1 = strongly disagree to 7 = strongly agree) ($M = 1.16$, $SD = 0.42$).

Selective Exposure Headlines Data Preparation. For a frame to be effective at mitigating selective exposure, and by extension supporting hypothesis 1, it needs to produce a lower score than the control frame (1 = low selective exposure to 7 = high selective exposure). Participants were told: *"The following article titles are about a proposal to double internet service bills. For each of the following article titles please indicate how interested you would be to read the full-length article."* (1 = not at all interested to 7 = very interested). The proattitudinal and counterattitudinal scores were combined into a composite score by averaging their ratings.

Higher scores mean that the participant was less interested in viewing counterattitudinal information (1 = low selective exposure to 7 = high selective exposure). The average selective exposure headline score was (*M* = 4.35, *SD* = 1.01).

The article titles are listed below in the following format: SE1 is selective exposure article 1, it is a counterattitudinal article, therefore the (R) means that it was reverse coded (see Table 17). See Appendix R.

SE1(R) Counterattitudinal: *"Say YES! Paying Larger Internet Bills Will Actually Help Us Out!"* (*M* = 4.61, *SD* = 2.04).

SE2(R) Counterattitudinal: *"Several Reasons Why Doubling Your Internet Bill is Beneficial!"* (*M* = 4.49, *SD* = 2.13).

SE3(R) Counterattitudinal: *"Why One Instagram Influencer Supports Doubling $$$ Spent on Internet Service Bills!"* (*M* = 5.10, *SD* = 2.00).

SE4 Proattitudinal: *"Why charge us more? These Internet Service Fees Are Getting Out of Hand!"* (*M* = 4.32, *SD* = 1.92).

SE5 Proattitudinal: *"At First it Sounded Bad, and it is Still Bad, Say NO! to Doubling Internet Service Charges!"* (*M* = 3.98, *SD* = 2.04).

SE6 Proattitudinal: "*Social Media Influencers Speak Out Against Internet Bill Increases"* (*M* = 3.58, *SD* = 2.04).

Table 17. Selective Exposure Headlines. Descriptives

Article Title	*N*	Mean	Median	*SD*
1. Say Yes	309	4.61	5	2.04
2. Several Reasons	309	4.49	4	2.13
3. Why one	309	5.10	6	2.00
4. Why charge	309	4.32	5	1.92
5. At first	309	3.98	4	2.04
6. Social Media	309	3.58	4	2.04

Selective Exposure Headlines Analyses: An ANCOVA test was conducted with message frame as the factor, pretest agreement and self-monitoring as covariates, with the frame*self-monitoring interaction, and selective exposure headlines as the dependent variable. The main effect of frame was significant, $F(3, 300) = 2.90$, $p = .035$, $\eta^2p = 0.03$. The effect size was small. A planned contrast revealed significant differences between the control ($M = 4.69$, *SE*, 0.11), and be open-minded frames ($M = 4.09$, $SE = 0.11$), $t(300) = 3.75$, $p < .001$, $d = 0.61$ (see Table 18), suggesting that the be open-minded frame reduced participants' selective exposure tendency more than those in the control frame. The effect size was medium. Additionally, the planned contrast between the control ($M = 4.69$, *SE*, 0.11), and the be liked frame ($M = 4.27$, $SE = 0.11$) was significantly different, $t(300) = 2.63$, $p = .009$, $d = 0.42$, such that participants in the be liked frame were less selective than those in the control frame (see Figure 8). The effect size was medium. These results support hypothesis 1.

Table 18. ANCOVA for Selective Exposure Headlines

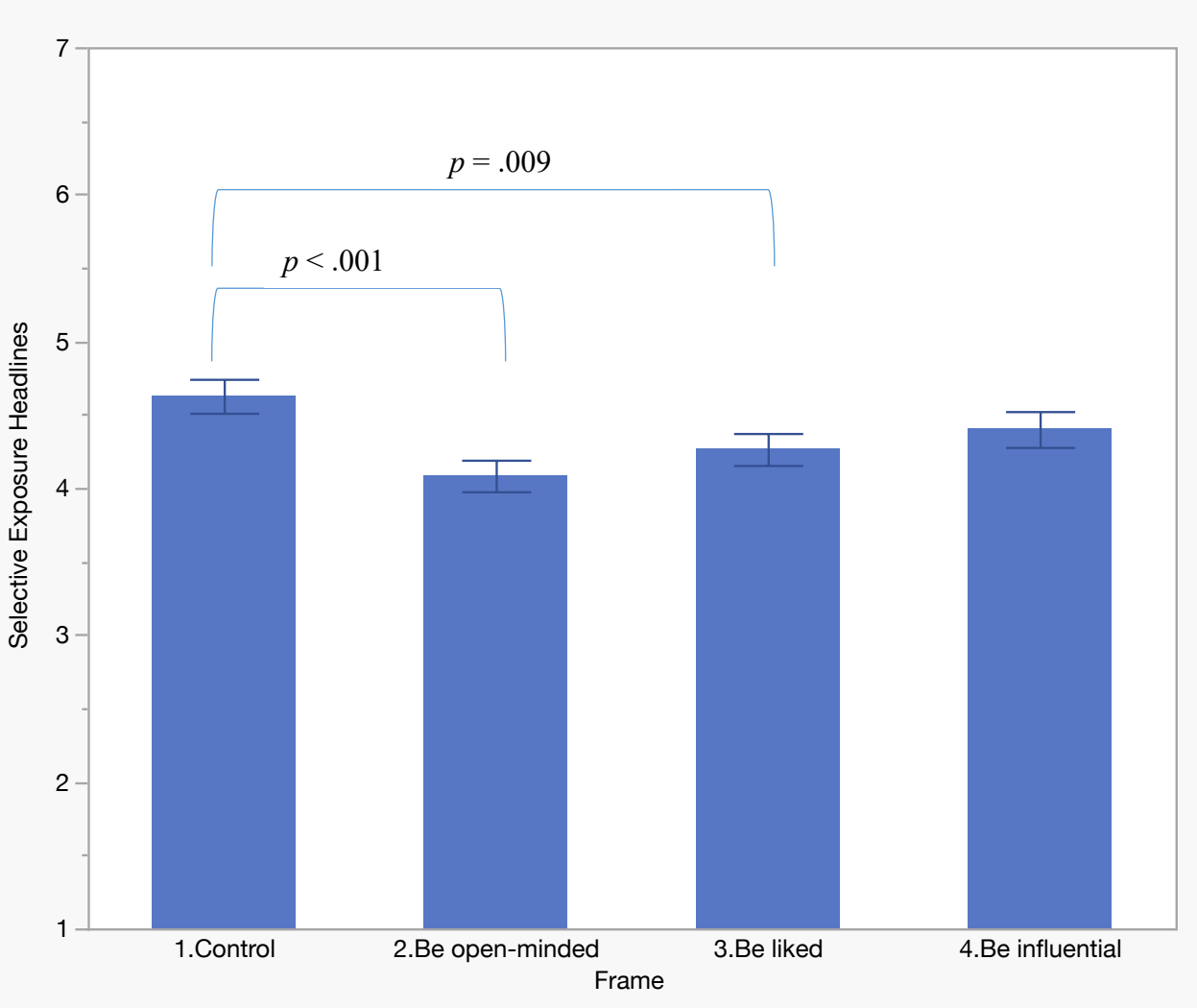
	SS	df	*F*	*p*	η^2p
Model	24.09	8	3.10	.002	0.08
Frame	8.46	3	2.90	**.035**	0.03
Pretest agreement	0.35	1	0.36	.548	0.01
Self-monitoring	2.48	1	2.55	.112	0.01
Frame✻Self-monitoring	9.69	3	3.32	**.020**	0.03
Residuals	291.85	300			
Total	315.95	308			

Table 19. Contrasts Between Frames for Selective Exposure Headlines

Frame		Frame	Estimate	*SE*	*T*	*p*	*d*
1.Control	-	2.Be open-minded	0.60	0.16	3.75	**< .001**	0.61
1.Control	-	3.Be liked	0.42	0.16	2.63	**.009**	0.42
1.Control	-	4.Be influential	0.27	0.16	1.64	.101	0.27

Table 20. Estimated Marginal Means for Selective Exposure Headlines

				95% Confidence Interval	
Frame	*M*	*SE*	df	Lower	Upper
1.Control	4.69	0.11	300	4.47	4.91
2.Be open-minded	4.09	0.11	300	3.87	4.31
3.Be liked	4.27	0.11	300	4.05	4.49
4.Be influential	4.42	0.12	300	4.19	4.65



Note. Error bars were constructed using 1 standard error from the mean.

Figure 8. Selective Exposure Headlines Score by Frame

Self-Monitoring Hypotheses:

Hypothesis 3: *"In message frame 3 (be liked), the higher self-monitors will be more influenced than lower self-monitors to be less selective. This will be demonstrated by an interaction between message frame and self-monitoring."* In order for hypothesis 3 to be supported, message frame 3 (be liked) needs to have a significant negative relationship, such that the higher a participant scores in self-monitoring, the lower they score on selective exposure headlines.

Self-Monitoring Interaction Analyses. Results indicated that in an ANCOVA test the interaction between *frame*self-monitoring* was significant, $F(3, 300) = 3.32$, $p = .020$, $\eta^2p = 0.03$ (see Table 18; see Figure 9). The effect size was small. Subsequently, a simple effects test was conducted with self-monitoring as the simple effects variable and frame as the moderator, $F(1, 300) = 0.22$, $p = .642$, $\eta^2p < .01$, but was not found to be significant (see Table 21). Therefore, the selective exposure headlines variable did not support hypothesis 3.

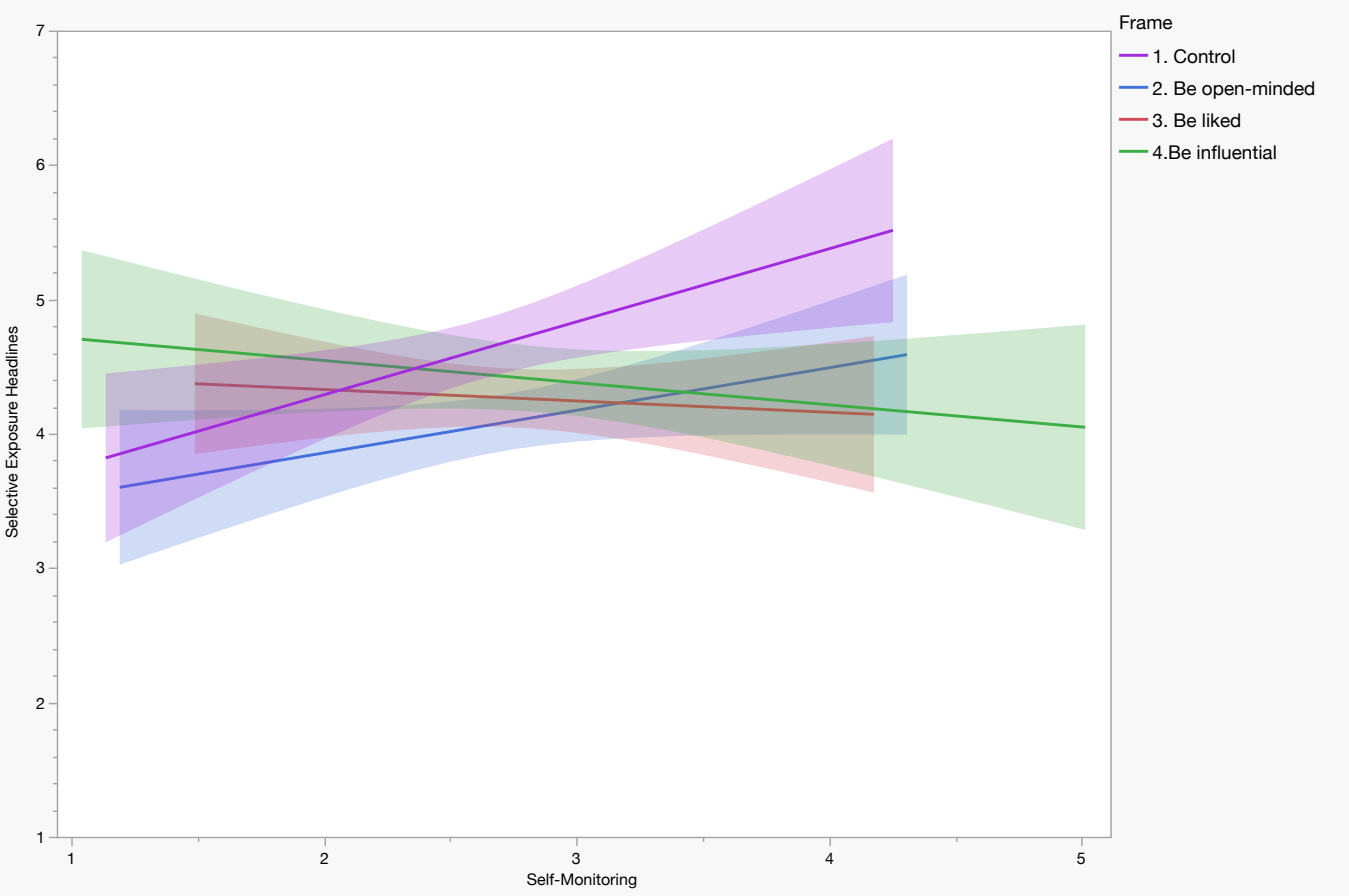
However, there was a significant simple effect for the *control frame*, $F(1, 300) = 7.49$, $p = .007$, $\eta^2p = .02$ (see Table 21). The effect size is small. To further investigate the simple effects, the parameter estimates revealed a significant interaction between the control frame and self-monitoring, $t(300) = 2.74$, $p = .007$ (see Table 22). This result indicates that for participants in the control frame, the higher they scored in self-monitoring, the more selectivity they exhibited on the selective exposure headline task. See Figure 10 for a visual representation of the results.

