Encouraging people to be more open-minded about counterattitudinal messages

by

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Abstract

Selective exposure is a problematic behavior that can have detrimental effects within various domains, such as health, learning, and decision-making. In an attempt to address this selective exposure problem, this study focused on addressing three maladaptive tendencies regarding people's reception to counterattitudinal messages: 1) jumping to negative conclusions about the source from the recipient's attitudes of the message, 2) jumping to negative conclusions about the quality of a message from the position it advocates without reviewing the quality of the arguments, and 3) avoiding exposure to arguments supporting the other side of an issue counter to what the recipient believes. Based on theory, three different techniques, all relying on some aspect of personal relevance, were tested and compared to investigate which would influence participants to be more open-minded about counterattitudinal messages. The *personal attack* processing frame asked the participants to not derogate the source. The *idea attack* processing frame asked the participants to not derogate the message. The third persuasive appeal, the *unable to defend position* processing frame, informed participants of the benefits of being familiar with points from the other side of an issue. Participants read a counterattitudinal message about increasing internet service taxes. After reading the message participants rated the source, the message, and their own engagement level. The three messages were compared to an irrelevant-frame control. Analyses indicated that no one message was more effective at persuading people across these dimensions. In fact, the personal attack frame was particularly ineffective. However, the unable to defend position frame influenced participants to pay more attention, put more thought into reading the message, and be more open-minded. This suggests that people are motivated to engage more with a counterattitudinal message when they are reminded of a time in which they were vulnerable due to a lack of knowledge.

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Chapter 1 - Introduction

Overview

This thesis was designed to examine a common problem, the tendency that people have to selectively expose themselves to information that they agree with and avoid information they disagree with (selective exposure). This thesis will first summarize the nature of the selective exposure problem and why it is becoming an increasing problem. Next, literature concerning theories and findings that might be helpful in addressing this selective exposure problem will be discussed. Unfortunately, there is no existing theory that nicely addresses some of the major problems found with selective exposure. Therefore, a few relevant theories and findings will be discussed that will guide the current study. In particular, the benefit of two-sided messages, the message learning approach which identifies several factors that influence the persuasiveness of a message (of which, source and message factors are particularly relevant to the present study), and various phenomena that influence how people respond to counter attitudinal messages and their sources (especially, congruity theory, and various cognitive biases) will be discussed. Penultimately, the potential effectiveness of messages that rely on encouraging participants to relate messages to their personal experience will be discussed and related back to the reviewed literature. Lastly, the current study will be discussed.

Selective Exposure

The current thesis was designed to study a prevalent tendency that people have to only seek out information they already agree with and avoid information they disagree with. This tendency is known as *selective exposure*. This is very easy to do today with the internet, such as only visiting certain websites or unfriending people on social media with differing opinions. Selective exposure can lead to problematic behaviors and outcomes, like avoidance of important

health information (Ropka et al., 2006). People do not like to encounter information they disagree with, yet they do not realize that not being informed on both sides of issues leads them to be vulnerable (McGuire, 1964), this idea will be explored further in the section: *downsides to selective exposure*.

Causes of Selective Exposure

The modern world is information rich; advertisements, political campaigns, and social media posts all vie for attention. People are exposed to vast amounts of information every single day, more than they can possibly attend to. Therefore, it is necessary for people to be somewhat selective about what they are exposed to. When faced with the choice of what to view or ignore, people seek out attitude-consistent information (Sweeny et al., 2010). This tendency is known as *selective exposure,* which is the propensity to view things that are consistent with one's beliefs, attitudes, or behaviors (Festinger, 1964). Although in recent years the tendency to be seek out attitudinally-consistent information has risen (Dylko et al., 2017), people have always been able to be selective in what they view, albeit with some effort. Some argue that the growing ability to customize information channels (i.e., internet, cable, radio) is aiding this selectivity, and that people now will rarely find themselves consuming information discrepant with their attitudes (Bennett et al., 2008). For example, if someone so desires, they could limit their exposure to one political viewpoint and exclude all else by only going to websites that display that content, or listen to particular talk-show stations. In past years, this was not as easily done. To illustrate, a television advertisement in the 1960's had the potential to reach 80% of women through just three channels. In 2006, it was estimated that it would take a hundred channels (Jenkins, 2006). Since 2006, the information landscape has only waxed in complexity; it would now require the use of multiple media to have a similar effect (Bennett et al., 2008).

Festinger (1957, 1964) theorized that selective exposure is the result of avoiding *cognitive dissonance,* an aversive internal state. According to cognitive dissonance theory, people strive to maintain harmony between themselves and an attitude-object. For example, if Jerry likes music by a particular musician, and then goes to