Table 21. Simple effects of Self-Monitoring

Moderator levels					
Frame	*F*	Num df	Den df	*p*	η^2p
1.Control	7.49	1.00	300	**.007**	0.02
2.Be open-minded	2.71	1.00	300	.101	0.01
3.Be liked	0.22	1.00	300	.642	0.00
4.Be influential	1.09	1.00	300	.297	0.00

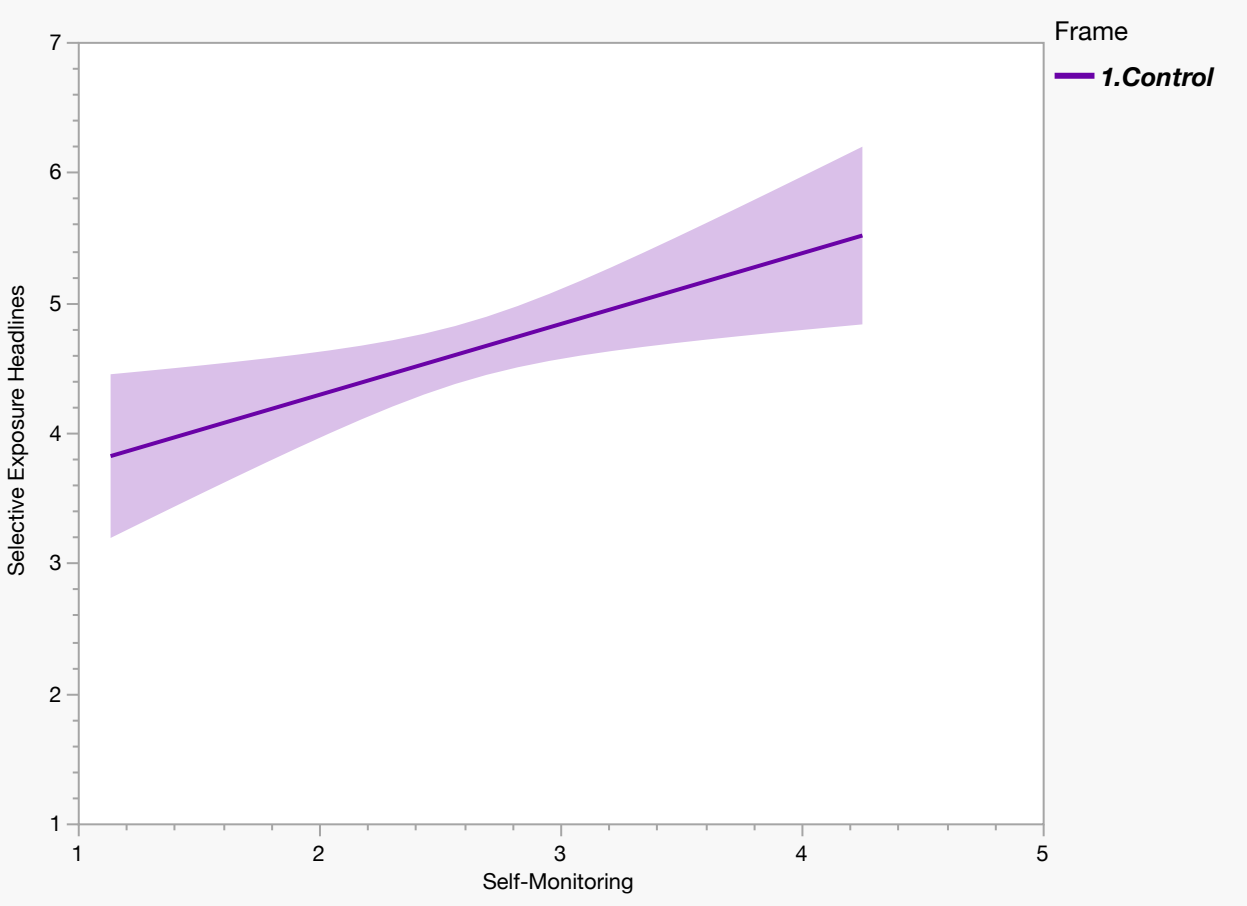
Table 22. Simple Effects of Self-Monitoring: Parameter Estimates

Moderator levels			95% Confidence Interval				
Frame	Estimate	*SE*	Lower	Upper	*Df*	*t*	*p*
1.Control	0.54	0.20	0.15	0.93	300	2.74	**.007**
2.Be open-minded	0.31	0.19	-0.06	0.68	300	1.65	.101
3.Be liked	-0.09	0.19	-0.47	0.29	300	-0.47	.642
4.Be influential	-0.17	0.16	-0.48	0.15	300	-1.04	.297



Note. Shaded error bars are constructed using 1 standard error from the mean.

Figure 9. Self-Monitoring*Frame Interaction for Selective Exposure Headlines



Note. Shaded error bar was constructed using 1 standard error from the mean.

Figure 10. Self-Monitoring*Control Frame Interaction for Selective Exposure Headlines

Hypothesis 4: "*Message frame 4 (be influential) will be more effective for low self-monitors than message frame 3 (be liked) at mitigating selective exposure. This will be demonstrated by an interaction between message frame and self-monitoring.*"

Due to the significant interaction of frame*self-monitoring for the selective exposure headlines variable, $F(3, 300) = 3.32$, $p = .020$, $\eta^2p = 0.03$ (see Table 18), a post-hoc *t*-test was conducted with participants lower in self-monitoring ($M < 2.5$) between frame 3 (be liked, $n = 33$) and frame 4 (be influential, $n = 21$). However, participants' selective exposure headlines scores did not significantly vary between the be liked ($M = 4.17$, $SD = 0.95$) and be influential frames ($M =$

4.00, *SD* = 1.17), *t*(52) = -0.20, *p* = .841, *d* = 0.06. Thus, the selective exposure headlines variable did not support hypothesis 4. The significant interaction can be explained by the earlier discussed result for the control frame (see section on hypothesis 3 testing), such that participants higher in self-monitoring in the control frame scored higher on the selective exposure headlines.

Reading Time Data Explanation: One of the main variables of interest was the length of time, in seconds, that the participants spent on the 530-word counterattitudinal message: *"Several Reasons Why Doubling Your Internet Bill is Beneficial!"* (see Appendix V) (*M* = 145, *SD* = 148). To gain further specificity, participants were also timed as they read a 185-word neutral message: *"A short history of the internet"* (see Appendix J) (*M* = 65.8, *SD* = 115). The time that participants spent on these pages was unobtrusively measured using the page timing feature on Qualtrics (Qualtrics, Provo, UT). The longer that a participant spent on the counterattitudinal message (in seconds), the more that their selective exposure was reduced. Therefore, for this variable to support hypothesis 1, an experimental message frame would need to demonstrate that significantly more time was spent on the counterattitudinal message than the control frame.

Reading Time Analyses: an ANCOVA test was conducted with frame as the factor, with neutral reading time and pretest agreement as covariates. The main effect of frame was not significant, $F(3, 299) = 0.27$, $p = .850$, $\eta^2p < 0.01$, thus hypothesis 1 was not supported (see Table 23). Furthermore, the interaction between self-monitoring*frame was not significant $F(3, 299) = 0.08$, $p = .973$, $\eta^2p < 0.01$. Therefore, the reading time variable did not support hypotheses 3 or 4.

Table 23. ANCOVA for Reading Time

	SS	df	*F*	*p*	η^2p
Model	283927	9	1.46	.161	0.04
Neutral Reading Time	80849	1	3.75	.054	0.01
Pretest agreement	32377	1	1.50	.221	0.01
Self-Monitoring	275	1	0.01	.910	0.00
Frame	17214	3	0.27	.850	0.00
Self-Monitoring ✻ Frame	4928	3	0.08	.973	0.00
Residuals	6.44e+6	299			
Total	6.73e+6	308			

Table 24. Estimated Marginal Means for Reading Time

				95% Confidence Interval	
Frame	*M*	*SE*	df	Lower	Upper
1.Control	118	16.8	299	84.9	151
2.Be open-minded	166	16.7	299	133.2	199
3.Be liked	164	16.7	299	130.9	196
4.Be influential	131	17.4	299	97.3	166

Note. Estimated means are estimated averaging across interacting variables

Argument Recall Data Preparation. A composite variable was created for argument recall. The higher the score that the participant received, the better their argument recall. Participants received a point for each correct response leading to an argument recall score between (0 = no recall to 15 = perfect recall). In order for the argument recall variable to support hypothesis 1, the experimental message frame needed to be significantly better at recalling the arguments than the control frame.

The participants were given the following instructions and items. Note that the "yes" or "no" in parentheses indicates whether or not that particular sentence came completely from the text. (See Appendix T).

"Were the following sentences in the text you read? (Yes or No).

You are indicating whether or not the sentences were in the text, not whether you agree with it. Some of these sentences were in the article, and some were not. In other cases, the sentence was in the article but has been changed slightly. In these cases, you should mark "no"."

1. *"The true cost of the internet is not being properly charged to the end consumer."* (yes). (*n* = 282 correct, *n* = 27 incorrect).
2. *The internet provides great benefits to people: chiefly among them being instant access to millions of websites.* (yes). (*n* = 279 correct, *n* = 30 incorrect).
3. *Therefore, you pay additional fees on your gasoline that goes towards highway patrol.* (no). (*n* = 206 correct, *n* = 102 incorrect).
4. *Recently, there have been cases of internet servers being overloaded, causing great disruptions to many sectors, such as the airline industry!* (yes). (*n* = 250 correct, *n* = 59 incorrect).

5. *The main obstacle being the cost of private information security.* (no). (*n* = 223 correct, *n* = 86 incorrect).
6. *Unsurprisingly, most people are not happy with this.* (yes). (*n* = 250 correct, *n* = 59 incorrect).
7. *This will not be free though.* (yes). (*n* = 209 correct, *n* = 100 incorrect).
8. *By one estimation, your user data is worth over $800 in revenue a year!* (no). (*n* = 288 correct, *n* = 21 incorrect).
9. *Therefore, if each person were to triple their internet bill, this should cover the value of their data.* (no). (*n* = 286 correct, *n* = 23 incorrect).
10. *Let's make the internet work better by making it more stable and accessible for all.* (yes). (*n* = 251 correct, *n* = 58 incorrect).
11. *Are you tired of being a product?* (yes). (*n* = 235 correct, *n* = 74 incorrect).
12. *"Every day there are nearly 3000 cases of identity theft on the internet."* (no). (*n* = 294 correct, *n* = 15 incorrect).
13. *"Currently, many websites will have a pop-up that asks you if you consent to "cookies", this is essentially asking you if you consent to them collecting information on you."* (no) (*n* = 274 correct, *n* = 35 incorrect).
14. *"There are still a billion people in the world without access to high-speed internet."* (no) (*n* = 256 correct, *n* = 52 incorrect).
15. *"Some estimates suggest around 5% of people are very worried about their internet privacy."* (no) (*n* = 284 correct, *n* = 25 incorrect).

The points from the 15 items of the argument recall measure were summed for each participant. The average argument recall score was (*M* = 12.5, *SD* = 2.11).

Argument Recall Analyses: An ANCOVA test was conducted with frame as the factor, pretest agreement and self-monitoring as covariates, with the frame*self-monitoring interaction, and argument recall as the dependent variable. The main effect of frame was not significant, $F(3, 300) = 0.76$, $p = .517$, $\eta^2p = 0.01$ (see Table 25 for the ANCOVA test, and see Table 26 for marginal means). Thus hypothesis 1 was not supported. Furthermore, the interaction between self-monitoring*frame was not significant, $F(3, 300) = 0.94$, $p = .424$, $\eta^2p < 0.01$. Therefore, the argument recall variable did not support hypotheses 3 or 4.

Table 25. ANCOVA Test for Argument Recall

	SS	df	*F*	*p*	η^2p
Model	52.59	8	1.49	.160	0.04
Pretest agreement	6.49	1	1.47	.226	0.01
Self-Monitoring	12.86	1	2.92	.089	0.01
Frame	10.05	3	0.76	.517	0.01
Self-Monitoring ✻ Frame	12.36	3	0.94	.424	0.01
Residuals	1322.59	300			
Total	1375.18	308			

Table 26. Estimated Marginal Means for Argument Recall

				95% Confidence Interval	
Frame	*M*	*SE*	df	Lower	Upper
1.Control	12.6	0.24	300	12.1	13.1
2.Be open-minded	12.4	0.24	300	11.9	12.9
3.Be liked	12.8	0.24	300	12.4	13.3
4.Be influential	12.2	0.25	300	11.7	12.7

Note. Estimated means are estimated averaging across interacting variables

Engagement Composite Data Preparation. Participants were asked three questions regarding how engaged they were when reading the counterattitudinal message. To support hypothesis 1, participants in any one of the experimental frames should be more engaged than participants in the control frame. A composite variable for engagement was created from the variables: open-mind (M = 5.62, SD = 1.62 ,Mdn = 6.00), attention (M = 6.26, SD = 1.20, Mdn = 7.00) and thought (M = 5.68, SD = 1.56, Mdn = 6.00). The scores from the three items were averaged to form the composite (1 = no engagement to 7 = very engaged) (M = 5.85, SD = 1.26, Mdn = 6.33) and the Cronbach's alpha score was found to be acceptable (α = .81). See Table 27 for the means and standard deviations of the engagement composite and the three items. (See Appendix U for the full items).

Table 27. Means and Standard Deviations for the Engagement Composite and it's Three Items: Open-mind, Attention and Thought.

	N	*M*	*Mdn*	*SD*
Engagement	309	5.85	6.33	1.26
Open-mind	309	5.62	6	1.62
Attention	309	6.26	7	1.20
Thought	309	5.68	6	1.56

Engagement Analyses. In order to support hypothesis 1, participants in any one of the experimental frames need to report being more engaged than participants in the control frame. An ANCOVA test was conducted with message frame as the factor, pretest agreement and self-monitoring as covariates, the frame*self-monitoring interaction, and engagement as the dependent variable (see Table 28). The test was significant for the main effect for frame, $F(3, 300) = 3.49$, $p = .016$, $\eta^2p = 0.03$. The effect size was small. A planned contrast revealed significant differences between the *control* ($M = 5.53$, *SE*, 0.14), and *be open-minded* frames ($M = 6.16$, $SE = 0.14$), $t(300) = -3.15$, $p = .002$, $d = -0.51$ (see Table 29 for contrasts; see Table 30 for marginal means). The effect size was medium. These significant results support hypothesis 1, such that participants in the *be open-minded* frame were more engaged when reading the counterattitudinal information that participants in the *control* frame. Note that the planned contrast for the difference between *control* ($M = 5.53$, *SE*, 0.14) and *be influential* ($M = 5.92$, *SE*, 0.15) were marginally significant, $+t(300) = -1.94$, $p = .054$, $d = -0.32$. The effect size was small. Suggesting that the be influential frame boosted participant engagement relative to the control

frame. Furthermore, the interaction between self-monitoring*frame was not significant, $F(3, 300) = 1.07$, $p = .361$, $\eta^2p < 0.01$. Therefore, the engagement variable did not support hypotheses 3 or 4. See Figure 11 for a visual representation of the results.

Table 28. ANCOVA Test for Engagement

	SS	df	*F*	*p*	η^2p
Model	23.90	8	1.94	.054	0.05
Frame	16.08	3	3.49	**.016**	0.03
Pretest agreement	2.31	1	1.45	.222	0.01
Self-Monitoring	0.63	1	0.41	.522	0.00
Frame ✻ Self-Monitoring	4.95	3	1.07	.361	0.01
Residuals	461.44	300			
Total	485.34	308			

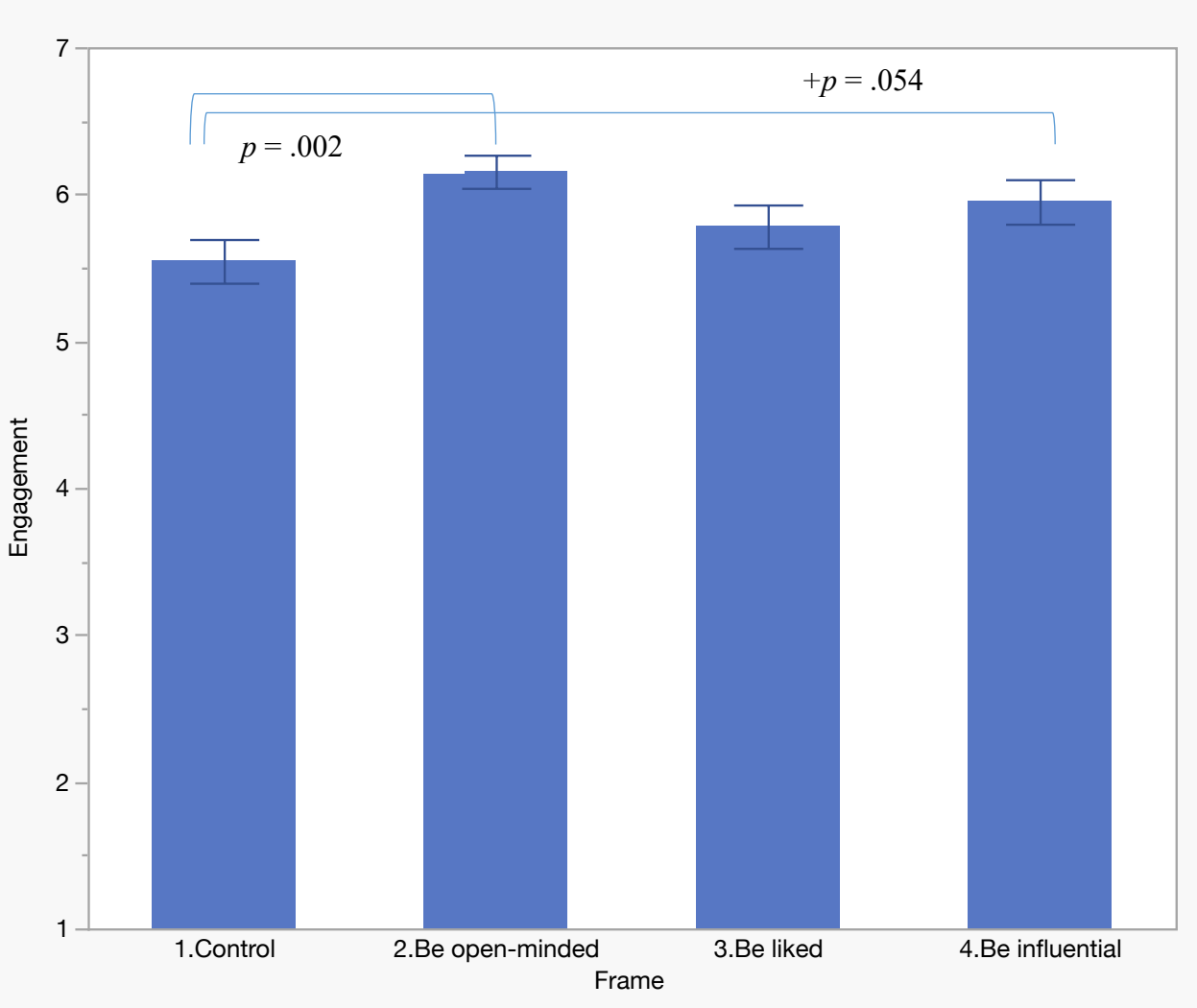
Table 29. Contrasts Between Frames for Engagement

Frame		Frame	Estimate	*SE*	*t*	*p*	*d*
1.Control	-	2.Be open-minded	-0.63	0.20	-3.15	**.002**	-0.51
1.Control	-	3.Be liked	-0.25	0.20	-1.23	.220	-0.20
1.Control	-	4.Be influential	-0.40	0.20	-1.94	.054	-0.32

Note. Significant results are bolded.

Table 30. Estimated Marginal Means for Engagement

				95% Confidence Interval	
Frame	*Mean*	*SE*	df	Lower	Upper
1.Control	5.53	0.14	300	5.25	5.80
2.Be open-minded	6.16	0.14	300	5.88	6.43
3.Be liked	5.77	0.14	300	5.49	6.05
4.Be influential	5.92	0.15	300	5.63	6.21



Note. Error bars were constructed using 1 standard error from the mean.

Figure 11. Engagement by Frame

Hypothesis 2: "*One or more of the experimental message frames will be more effective than the control at increasing the level of agreement with the counterattitudinal message."*

Agreement Analyses: An ANCOVA test was conducted with frame as the factor, pretest agreement and self-monitoring as covariates, with an interaction between frame*self-monitoring, and posttest agreement as the dependent variable. Pretest agreement (M = 1.16, SD = 0.42) and posttest agreement (M =1.98, SD = 1.39) both asked the same question: *"To what extent do you*

agree that people should have to pay twice what they currently pay for internet service?" (1 = strongly disagree to 7 = strongly agree). The main effect of frame was not significant, $F(3, 300) = 1.54$, $p = .203$, $\eta^2p < 0.02$ (see Tables 31 & 32). Therefore, it can be concluded that participants in the experimental frames were not any more likely than participants in the control frame to agree. Thus, hypothesis 2 was not supported.

To test whether all participants in the study, irrespective of frame, increased their agreement after reading the counterattitudinal message, a paired *t*-test was conducted between pretest agreement ($M = 1.16$, $SD = 0.42$) and posttest agreement ($M = 1.98$, $SD = 1.40$). Results were significant with a moderate effect size, $t(308) = 10.80$, $p < .001$, $d = 0.61$. This suggests that the counterattitudinal message was generally effective.

Table 31. ANCOVA Omnibus tests for Posttest Agreement

	SS	df	*F*	*p*	η^2p
Model	61.63	8	4.32	< .001	0.10
Frame	8.27	3	1.54	.203	0.02
Pretest agreement	44.54	1	24.96	< .001	0.08
Self-Monitoring	5.94	1	3.33	.069	0.01
Frame ✻ Self-Monitoring	3.02	3	0.56	.639	0.01
Residuals	535.21	300			
Total	596.84	308			

Table 32. Estimated Marginal Means for Posttest Agreement

				95% Confidence Interval	
Frame	*M*	*SE*	df	Lower	Upper
1.Control	2.08	0.15	300	1.78	2.38
2.Be open-minded	2.08	0.15	300	1.78	2.38
3.Be liked	2.07	0.15	300	1.77	2.37
4.Be influential	1.69	0.16	300	1.38	2.00

Note. Estimated means are estimated averaging across interacting variables

Study 2 Discussion

The primary goal of Study 2 was to explore how to mitigate selective exposure (i.e., the problem of people not being willing to be exposed to counterattitudinal opinions and information) by targeting the interpersonal motivator for selective exposure, *impression management* (Hart et al., 2009; Hart et al., 2020; Lundgrin & Prislin, 1998; Moore et al., 2023). The present study created and empirically tested 3 experimental message frames against a control frame to investigate which would be effective at mitigating selectivity through impression management framed messages. Further, some people are more predisposed to be concerned with managing their impression. These people are high in the personality trait *self-monitoring* (Snyder, 1974). Therefore, message interventions were crafted to target those who were either high or low in self-monitoring (hypotheses 3 and 4). This was the first selective exposure experiment, to our knowledge, that included the self-monitoring individual difference variable.

Study 2 had 4 message frames (1 is a control, 2 through 4 are experimental. For a more detailed description, see Chapter 3: Study 2 Overview). 2. Be open-minded instructed the participant to be more open-minded to information 3. Be liked by being open-minded told participants that being perceived as open-minded by others will make them more liked (i.e., ingratiation; McCrae & Costa, 1997; Moore et al., 2023; Teeny & Petty, 2022). This message frame was hypothesized to be particularly effective for high self-monitors, because people have changed their selective exposure behaviors in response to interpersonal impression management goals (Hart et al., 2009; Hart et al., 2020; Moore et al., 2023). 4. Be liked and influential by being open-minded conveyed to participants that being regarded as “open-minded” will help them be more liked and therefore, more influential (Chaiken et al., 1989; Tedeschi et al., 1971).

Furthermore, message frame 4 was written to target low self-monitors by giving them a tangible reason for being liked (i.e., being able to be more influential), whereas it was thought to persuade high self-monitors by giving them the benefit of being liked.

Participants in Study 2 were recruited on Cloud Research Connect and were asked to indicate if they agreed that internet bills should be doubled. Only participants who disagreed with this question were included in the analyses to ensure that the research paradigm matched with the attitude of the participant. Participants were randomly assigned into 1 of the 6 message frames. After reading the message frame, participants completed the *selective exposure headlines* task. In the selective exposure headlines task participants reported their interest in reading 3 proattitudinal articles, and 3 counterattitudinal articles (higher scores signify higher selective exposure). To induce the impression management motivation, participants were told that they may have a conversation with the author of the 530-word counterattitudinal message about doubling their internet bill. While participants read the counterattitudinal message, their *reading time* was logged (longer times mean less selective exposure; Knobloch-Westerwick & Meng, 2009; Whitt et al., 2023). The participants' *argument recall* score was the number of arguments they could correctly recall from the counterattitudinal message, with higher scores indicating better argument recall (i.e., lower selective exposure). Participants then indicated the extent to which they *engaged* with the counterattitudinal message (open-mind, attention, and thought; Banks & Brannon, 2023). Additionally, for hypothesis 2, the dependent variable of *agreement* was included (i.e., agreement that internet bills should be doubled). Lastly, participants completed the self-monitoring personality scale (Snyder & Gangestad, 1986).

Hypothesis 1 predicted that participants in the experimental frames would have reduced selective exposure than participants in the control frame. Specifically, a significant result for any

single one of the selective exposure dependent variables (i.e., selective exposure headlines, argument recall, reading time, engagement) would lend support for hypothesis 1. For the variable selective exposure headlines, the overall test was significant, and the planned comparison test found that the be open-minded and be liked frames were effective at reducing selective exposure compared to the control frame (see Table 19). Regarding the engagement variable, the main effect for frame was significant. Planned contrasts found that the be open-minded frame compared to the control significantly influenced participants to report being more engaged when reading the counterattitudinal message. Additionally, the be influential frame was marginally significant compared to the control at increasing engagement. Thus, statistical analyses found support for hypothesis 1. Specifically, the variables of selective exposure headlines and engagement were significant, but not argument recall or reading time.

One of the research interests was to investigate if it was necessary to give participants a social benefit for looking at the information (i.e., frame 3 being liked or frame 4 being more influential if they are liked), or if simply advocating for being open-minded (i.e., frame 2 be open-minded) would be sufficient. The finding that the be open-minded frame was significant for the two variables supporting hypothesis 1 (selective exposure headlines and engagement) indicates that a simpler message is sufficient. Alternatively, it could also be argued that the research paradigm was not compelling enough in order to elicit the impression management motivation for participants in message frames 3 and 4. More will be said on this in the limitations section.

For hypothesis 2, it was predicted that participants in the experimental frames would agree more with the main idea of the counterattitudinal message (i.e., doubling the cost of their internet bills) than participants in the control frame. However, none of the experimental frames

were able to significantly increase the participants' agreement levels compared to the control frame. Therefore, hypothesis 2 was not supported. This is not surprising given how strongly the participants disagreed with the attitude-topic when they were first asked about it before being randomized into the message frames. Pretest agreement was extremely low. Moore et al. (2023) argued that decision-accuracy and impression management concerns are two reasons why people may interact with information and that sometimes these goals are at odds with each other. Therefore, the finding in Study 2 that participants engaged more with the information, even though it was on a topic they disagreed strongly with, could indicate that participants were responding to the impression management motivation. Although none of the message frames influenced participants to agree with it, it is promising that participants were more willing to engage with a message that they found so disagreeable. This is important in domains of affective polarization where people strongly disagree, but free exchange of ideas is necessary (e.g., political views; Mutz, 2002, 2006; Mutz & Martin, 2001).

Hypothesis 3 predicted that "in message frame 3 (be liked), the higher self-monitors will be more influenced than lower self-monitors to be less selective. This will be demonstrated by an interaction between message frame and self-monitoring." Like the prior analyses, a significant result in the hypothesized direction for any one of the selective exposure variables (i.e., selective exposure headlines, argument recall, reading time, and engagement) would lend support for hypothesis 3. For the selective exposure headlines variable, there was a significant interaction effect for frame and self-monitoring, however, the simple effects test did not find a significant result for the be liked message frame. However, there was a significant simple effects test for the control frame, such that higher self-monitoring for participants in the control frame was predictive of higher selectivity on the selective exposure headlines task. The significant result

was not hypothesized; therefore, the interpretation is done cautiously. However, it is suggestive that higher self-monitoring is predictive of higher selective exposure. Furthermore, results were not significant for any of the other selective exposure dependent variables, therefore, hypothesis 3 was not supported.

Hypothesis 4 predicted that "message frame 4 will be more effective for lower self-monitors than message frame 3 at mitigating selective exposure. This will be demonstrated by an interaction between message frame and self-monitoring." Like the prior analyses, a significant result in the hypothesized direction for any one of the selective exposure variables (i.e., selective exposure headlines, argument recall, reading time, and engagement) would lend support for hypothesis 4. Given the significant interaction between frame and self-monitoring for the selective exposure headlines variable, an independent-samples *t*-test was conducted between message frames 3 and 4 for low self-monitors. However, the results from this analysis were not significant. Furthermore, results were not significant for any of the selective exposure dependent variables, therefore, hypothesis 4 was not supported. As discussed in the previous paragraph regarding hypothesis 3, the reason that the frame and self-monitoring interaction was significant was that for the control frame, self-monitoring was predictive of higher selective exposure (i.e., selective exposure headlines score). This is suggestive that higher self-monitoring leads to higher selective exposure tendencies. Research should investigate further if this is a finding that replicates or was contingent upon the current research paradigm.

Study 2 Theoretical Implications

Study 2 contributes to the burgeoning research investigating the interpersonal component of selective exposure (Adams et al., 2018; Hart et al., 2020; Moore et al., 2023; Teeny et al., 2022l; Whitt et al., 2023). Specifically, Study 2 heeded a suggestion by Moore and colleagues

(2023) in their section on practical contributions to design interventions that tap into people's concerns of the reputational consequences of their information selection behaviors. To communicate the interpersonal effects of information selection behaviors, the message *frames be liked by being open-minded* (be liked, frame 4) and *be liked and influential by being open-minded* (be influential, frame 4) conveyed to participants the interpersonal benefits they could receive. Specifically, in message frame 3 participants were told they could be liked by being open-minded, and that in message frame 4 that they would not only be liked but be more influential. Although the be liked (emotional) impression-management frame was effective at mitigating selectivity for the engagement variable, the most effective frame was the simple cognitive be open-minded frame. As in Study 1, the more cognitive message worked best (i.e., be open-minded). Once again, this suggests that, in a selective exposure context, people are not as influenced by emotional messages (i.e., being liked) as logical messages. Therefore, future message interventions should consider utilizing cognitively focused frames, even when there may be impression management motivations present.

Regarding *self-monitoring* (Snyder, 1974), Study 2 investigated if tailoring to high and low self-monitors would enhance the persuasiveness of the intervention messages. It was predicted that being liked in and of itself might be more desirable for high self-monitors, and that being influential might be more desirable for low self-monitors. Although, contrary to predictions, the intervention frames did not appear to interact with self-monitoring, an experimental analysis found that higher self-monitors in the control frame were more selective. Therefore, it appears that self-monitoring is playing a role with regards to selective exposure behaviors, but this study did not reduce selectivity for high self-monitors. Future research should investigate how to increase the impression management motivation to tap deeper into self-

monitoring. This was the first selective exposure study to our knowledge to include self-monitoring, therefore, more research needs to be done.

Alternatively, it is possible that people who took the survey by themselves on the internet were not concerned at all with impression management concerns, even though they were warned that they could have an interaction with the author of the internet bills message. Furthermore, it is possible that interactions on the internet, even though may be interpersonal in nature, might not have a strong enough interpersonal component to elicit impression management effects. It may require face-to-face interaction. In other words, a generic message advocating for being more likable or influential without saying who might like you or be influenced by you may not be sufficiently impactful. To illustrate, in the Teeny and Petty (2022) study, participants were asked about an upcoming in-person interaction they would have with a family member who held an opposing attitude. Participants were less likely to interact with that person if they perceived them as having an emotional attitude and were attitudinally closed-minded. Conversely, people on the internet may be mainly motivated by accuracy and defense concerns rather than impression management concerns. Therefore, for selective exposure on the internet, the simpler accuracy and defense model of selective exposure may be the correct one (Hart et al., 2009). It may be necessary to compare impression management focused frames across domains (i.e., internet and in-person), and manipulation to better understand the role of the domain/platform.

In sum, findings from this research could be used to inform techniques for teaching critical thinking skills to children in school. Specifically, a simple training teaching the usefulness of being open-minded might be effective at increasing students' willingness to look at attitudinally-inconsistent information.

Study 2 Limitations

Notwithstanding the contributions of Study 2, there were a number of limitations that hampered the current research: the research paradigm may not have been well-suited to test self-monitoring, and there were some statistical limitations for testing hypothesis 4. Furthermore, there were several limitations in Study 2 that Study 1 also suffered from: sample issues, all participants may have been accuracy motivated, and there was only 1 attitude topic. These limitations that both studies share will be covered in the general discussion.

Self-Monitoring. Regarding the nonsignificance of the self-monitoring predictions, it is possible that participants did not perceive a strong enough interpersonal component to the study. Specifically, participants completed the survey by themselves on the internet. Naturally, this may have reduced the degree to which participants attempted to manage their impressions. Consequently, participants lower in self-monitoring may have been more willing to engage with counterattitudinal information in order to get at the truth (value-adjustive attitudes), whereas those higher in self-monitoring did not care because they perceived no social aspect to the research study (socially-adjustive attitudes) (DeBono, 2006). This also suggests that self-monitoring is not necessarily a global phenomenon that impacts behaviors of people whether or not impression management concerns are present, but rather it affects their behavior more so when those impression management motivational cues are salient (i.e., when other people are present). Similar to the findings in the present study, Moore et al. (2023) did not find people's selective exposure behaviors to be influenced by intuiting how other people would observe their actions. However, in Moore et al.'s (2023) study, observers did notice that it was important for others to view the counterattitudinal information. Therefore, it may be necessary to construct a

paradigm in which people are made more aware of the interpersonal impressions that their selective exposure behaviors elicit.

Study 2 Future Directions

The discussion of future directions that pertain to both Study 1 and Study 2 are found in the general discussion. The following future directions apply to unique aspects of Study 2.

Enhance the interpersonal component. In the discussion on self-monitoring, it was mentioned that it may be somewhat necessary to construct a paradigm in which people are made more aware of the interpersonal impressions that their selective exposure behaviors elicit. Research on impression management and selective exposure found that participants changed information selection behaviors based on the identity of the observer (Moore et al., 2023). Therefore, future research on selective exposure and impression management should create an interaction where people care about the relational outcome, and the attitude topic(s) is(are) of sufficient importance to the participant (Hart et al., 2009). This should allow impression management focused messages to be more influential, particularly for those scoring higher in impression management concerns (i.e., high self-monitors).

Change the interpersonal variable. Regarding future studies, it is possible that people will respond stronger to a message about interpersonal familiar interactions. A study (Teeny & Petty, 2022) found that attributing counterattitudinal attitudes as emotionally held led participants to believe that their family member who held the attitude was not open, and subsequently resulted in less interpersonal interaction. Conversely, inferring the family member as attitudinally open led to more engagement willingness. Applying these findings in a future study could be fruitful. For example, a message could say: “research has found that family

members are more willing to engage in interpersonal communication when they see you as open-minded. Therefore, you should try to come across as attitudinally open."

Study 2 Conclusion

Results from Study 2 found that short intervention messages that told people they should *be open-minded*, that they could *be liked by being open-minded* and *be liked and influential by being open-minded* were effective at mitigating selective exposure. Furthermore, Study 2 included the personality variable of self-monitoring (Snyder, 1974), which assesses the level to which people actively manage their impressions. For the be open-minded frame, two dependent variables: selective exposure headlines and engagement emerged as significant. The be liked by being open-minded frame persuaded participants to be less selective on the selective exposure headlines task, and the be liked and influential by being open-minded frame resulted in more engagement. Although the two impression-management frames were effective, the most effective frame was the be open-minded frame. The finding that the impression management focused frames did not result in increased exposure above and beyond the be open-minded frame lends credence to the traditional conceptualization of selective exposure being motivated mainly by intrapersonal motivators (accuracy and defense, Hart et al., 2009) rather than interpersonal (impression management). Therefore, the present findings are not surprising, nor inconsistent with the literature. Also lending support to this idea that the impression management motivation was not as strong as predicted, the self-monitoring variable did not influence selectivity in the interpersonal message frames. In sum, given that the open-minded frame performed better than messages advocating for interpersonal benefits (being liked and being influential) and that self-monitoring did not have an effect, is suggestive that impression management concerns did not meaningfully influence selectivity. Alternatively, it is possible that the research design did not

sufficiently tap into the impression management motivation enough to reduce selective exposure, therefore future research should utilize a research paradigm with a stronger interpersonal component. As discussed in the introduction, there are many reasons why selective exposure is problematic, and why so many researchers have called for investigating how to mitigate it. Therefore, the present study adds its voice to call for more research on mitigating selective exposure.

Chapter 4 - General Discussion

This dissertation utilized the theoretical framework of three motivations for selective exposure: accuracy, defense, and impression management (Hart et al., 2020; Hart et al., 2009). Intervention message frames in Study 1 targeted the accuracy and defense motivations, whereas frames in Study 2 targeted the impression management motivation. Experimental frames in both studies persuaded participants to select more counterattitudinal information relative to control frames, thereby, reducing their selective exposure. Specifically, in Study 1, message frames advocating for participants to be unbiased, consider the opposite, and engage with information to defend themselves (inoculation) were effective at reducing selective exposure. Messages telling the participant to not just judge information based on how they feel about it (cognitive dissonance) and affirming the participant (self-affirmation) were not effective. In Study 2, message frames advocating for being open-minded, being liked if you're open-minded, and that you can influence others if you're open-minded were effective.

Consistent between the two studies, the selective exposure headlines and engagement dependent variables emerged as significant. The selective exposure headlines task is a common paradigm within selective exposure studies (Dorison et al., 2019; Hart et al., 2009; Iyengar & Hahn, 2009; Stroud, 2014). Therefore, it is a strength of this dissertation that it demonstrated significance across two independent research experiments. Furthermore, the selective exposure headlines variable is the most common and appropriate measure of selective exposure because the results are less likely to be confounded with attentiveness. Conversely, the argument recall and reading time variables do not have this strength.

The significance of frames targeting each of the three motivations (i.e., accuracy, defense, impression management) lends support that tailoring messages to different motivations

can be an effective method towards mitigating selective exposure to information (Moore et al., 2023). Furthermore, the discussion from Study 1 suggested that adopting the cognitive vs affective framework could be a more effective way at creating messages that mitigate selectivity than solely relying on accuracy, defense, and impression management. This was because in Study 1, the cognitive messages (be unbiased, consider the opposite, inoculation) were effective, and the affective messages (cognitive dissonance, self-affirmation) were not. Related to Study 2, recent research by Teeny and Petty (2022) utilized an affective-cognitive framework to demonstrate that people are more willing to interact with others whom they assume hold cognitive attitudes rather than affective attitudes. These findings suggest that the affective-cognitive framework could serve as the theoretical framework for future research on mitigating impression management motivated selectivity.

Dissertation Limitations

Sample Issues. The Cloud Research Connect platform was chosen because the participants tend to give better quality data than other participant pools (e.g., Mturk, see Stagnaro et al., 2024). Lending support for the high data quality, only 1 participant in Study 1 failed the attention check, and no participants in Study 2 failed the attention check. However, better attentiveness from participants is a two-edged sword in a selective exposure study. For other research paradigms, overall high attentiveness from all participants would likely be beneficial, however, for a selective exposure study, this potentially hindered the results as there may not have been room for the participants in experimental frames to improve their exposure compared to the control frame. This is because Connect participants have strong incentives to be attentive. Participants make sure to pay enough attention to pass attention checks, as failing these could result in not being paid. Furthermore, if participants do not give good data, then they may be

flagged within the Connect system which affects their ability to qualify for future work. These motivations possibly interfered with the manipulations of the message frames, such that the experimental frames did not significantly influence participants' engagement relative to the control because all participants were already sufficiently incentivized by the nature of the Connect platform. This can also explain why the selective exposure headlines task was effective as it was not contingent upon attentiveness, instead, it assessed the degree to which participants would be interested in reading counterattitudinal and proattitudinal content.

Corroborating this, recent research found that Connect samples compared to others perform highest in attentiveness and effort (Stagnaro et al., 2024). Furthermore, Stagnaro et al. expounded upon the issue that these more attentive participants tend to not be as representative. One of the "rules of thumb" Stagnaro and colleagues suggest that could have helped Studies 1 and 2 is to restrict the study to participants with less experience/exposure to studies.

All participants may have been unintentionally motivated towards accuracy. Another limitation is that all participants were informed that it was very important for them to pay attention to the message frame: *"On the next page you will read a short message and it is* ***extremely important*** *to pay attention to the message and you will be asked questions about it to see if you got the main point."* It is likely that these instructions caused all participants, even those in the control frame, to be more attentive, thereby watering down the effect of the experimental frames. It was thought by the researchers that it was vital for the participants to interact with the message frame so that they could then be influenced by it. However, this instruction could have had more of an enduring effect than intended, causing all participants, even those in the control frame, to interact more for the entire duration of the study. As noted before, this can also explain why the selective exposure headlines task was effective as it was not

contingent upon attentiveness, instead, it assessed the degree to which participants would be interested in reading counterattitudinal and proattitudinal content.

Only one topic for the counterattitudinal message was utilized. It was a strategic decision to limit the selective exposure topic to solely one novel topic to have more experimental control, thereby, boosting internal validity. This would allow the findings to establish that the message frames were the independent variable causing change in selective exposure, rather than the participant's preestablished views on a topic. Given the novelty of the message (i.e., unfamiliarity), the message may not have been particularly engaging, therefore, people may not have been particularly interested nor opposed to exposure (Brannon et al., 2007).

Dissertation Future Directions

New sample requirements. Consistent with recommendations from Stagnaro et al. (2024), future research should recruit participants on Connect that have less experience with participating in research studies.

Multiple attitude-topics. Future research could also test multiple topics that people have strong opinions on. As discussed, one limitation that this study had was that it only utilized one cognitive topic area (i.e., internet bills), however, other selective exposure studies use multiple topics and then can see how a message interacts with the different topics. Therefore, future research could use attitude topics on abortion, political parties, climate change, religion, or personal health (for a good source of topics in selective exposure studies see Hart et al., 2009). It is very well possible that different messages will work better at mitigating selective exposure for different attitude topics. Furthermore, these message frames should be tested with more mundane realism to boost external validity. For example, the selective exposure headlines task could take place with a simulated news website, or with a social media feed. Therefore, future research

should investigate independent variables of topic area, and platform (e.g., social media feed, news website). These issues with selective exposure permeate a wide range of topics, therefore, it is necessary to identify methods that are effective at mitigating selective exposure and are robust across topics and platforms.

Dissertation Conclusion

The theoretical framework supporting this dissertation showed some promise (i.e., intrapersonal and interpersonal motivations of selective exposure, Hart et al., 2020; Hart et al., 2020; Moore et al., 2023). However, the affective and cognitive base of attitudes and matching them to persuasive messages is worth investigating further. Specifically, in Study 1 the cognitively focused frames (be unbiased, consider the opposite, and inoculation) exhibited effectiveness at mitigating selective exposure. Whereas the affective frames (cognitive dissonance, and self-affirmation) were not effective. In Study 2, all intervention frames demonstrated some effectiveness at mitigating selectivity (be open-minded, be liked by being open-minded, and be liked and influential by being open-minded). However, the be open-minded frame (which was a cognitive focused frame) was the most effective. Furthermore, the inclusion of self-monitoring in Study 2 was a novel contribution. These ideas are worth exploring further with research paradigms involving real interactions with other people to ensure the interpersonal component is present for self-monitors. Selective exposure to information interferes with making good decisions, being able to defend one's views, and good interpersonal interactions. It is promising therefore, that the two research studies were able to identify message frames to persuade participants to be less selective to information.

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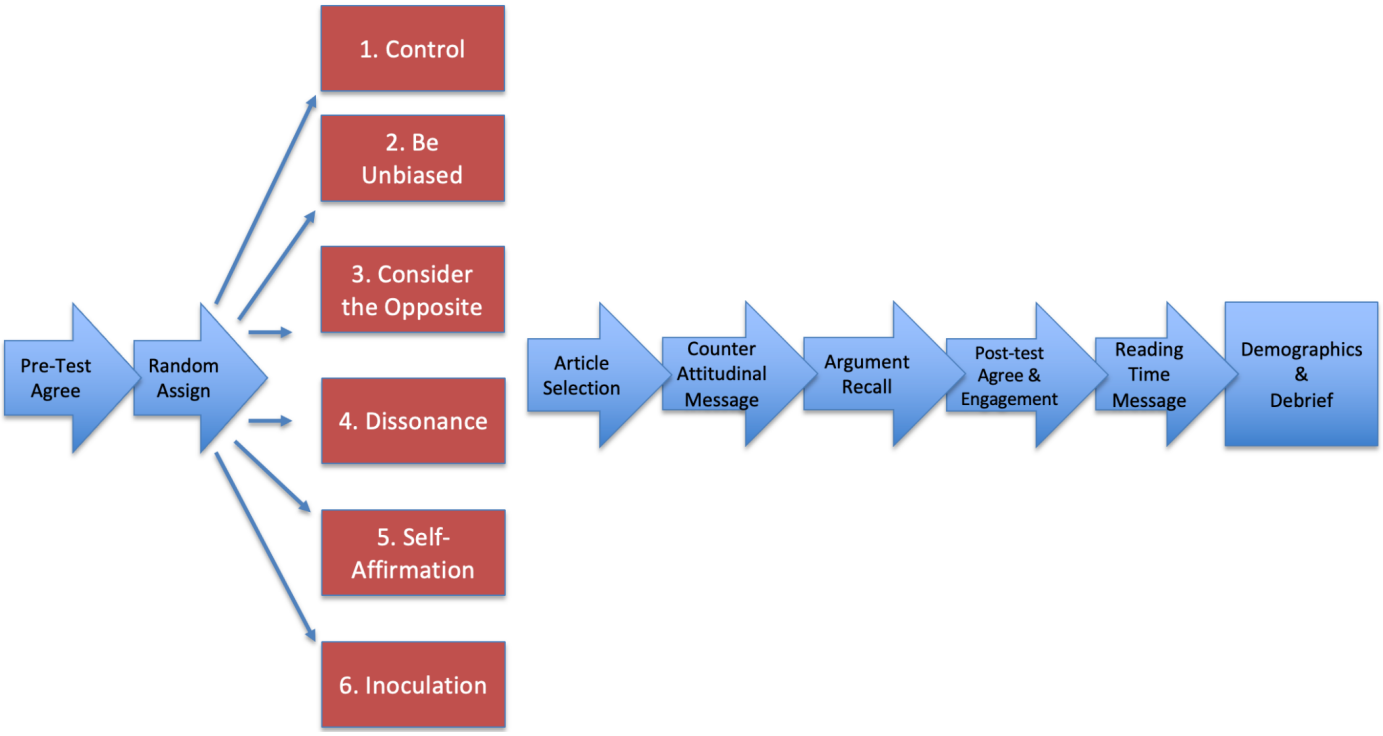
Appendices

Study 1 will be presented in its entirety and then Study 2 will be presented in its entirety.

Note. Most of the methodology for study 2 is the same as study 1, but I have opted to include them here in their entirety as to properly display what the participants will see when they take the survey. Appendices where differences lie are M, N, P, Q, S, W, and Z. These differences are: the message frames (and survey flow), the instructions before the counterattitudinal message, the attention check questions, the self-monitoring scale and the conversation with the randomly selected participant.

Appendix A - Survey Flow for Study 1



Appendix Figure A.1. Survey Flow for Study 1

Appendix B - Study 1 Informed Consent

PROJECT TITLE: Influence of Mindset on Message Processing
LENGTH OF STUDY: 18 minutes
PRINCIPAL INVESTIGATOR: Laura Brannon Ph.D.
CO-INVESTIGATOR: Lane Banks M.S.

CONTACT DETAILS FOR PROBLEMS/QUESTIONS: Laura Brannon, lbrannon@ksu.edu, (785) 532-6850

IRB CHAIR CONTACT INFORMATION: Lisa Rubin, Chair, Committee on Research Involving Human Subjects, 203 Fairchild Hall, Kansas State University, Manhattan, KS 66506, (785) 532-3224; Brad Woods, Associate Vice President for Research Compliance, 203 Fairchild Hall, Kansas State University, Manhattan, KS 66506, (785) 532-3224.

PURPOSE OF THE RESEARCH: Please read below for more information about this study to decide if you would like to proceed. Please, also consider setting aside about 18 minutes if you're taking this study. Distractions and other things requiring your attention should be relatively low. We are looking to see how mindset impacts information processing. We use message processing frames to investigate how they influence perceptions of a message.

PROCEDURES OR METHODS TO BE USED: You will be asked to read a message about various aspects of information exposure and processing. Afterwards, all participants will read a longer message that deals with a non-intimate social issue. As a participant in this study, you will be asked to truthfully answer several questions. You will also answer several questions about the message. There are several additional questionnaires that you will be asked to fill out.

RISKS OR DISCOMFORTS ANTICIPATED: As a participant, little risk/discomfort is expected to be felt while taking this study. Levels of stress or discomfort shouldn't exceed levels beyond what you'd expect in normal, everyday, conversations.

BENEFITS ANTICIPATED: $3.00 upon successful completion of the survey. Be aware that if you do not pass the attention check question(s) you may not receive compensation.

EXTENT OF CONFIDENTIALITY: Participant responses in this study will be completely confidential. Participants will only be identified with randomized numbers assuring confidentiality with each of your responses. Although collected data may be made public or used for future research purposes, your identity will always remain confidential.

Terms of participation: I understand this project is research, and that my participation is voluntary. I also understand that if I decide to participate in this study, I may withdraw my consent at any time, and stop participating at any time without explanation, penalty, or loss of benefits, or academic standing to which I may otherwise be entitled. I verify that by clicking continue that I have read and understand this consent form, and willingly agree to participate in this study under the terms described.

Do you consent?

Yes

No

Appendix C - Pre-test Question (The same as study two)

Pre-test Agreement:

"To what extent do you agree that people should have to pay twice what they currently pay for internet service?"

	Strongly disagree (1)	(2)	(3)	(4)	(5)	(6)	Strongly agree (7)
	○	○	○	○	○	○	○

Appendix D - Study 1 Message Frames

Message Frames: 1 Control and 5 Experimental. (Participants were randomly assigned into one of the six)

1. Control (Adapted from Whitt et al., 2023) 117-words

"Now, we would like for you to read a short passage about human psychology. Please carefully read the passage below.

Psychology of Attitudes

Each of us evaluates our worlds. We form likes and dislikes of virtually every thing or issue we encounter; these are called 'attitudes'. Simply put, for example with regard to an issue, attitudes are evaluations of the issue. Attitudes are important because they often determine what we do regarding an issue.

The following are the three major components of an attitude:

Cognitive component. The thoughts and beliefs that people form about the issue.

Affective component. The emotional reactions that people have towards the issue.

Behavioral component: The behaviors that people display towards the issue."

Type in the main point of the message above (Hint: it is the bolded and underlined title).

_____.

2. Be Unbiased (adapted from Lord et al., 1984). 106-words

"Now, we would like for you to read a short passage about human psychology. Please carefully read the passage below.

Be Unbiased

People tend to prefer information that supports their views over information that disagrees with it. However, this can sometimes lead to bad decision-making. Therefore, we would like you to be

as objective and unbiased as possible in evaluating the information you read. You might consider yourself to be in the same role as a judge or juror asked to weigh all of the evidence in a fair and impartial manner.

So please resist any temptation you have to ignore information you initially disagree with."

Type in the main point of the message above (Hint: it is the bolded and underlined title).

_____.

3. Consider the Opposite 121-words

"Now, we would like for you to read a short passage about human psychology. Please carefully read the passage below.

Consider the opposite

Research has found that the best way to make decisions is different from how most people make them. Most people try to only find information that supports the decisions they are making. However, this blinds them to alternative, oftentimes better, solutions. For example, you want to buy a certain car and focus on positive reviews but ignore negative reviews about it.

It is best to ask yourself: 'which information, if true, would mean that I have the wrong idea, or am making the wrong decision?' Considering the opposite is in your best interest to obtain a correct attitude/decision/judgment."

Type in the main point of the message above (Hint: it is the bolded and underlined title).

_____.

4. Cognitive Dissonance Message 121-words

"Now, we would like for you to read a short passage about human psychology. Please carefully read the passage below.

Feelings aren't facts

Research has shown that it is uncomfortable to be exposed to information that conflicts with our attitudes solely because it is different, not because it is wrong. Feelings aren't facts.

For example, John smokes but he knows smoking is bad for him and that makes him feel uncomfortable. Does that discomfort mean that he should deny that smoking is bad for him? No. You may feel uncomfortable seeing conflicting information, but that's natural.

Don't just trust the feeling you have when you look at information. Feelings aren't facts. Make sure to evaluate messages in a logical, unbiased manner."

Type in the main point of the message above (Hint: it is the bolded and underlined title).

_____.

5. Self-Affirmation Message 102-words

"Now, we would like for you to read a short passage about human psychology. Please carefully read the passage below.

You're open-minded

According to our research, most Cloud Research workers tend to be thoughtful, highly intelligent people. It is beneficial to be a thoughtful and considerate person, especially when encountering information that you might not necessarily agree with. You should be proud that you are amongst those who are compensated for their opinions because your contributions are so valuable!

Now, if someone challenges something you feel strongly about and it makes you feel kind of bad, that's okay, you're an open-minded person."

Type in the main point of the message above (Hint: it is the bolded and underlined title).

_____.

6. Inoculation Message 124-words

"Now, we would like for you to read a short passage about human psychology. Please carefully read the passage below.

Resist persuasion by being informed

Research has shown that being aware of arguments from the other side of controversial topics can help you resist persuasion attempts. This is the same process as which people are vaccinated against diseases. To inoculate someone against a virus, they are given a small amount of that virus to help the body learn how to defend against it. Likewise, you may be similarly inoculated against information you disagree with.

So, next time you have an opportunity to look at information you disagree with, make sure to take a look, if only to learn how to defend yourself against it."

Type in the main point of the message above (Hint: it is the bolded and underlined title).

_____.

Appendix E - Study 1 Attention Check:

*Each message frame was only presented with the attention check that is written for their message frame. The correct answer is indicated by (1) next to the choice.

(1. Control): *"What was the main theme of the message you just read?*

- o *The education system is changing how they teach upcoming generations* (0)
- o *Books are a good tool for learning new information* (0)
- o *The digital age brings instant access to information* (0)
- o *There are cognitive, affective, and behavioral components of attitudes* (1)

(2. Be Unbiased): *"What was the main theme of the message you just read?*

- o *The education system is changing how they teach upcoming generations* (0)
- o *Books are a good tool for learning new information* (0)
- o *The digital age brings instant access to information* (0)
- o *Being unbiased when evaluating information* (1)

(3. Consider the opposite): *"What was the main theme of the message you just read?*

- o *The education system is changing how they teach upcoming generations* (0)
- o *Books are a good tool for learning new information* (0)
- o *The digital age brings instant access to information* (0)
- o *Making better decisions by considering why you could be wrong* (1)

(4. Cognitive Dissonance): *"What was the main theme of the message you just read?*

- o *The education system is changing how they teach upcoming generations* (0)
- o *Books are a good tool for learning new information* (0)
- o *The digital age brings instant access to information* (0)
- o *Feelings aren't facts, just because a message makes you uncomfortable doesn't mean you should ignore it* (1)

(5. Self-Affirmation): *"What was the main theme of the message you just read?*

- o *The education system is changing how they teach upcoming generations* (0)

- *Books are a good tool for learning new information* (0)
- *The digital age brings instant access to information* (0)
- *Cloud Research Users are open-minded* (1)

(6. Inoculation): *"What was the main theme of the message you just read?*

- *The education system is changing how they teach upcoming generations* (0)
- *Books are a good tool for learning new information* (0)
- *The digital age brings instant access to information* (0)
- *Being informed on both sides of an issue allows you to defend your position* (1)

Appendix F - Selective Exposure Article Headlines (The same as study two)

*These article titles were displayed in a random order.

"The following article titles are about a proposal to double internet service bills. For each of the following article titles please indicate how interested you would be to read the full-length article."

1. Counterattitudinal:

"Say YES! Paying Larger Internet Bills Will Actually Help Us Out!"

	1. Not at all interested (1)	*2. (2)*	*3. (3)*	*4. (4)*	*5. (5)*	*6. (6)*	*7. Very Interested (7)*
How interested are you in reading this article?	○	○	○	○	○	○	○

2. Counterattitudinal:

"Several Reasons Why Doubling Your Internet Bill is Beneficial!"

	1. Not at all interested (1)	*2. (2)*	*3. (3)*	*4. (4)*	*5. (5)*	*6. (6)*	*7. Very Interested (7)*
How interested are you in reading this article?	○	○	○	○	○	○	○

3. Counterattitudinal:

"Why One Instagram Influencer Supports Doubling $$$ Spent on Internet Service Bills!"

	1. Not at all interested (1)	*2. (2)*	*3. (3)*	*4. (4)*	*5. (5)*	*6. (6)*	*7. Very Interested (7)*
How interested are you in reading this article?	○	○	○	○	○	○	○

4. Proattitudinal:

"Why charge us more? These Internet Service Fees Are Getting Out of Hand!"

	1. Not at all interested (1)	*2. (2)*	*3. (3)*	*4. (4)*	*5. (5)*	*6. (6)*	*7. Very Interested (7)*
How interested are you in reading this article?	○	○	○	○	○	○	○

5. Proattitudinal:

"At First it Sounded Bad, and it is Still Bad, Say NO! to Doubling Internet Service Charges!"

	1. Not at all interested (1)	*2. (2)*	*3. (3)*	*4. (4)*	*5. (5)*	*6. (6)*	*7. Very Interested (7)*
How interested are you in reading this article?	○	○	○	○	○	○	○

6. Proattitudinal:

"*Social Media Influencers Speak Out Against Internet Bill Increases"*

	1. Not at all interested (1)	*2. (2)*	*3. (3)*	*4. (4)*	*5. (5)*	*6. (6)*	*7. Very Interested (7)*
How interested are you in reading this article?	○	○	○	○	○	○	○

Scoring: Articles 1, 2, and 3 are counterattitudinal. Articles 4, 5, and 6 are proattitudinal. Scores for counterattitudinal article titles were be reverse coded. The proattitudinal and counterattitudinal scores were averaged and combined into a composite score. Higher scores mean that the participant is less likely to be willing to view counterattitudinal information.

Appendix G - Counterattitudinal Message (530 words): (The message is the same as study two but the instructions before the message are slightly different)

On the page preceding the counterattitudinal message, participants read the following: "*On the following page, you will be presented with one of the full-length articles to read. We want to see what people are interested in reading, that is why we asked you to indicate which articles you are interested in reading. However, until we know what everyone says, we will give people a random article to read. In the future, we will take into account what people say."*

The next page: (The same as study two)

"Several Reasons Why Doubling Your Internet Bill is Beneficial!

"The true cost of the internet is not being properly charged to the end consumer. Once this cost is redistributed, the average person will be paying double what they are currently paying for their internet bill. This could mean you pay $600 extra a year.

The internet provides great benefits to people: chiefly among them being instant access to millions of websites. However, this is expensive to maintain and the more time you spend on it causes more strain on the infrastructure (fiber-optic lines; data warehouses, servers, security). Think of it like our highways: the more time you spend driving on the highways, the more wear and tear you do. Therefore, you pay additional fees on your gasoline that goes towards highway maintenance. The more you use it, the more you pay for its upkeep. Well, our virtual highways are crumbling, and we need your tax-dollars to fill the potholes. Recently, there have been cases of internet servers being overloaded, causing great disruptions to many sectors, such as the

airline industry! The internet overall is being run on a shoe-string budget relative to its size and more money needs to be raised to pay for its upkeep.

There are even parts of our country that do not have access to broadband internet! The main obstacle being the cost of infrastructure. Larger internet service bills can be the answer to transport these 7 million Americans from the digital stone age to the modern one.

Additionally, the cost of many websites is largely subsidized by collecting your private information and then selling it to advertisers. Unsurprisingly, most people are not happy with this. A Pew research study found that 79% of U.S. adults are "very" or "somewhat concerned" about how their data is used. Therefore, I argue that privacy should and can be given back to the end user, which is you! This will not be free though. It would require you to pay more for your internet bill so that websites can still operate without needing to resort to selling you out.

So, how much will this cost you? By one estimation, your user data is worth over $600 in revenue a year! What if the internet user were to pay that additional $600 each year to not have their data tracked and sold? The average internet bill in the US is $63/month. Therefore, if each person were to double their internet bill, this should cover the value of their data. This increased revenue could be used so that the internet and companies could function without selling user data. Another benefit of minimizing data collection would be a lessened risk of your information being leaked during data breaches, since there would be no data to leak.

Let's make the internet work better by making it more stable and accessible for all. The more we pay, the greater the internet can become! There is a common phrase: "If you're getting it for free, then you are the product". Are you tired of being a product? Let's make the internet work for you rather than for advertisers by paying your fair share for it."

Appendix H - Counterattitudinal Message Argument Recall: (The same as study two)

The sentences were presented in a random order. The correct answer is indicated by (yes/no) next to the choice.

Were the following sentences in the text you read? (Yes or No).

You are indicating whether or not the sentences were in the text, not whether you agree with it. Some of these sentences were in the article, and some were not. In other cases, the sentence was in the article but has been changed slightly. In these cases, you should mark "no".

16. *"The true cost of the internet is not being properly charged to the end consumer" (yes).*
17. *The internet provides great benefits to people: chiefly among them being instant access to millions of websites. (yes)*
18. *Therefore, you pay additional fees on your gasoline that goes towards highway patrol. (no).*
19. *Recently, there have been cases of internet servers being overloaded, causing great disruptions to many sectors, such as the airline industry! (yes).*
20. *The main obstacle being the cost of private information security. (no).*
21. *Unsurprisingly, most people are not happy with this. (yes).*
22. *This will not be free though. (yes).*
23. *By one estimation, your user data is worth over $800 in revenue a year! (no).*
24. *Therefore, if each person were to triple their internet bill, this should cover the value of their data. (no).*
25. *Let's make the internet work better by making it more stable and accessible for all. (yes).*
26. *Are you tired of being a product? (yes).*

27. *"Every day there are nearly 3000 cases of identity theft on the internet." (No)*
28. *"Currently, many websites will have a pop-up that asks you if you consent to "cookies", this is essentially asking you if you consent to them collecting information on you." (No)*
29. *"There are still a billion people in the world without access to high-speed internet." (No)*
30. *"Some estimates suggest around 5% of people are very worried about their internet privacy." (No)*

Scoring: Participants received a point for each correct response leading to an ***argument recall*** score between (0 = no recall to 15 = perfect recall).

Appendix I - Message Agreement & Engagement: (The same as study two)

Message Agreement: (The same as study two)

"To what extent do you agree that people should have to pay twice what they currently pay for internet service?

	Strongly disagree (1)	(2)	(3)	Neither agree nor disagree (4)	(5)	(6)	Strongly agree (7)
	○	○	○	○	○	○	○

<u>Self-Reported Engagement:</u> (Banks & Brannon, 2023) (The same as study two)

Open Mind:

"Whether you agreed or disagreed with the author's message, to what extent did you try to keep an open mind while reading their message, that said, "people should have to pay twice what they currently pay for internet service?""

	1. No attempt to keep an open mind	2.	3.	4.	5.	6.	7. Complete attempt to keep an open mind
	O	O	O	O	O	O	O

Attention:

"How much attention did you pay to the author's message that said, "people should have to pay twice what they currently pay for internet service?""

	1. No Attention	2.	3.	4.	5.	6.	7. Complete attention
	O	O	O	O	O	O	O

Thought:

"How much thought did you give to the idea the author was proposing, that "people should have to pay twice what they currently pay for internet service?""

	1. No thought	2.	3.	4.	5.	6.	7. Complete thought
	O	O	O	O	O	O	O

Scoring: The scores from the three items were averaged to form the composite (1 = *no engagement* to 7 = *very engaged*) and the Cronbach's alpha score was calculated.

Appendix J - Neutral reading time message to measure participants' reading speed (185 words): (The same as study two)

Note. The following message about the history of the internet came from the website article: *A short history of the internet,* with revisions to shorten the article (National Science and Media Museum, 2020).

"Please read the following article:

A short history of the internet

President Dwight D. Eisenhower formed the Advanced Research Projects Agency (ARPA) in 1958, bringing together some of the best scientific minds in the country. Among ARPA's projects was to test the feasibility of a large-scale computer network. Lawrence Roberts was responsible for developing computer networks at ARPA, working with scientist Leonard Kleinrock. Roberts was the first person to connect two computers. When the first network was developed in 1969, Kleinrock successfully used it to send messages to another site, and the ARPA Network—or ARPANET—was born.

Once ARPANET was up and running, it quickly expanded. By 1973, 30 academic, military and research institutions had joined the network, connecting locations including Hawaii, Norway and the UK. As ARPANET grew, a set of rules for handling data needed to be put in place. In 1974, computer scientists Bob Kahn and Vint Cerf invented a new method called transmission-control protocol, popularly known as TCP/IP, which essentially allowed computers to speak the same language. After the introduction of TCP/IP, ARPANET quickly grew to become a global interconnected network of networks, or 'Internet'."

Appendix K - Demographic Questionnaire (The same as study two)

Age

What is your age? (e.g., 24)

_____

Education

What is the highest level of school you have completed or the highest degree you have received?

Less than high school degree
High school graduate (high school diploma or equivalent including GED)
Some college but no degree
Associate degree in college (2-year)
Bachelor's degree in college (4-year)
Master's degree
Doctoral degree
Professional degree (JD, MD)

Race

Choose one or more races that you consider yourself to be:

White
Black or African American
American Indian or Alaska Native
Asian
Native Hawaiian or Pacific Islander
Hispanic
Other _____

Sex

What is your biological sex?

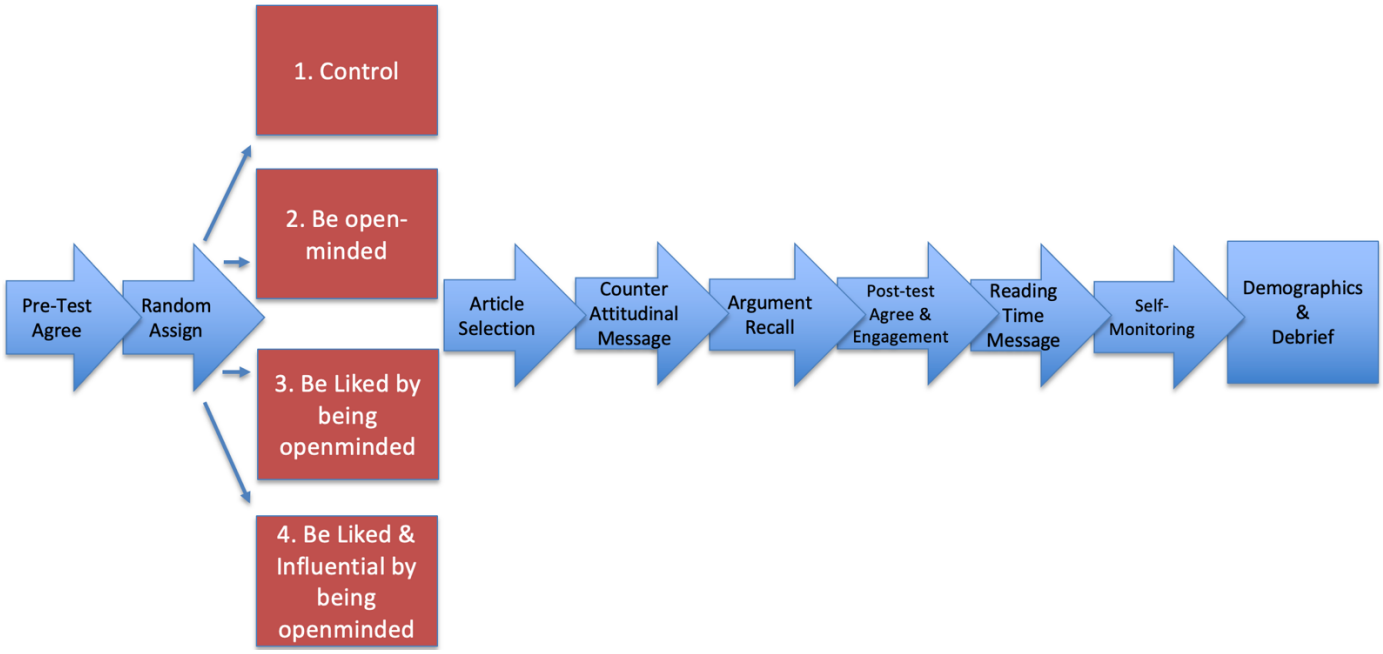
Male
Female
Prefer not to respond

Appendix L - Debriefing Statement (The same as study two)

Thank you for participating in this study. This research is looking at the effects that different persuasive messages have on the degree to which people are willing to look at messages they disagree with, in this case the counterattitudinal message was about increasing your internet bill. The goal of this study is to examine which messages influence the greatest highest level of engagement and message agreement.

If you have any questions about this study, you are welcome to contact the faculty member, Dr. Laura Brannon, at lbrannon@ksu.edu, or the graduate student, Lane Banks, at lanembanks@ksu.edu. If you have any questions about the ethical content of this study, do not hesitate to contact Dr. Lisa Rubin, Chair of Committee Research Involving Human Subjects at 785-532-3224.

Appendix M - Survey Flow for Study 2



Appendix Figure M.1. Survey Flow for Study 2

Appendix N - Study 2 Informed Consent

PROJECT TITLE: Influence of Mindset on Message Processing
LENGTH OF STUDY: 20 minutes
PRINCIPAL INVESTIGATOR: Laura Brannon Ph.D.
CO-INVESTIGATOR: Lane Banks M.S.

CONTACT DETAILS FOR PROBLEMS/QUESTIONS: Laura Brannon, lbrannon@ksu.edu, (785) 532-6850

IRB CHAIR CONTACT INFORMATION: Lisa Rubin, Chair, Committee on Research Involving Human Subjects, 203 Fairchild Hall, Kansas State University, Manhattan, KS 66506, (785) 532-3224; Brad Woods, Associate Vice President for Research Compliance, 203 Fairchild Hall, Kansas State University, Manhattan, KS 66506, (785) 532-3224.

PURPOSE OF THE RESEARCH: Please read below for more information about this study to decide if you would like to proceed. Please, also consider setting aside about 20 minutes if you're taking this study. Distractions and other things requiring your attention should be relatively low. We are looking to see how mindset impacts information processing. We use message processing frames to investigate how they influence perceptions of a message.

PROCEDURES OR METHODS TO BE USED: You will be asked to read a message about various aspects of information exposure and processing. Afterwards, all participants will read a longer message that deals with a non-intimate social issue. As a participant in this study, you will be asked to truthfully answer several questions. You will also answer several questions about the message. There are several additional questionnaires that you will be asked to fill out.

RISKS OR DISCOMFORTS ANTICIPATED: As a participant, little risk/discomfort is expected to be felt while taking this study. Levels of stress or discomfort shouldn't exceed levels beyond what you'd expect in normal, everyday, conversations.

BENEFITS ANTICIPATED: $3.35 upon successful completion of the survey. Be aware that if you do not pass the attention check question(s) you may not receive compensation.

EXTENT OF CONFIDENTIALITY: Participant responses in this study will be completely confidential. Participants will only be identified with randomized numbers assuring confidentiality with each of your responses. Although collected data may be made public or used for future research purposes, your identity will always remain confidential.

Terms of participation: I understand this project is research, and that my participation is voluntary. I also understand that if I decide to participate in this study, I may withdraw my consent at any time, and stop participating at any time without explanation, penalty, or loss of benefits, or academic standing to which I may otherwise be entitled. I verify that by clicking continue that I have read and understand this consent form, and willingly agree to participate in this study under the terms described.

Do you consent?

Yes

No

Appendix O - Pre-test Question (The same as study one)

Pre-test Agreement:

"To what extent do you agree that people should have to pay twice what they currently pay for internet service?"

	Strongly disagree (1)	(2)	(3)	(4)	(5)	(6)	Strongly agree (7)
	○	○	○	○	○	○	○

Appendix P - Study 2 Message Frames

4 Message Frames: 1 Control and 3 Experimental. Participants were randomly assigned into one of the four.

1. Control (Whitt et al., 2023) – 112 words

"Now, we would like for you to read a short passage about human psychology. Please carefully read the passage below.

Psychology of Attitudes

Each of us evaluates our social worlds. We form likes and dislikes of virtually everything and everyone we encounter; these are called 'attitudes'. Simply put, attitudes are evaluations of people and things. Attitudes are important because they often determine what we do and how we act towards other people.

The following are the three major components of an attitude:

Cognitive component. The thoughts and beliefs that people form towards others.

Affective component. The emotional reactions that people have towards others.

Behavioral component. The behaviors that people display towards others."

Type in the main point of the message above (Hint: it is the bolded and underlined title).

_____.

2. Be open-minded (Adapted from Lord et al., 1984) 110 -words

"Now, we would like for you to read a short passage about human psychology. Please carefully read the passage below.

Be open-minded

People tend to naturally be exposed to and prefer information that supports their views. However, this can sometimes lead others to consider you to be closed-minded. Therefore, we would like you to be as open-minded as possible in evaluating the information you read. You might consider yourself to be in the same role as a judge or juror asked to weigh all of the evidence in a fair and impartial manner.

So please resist any temptation you have to be closed-minded and ignore information you initially disagree with."

Type in the main point of the message above (Hint: it is the bolded and underlined title).

_____.

3. Be Liked by being open-minded (107 words)

"Now, we would like for you to read a short passage about human psychology. Please carefully read the passage below.

<u>Be liked by being open-minded</u>

<u>People like those that are open-minded.</u> Looking at messages that you disagree with can be a way of demonstrating to others that you're open-minded. People like those that are open-minded because they tend to be regarded as knowledgeable, well-informed, credible, and thoughtful.

So, whenever you encounter messages that are contrary to your opinion, especially on controversial issues, be sure to pay attention to them, at least a little, so that you can be seen as being open-minded, <u>and be liked by others."</u>

Type in the main point of the message above (Hint: it is the bolded and underlined title).

_____.

4. Be liked and Influential by being open-minded (113-words)

"Now, we would like for you to read a short passage about human psychology. Please carefully read the passage below.

Be liked and Influential by being open-minded

Likable people are influential. Looking at messages that you disagree with can be a way of demonstrating to others that you're open-minded, and therefore likable. In other words, if you are open to what someone else is saying, then they will tend to be open to what you are saying.

So, whenever you encounter messages that are contrary to your opinion, be sure to pay attention to them, so that you can be seen as being open-minded, and likable, which will then help you become influential."

Type in the main point of the message above (Hint: it is the bolded and underlined title).

_____.

Appendix Q - Study 2 Attention Check:

*Each message frame was only be presented with the attention check that is written for their message frame. The correct answer is indicated by (1) next to the choice.

(1. Control): *"What was the main theme of the message you just read?*

- o *The education system is changing how they teach upcoming generations* (0)
- o *Books are a good tool for learning new information* (0)
- o *The digital age brings instant access to information* (0)
- o *There are cognitive, affective, and behavioral components of attitudes* (1)

(2. Be Open-Minded): *"What was the main theme of the message you just read?*

- o *The education system is changing how they teach upcoming generations* (0)
- o *Books are a good tool for learning new information* (0)
- o *The digital age brings instant access to information* (0)
- o *Be open-minded when evaluating information* (1)

(3. Be Liked by being open-minded): *"What was the main theme of the message you just read?*

- o *The education system is changing how they teach upcoming generations* (0)
- o *Books are a good tool for learning new information* (0)
- o *The digital age brings instant access to information* (0)
- o *Being open-minded makes you liked by others* (1)

(4. Be Liked and Influential by being open-minded): *"What was the main theme of the message you just read?*

- o *The education system is changing how they teach upcoming generations* (0)
- o *Books are a good tool for learning new information* (0)
- o *The digital age brings instant access to information* (0)
- o *Being open-minded makes you more influential* (1)

Appendix R - Selective Exposure Article Headlines (The same as study one)

*These article titles were displayed in a random order.

"The following article titles are about a proposal to double internet service bills. For each of the following article titles please indicate how interested you would be to read the full-length article."

1. Counterattitudinal:

"Say YES! Paying Larger Internet Bills Will Actually Help Us Out!"

	1. Not at all interested (1)	*2. (2)*	*3. (3)*	*4. (4)*	*5. (5)*	*6. (6)*	*7. Very Interested (7)*
How interested are you in reading this article?	○	○	○	○	○	○	○

2. Counterattitudinal:

"Several Reasons Why Doubling Your Internet Bill is Beneficial!"

	1. Not at all interested (1)	*2. (2)*	*3. (3)*	*4. (4)*	*5. (5)*	*6. (6)*	*7. Very Interested (7)*
How interested are you in reading this article?	○	○	○	○	○	○	○

3. Counterattitudinal:

"Why One Instagram Influencer Supports Doubling $$$ Spent on Internet Service Bills!"

	1. Not at all interested (1)	*2. (2)*	*3. (3)*	*4. (4)*	*5. (5)*	*6. (6)*	*7. Very Interested (7)*
How interested are you in reading this article?	○	○	○	○	○	○	○

4. Proattitudinal:

"Why charge us more? These Internet Service Fees Are Getting Out of Hand!"

	1. Not at all interested (1)	*2. (2)*	*3. (3)*	*4. (4)*	*5. (5)*	*6. (6)*	*7. Very Interested (7)*
How interested are you in reading this article?	○	○	○	○	○	○	○

5. Proattitudinal:

"At First it Sounded Bad, and it is Still Bad, Say NO! to Doubling Internet Service Charges!"

	1. Not at all interested (1)	*2. (2)*	*3. (3)*	*4. (4)*	*5. (5)*	*6. (6)*	*7. Very Interested (7)*
How interested are you in reading this article?	○	○	○	○	○	○	○

6. Proattitudinal:

"*Social Media Influencers Speak Out Against Internet Bill Increases"*

	1. Not at all interested (1)	*2. (2)*	*3. (3)*	*4. (4)*	*5. (5)*	*6. (6)*	*7. Very Interested (7)*
How interested are you in reading this article?	○	○	○	○	○	○	○

Scoring: Articles 1, 2, and 3 are counterattitudinal. Articles 4, 5, and 6 are proattitudinal. Scores for counterattitudinal article titles were reverse coded. The proattitudinal and counterattitudinal scores were averaged and combined into a composite score. Higher scores mean that the participant was less likely to be willing to view counterattitudinal information.

Appendix S - Counterattitudinal Message (530 words): (The message is the same as study one but the instructions before the message are slightly different)

"On the following page, you will be presented with one of the full-length articles to read. We want to see what people are interested in reading, that is why we asked you to indicate which articles you are interested in reading. However, until we know what everyone says, we will give people a random article to read. In the future, we will take into account what people say."

The next Page: (Different from study one)

"Make sure to pay attention while reading the following message because you may be randomly selected to have a short conversation with the author of the message. If selected, you will be compensated $50."

The next Page: (The same as study one)

"Several Reasons Why Doubling Your Internet Bill is Beneficial!

"The true cost of the internet is not being properly charged to the end consumer. Once this cost is redistributed, the average person will be paying double what they are currently paying for their internet bill. This could mean you pay $600 extra a year.

The internet provides great benefits to people: chiefly among them being instant access to millions of websites. However, this is expensive to maintain and the more time you spend on it causes more strain on the infrastructure (fiber-optic lines; data warehouses, servers, security). Think of it like our highways: the more time you spend driving on the highways, the more wear and tear you do. Therefore, you pay additional fees on your gasoline that goes towards highway maintenance. The more you use it, the more you pay for its upkeep. Well, our virtual highways

are crumbling, and we need your tax-dollars to fill the potholes. Recently, there have been cases of internet servers being overloaded, causing great disruptions to many sectors, such as the airline industry! The internet overall is being run on a shoe-string budget relative to its size and more money needs to be raised to pay for its upkeep.

There are even parts of our country that do not have access to broadband internet! The main obstacle being the cost of infrastructure. Larger internet service bills can be the answer to transport these 7 million Americans from the digital stone age to the modern one.

Additionally, the cost of many websites is largely subsidized by collecting your private information and then selling it to advertisers. Unsurprisingly, most people are not happy with this. A Pew research study found that 79% of U.S. adults are "very" or "somewhat concerned" about how their data is used. Therefore, I argue that privacy should and can be given back to the end user, which is you! This will not be free though. It would require you to pay more for your internet bill so that websites can still operate without needing to resort to selling you out.

So, how much will this cost you? By one estimation, your user data is worth over $600 in revenue a year! What if the internet user were to pay that additional $600 each year to not have their data tracked and sold? The average internet bill in the US is $63/month. Therefore, if each person were to double their internet bill, this should cover the value of their data. This increased revenue could be used so that the internet and companies could function without selling user data. Another benefit of minimizing data collection would be a lessened risk of your information being leaked during data breaches, since there would be no data to leak.

Let's make the internet work better by making it more stable and accessible for all. The more we pay, the greater the internet can become! There is a common phrase: "If you're getting

it for free, then you are the product". Are you tired of being a product? Let's make the internet work for you rather than for advertisers by paying your fair share for it."

Appendix T - Counterattitudinal Message Argument Recall: (The same as study one)

The sentences were presented in a random order. The correct answer is indicated by (yes/no) next to the choice.

Were the following sentences in the text you read? (Yes or No).

You are indicating whether or not the sentences were in the text, not whether you agree with it. Some of these sentences were in the article, and some were not. In other cases, the sentence was in the article but has been changed slightly. In these cases, you should mark "no".

31. *"The true cost of the internet is not being properly charged to the end consumer" (yes).*
32. *The internet provides great benefits to people: chiefly among them being instant access to millions of websites. (yes)*
33. *Therefore, you pay additional fees on your gasoline that goes towards highway patrol. (no).*
34. *Recently, there have been cases of internet servers being overloaded, causing great disruptions to many sectors, such as the airline industry! (yes).*
35. *The main obstacle being the cost of private information security. (no).*
36. *Unsurprisingly, most people are not happy with this. (yes).*
37. *This will not be free though. (yes).*
38. *By one estimation, your user data is worth over $800 in revenue a year! (no).*
39. *Therefore, if each person were to triple their internet bill, this should cover the value of their data. (no).*
40. *Let's make the internet work better by making it more stable and accessible for all. (yes).*
41. *Are you tired of being a product? (yes).*

42. *"Every day there are nearly 3000 cases of identity theft on the internet." (no)*
43. *"Currently, many websites will have a pop-up that asks you if you consent to "cookies", this is essentially asking you if you consent to them collecting information on you." (no)*
44. *"There are still a billion people in the world without access to high-speed internet." (no)*
45. *"Some estimates suggest around 5% of people are very worried about their internet privacy." (no)*

Scoring: Participants received a point for each correct response leading to an ***argument recall*** score between (0 = no recall to 15 = perfect recall).

Appendix U - Message Agreement & Engagement: (The same as study one)

Message Agreement: (The same as study one)

"To what extent do you agree that people should have to pay twice what they currently pay for internet service?

	Strongly disagree (1)	(2)	(3)	Neither agree nor disagree (4)	(5)	(6)	Strongly agree (7)
	○	○	○	○	○	○	○

<u>Self-Reported Engagement:</u> (Banks & Brannon, 2023) (The same as study one)

<u>Open Mind:</u>

"Whether you agreed or disagreed with the author's message, to what extent did you try to keep an open mind while reading their message, that said, "people should have to pay twice what they currently pay for internet service?""

	1. No attempt to keep an open mind	2.	3.	4.	5.	6.	7. Complete attempt to keep an open mind
	○	○	○	○	○	○	○

Attention:

"How much attention did you pay to the author's message that said, "people should have to pay twice what they currently pay for internet service?""

	1. No Attention	2.	3.	4.	5.	6.	7. Complete attention
	○	○	○	○	○	○	○

Thought:

"How much thought did you give to the idea the author was proposing, that "people should have to pay twice what they currently pay for internet service?""

	1. No thought	2.	3.	4.	5.	6.	7. Complete thought
	○	○	○	○	○	○	○

Scoring: The scores from the three items were averaged to form the composite (1 = *no engagement* to 7 = *very engaged*) and the Cronbach's alpha score was calculated.

Appendix V - Neutral reading time message to measure participants' reading speed (185 words): (The same as study one)

Note. The following message about the history of the internet came from the website article: *A short history of the internet,* with revisions to shorten the article (National Science and Media Museum, 2020).

"Please read the following article:

A short history of the internet

President Dwight D. Eisenhower formed the Advanced Research Projects Agency (ARPA) in 1958, bringing together some of the best scientific minds in the country. Among ARPA's projects was to test the feasibility of a large-scale computer network. Lawrence Roberts was responsible for developing computer networks at ARPA, working with scientist Leonard Kleinrock. Roberts was the first person to connect two computers. When the first network was developed in 1969, Kleinrock successfully used it to send messages to another site, and the ARPA Network—or ARPANET—was born.

Once ARPANET was up and running, it quickly expanded. By 1973, 30 academic, military and research institutions had joined the network, connecting locations including Hawaii, Norway and the UK. As ARPANET grew, a set of rules for handling data needed to be put in place. In 1974, computer scientists Bob Kahn and Vint Cerf invented a new method called transmission-control protocol, popularly known as TCP/IP, which essentially allowed computers to speak the same language. After the introduction of TCP/IP, ARPANET quickly grew to become a global interconnected network of networks, or 'Internet'."

Appendix W - Self-Monitoring

18 item scale (Snyder & Gangestad, 1986), analyzed with Likert responses (Briggs et al., 1980; Briggs & Cheek, 1988) (1 = extremely uncharacteristic to 5 = extremely characteristic). (R) = reverse coded.

"Please indicate the degree to which each statement is characteristic of you. There are no right or wrong answers. Please try to answer as honestly as you can."

1. "*I find it hard to imitate the behavior of other people."* (R)

	Extremely uncharacteristic (1)	(2)	(3)	(4)	(5) Extremely characteristic
	○	○	○	○	○

2. *"At parties and social gatherings, I do not attempt to do or say things that others will like."* (R)

	Extremely uncharacteristic (1)	(2)	(3)	(4)	(5) Extremely characteristic
	○	○	○	○	○

3. "*I can only argue for ideas which I already believe."* (R)

	Extremely uncharacteristic (1)	(2)	(3)	(4)	(5) Extremely characteristic
	○	○	○	○	○

4. *"I can make impromptu speeches even on topics about which I have almost no information."*

	Extremely uncharacteristic (1)	(2)	(3)	(4)	(5) Extremely characteristic
	○	○	○	○	○

5. *"I guess I put on a show to impress or entertain others."*

	Extremely uncharacteristic (1)	(2)	(3)	(4)	(5) Extremely characteristic
	○	○	○	○	○

6. *"I would probably make a good actor."*

	Extremely uncharacteristic (1)	(2)	(3)	(4)	(5) Extremely characteristic
	○	○	○	○	○

7. *"In a group of people I am rarely the center of attention."* (R)

	Extremely uncharacteristic (1)	(2)	(3)	(4)	(5) Extremely characteristic
	○	○	○	○	○

8. *"In different situations and with different people, I often act like very different persons."*

	Extremely uncharacteristic (1)	(2)	(3)	(4)	(5) Extremely characteristic
	○	○	○	○	○

9. *"I am not particularly good at making other people like me."* (R)

	Extremely uncharacteristic (1)	(2)	(3)	(4)	(5) Extremely characteristic
	○	○	○	○	○

10. *"I'm not always the person I appear to be."*

	Extremely uncharacteristic (1)	(2)	(3)	(4)	(5) Extremely characteristic
	○	○	○	○	○

11. *"I would not change my opinions (or the way I do things) in order to please someone or win their favor."* (R)

	Extremely uncharacteristic (1)	(2)	(3)	(4)	(5) Extremely characteristic
	○	○	○	○	○

12. *"I have considered being an entertainer."*

	Extremely uncharacteristic (1)	(2)	(3)	(4)	(5) Extremely characteristic
	○	○	○	○	○

13. *"I have never been good at games like charades or improvisational acting."* (R)

	Extremely uncharacteristic (1)	(2)	(3)	(4)	(5) Extremely characteristic
	○	○	○	○	○

14. *"I have trouble changing my behavior to suit different people and different situations."* (R)

	Extremely uncharacteristic (1)	(2)	(3)	(4)	(5) Extremely characteristic
	○	○	○	○	○

15. *"At a party I let others keep the jokes and stories going."* (R)

	Extremely uncharacteristic (1)	(2)	(3)	(4)	(5) Extremely characteristic
	○	○	○	○	○

16. *"I feel a bit awkward in public and do not show up quite as well as I should."* (R)

	Extremely uncharacteristic (1)	(2)	(3)	(4)	(5) Extremely characteristic
	○	○	○	○	○

17. *"I can look anyone in the eye and tell a lie with a straight face (if for a right end)."*

	Extremely uncharacteristic (1)	(2)	(3)	(4)	(5) Extremely characteristic
	○	○	○	○	○

18. *"I may deceive people by being friendly when I really dislike them."*

Extremely uncharacteristic (1)	(2)	(3)	(4)	(5) Extremely characteristic
○	○	○	○	○

Scoring: The average scores were averaged into a composite variable. The cronbach's alpha reliability score was also calculated.

Appendix X - Demographic Questionnaire (The same as study one)

Age

What is your age? (e.g., 24)

_____

Education

What is the highest level of school you have completed or the highest degree you have received?

Less than high school degree
High school graduate (high school diploma or equivalent including GED)
Some college but no degree
Associate degree in college (2-year)
Bachelor's degree in college (4-year)
Master's degree
Doctoral degree
Professional degree (JD, MD)

Race

Choose one or more races that you consider yourself to be:

White
Black or African American
American Indian or Alaska Native
Asian
Native Hawaiian or Pacific Islander
Hispanic
Other _____

Sex

What is your biological sex?

Male
Female
Prefer not to respond

Appendix Y - Debriefing Statement (The same as study one)

Thank you for participating in this study. This research is looking at the effects that different persuasive messages have on the degree to which people are willing to look at messages they disagree with, in this case the counterattitudinal message was about increasing your internet bill. The goal of this study is to examine which messages influence the greatest highest level of engagement and message agreement.

If you have any questions about this study, you are welcome to contact the faculty member, Dr. Laura Brannon, at lbrannon@ksu.edu, or the graduate student, Lane Banks, at lanembanks@ksu.edu. If you have any questions about the ethical content of this study, do not hesitate to contact Dr. Lisa Rubin, Chair of Committee Research Involving Human Subjects at 785-532-3224.

Appendix Z - Conversation with Author of Counterattitudinal Message

In study 2 preceding the counterattitudinal message, participants received the instructions: *"Make sure to pay attention while reading the following message because you may be randomly selected to have a 15-minute conversation with the author of the message. If selected, you will be compensated $50."*

A random number generator was used to select the participant.

The participant was sent a message through the Cloud Research Connect messaging system.

Conversation Message Transcript

Author: You have been randomly selected to receive a $50 bonus if you complete the following

Within the study there was a message saying that you may randomly have the opportunity to have a short conversation with the author of the article on doubling your internet bill. Please respond to this message with some of your thoughts about this article to receive the $50 bonus. Please respond to this message within the next 7 days.

Participant: How do I go about the conversation?

Author: The article in the survey mentioned a proposal for doubling your internet bill. The title of the article was: ***"Several Reasons Why Doubling Your Internet Bill is Beneficial!"***

Just write a couple sentences here about whether or not you agree with this, and why or why not. If you remember anything from the article, then you could mention that here.

After you send me this, I will send you the $50 bonus.

Participant: I don't agree with doubling internet bills. The article claimed it would improve internet quality, expand access, and protect privacy, but there's no real proof that higher prices

would actually lead to these benefits. Instead, it would just make internet even more expensive for people, especially those already struggling to afford it. A better approach would be to hold internet providers accountable and make sure they improve services without forcing customers to pay extra.

Author: These are great points! I agree completely. Thank you for your participation. I will grant you the bonus now.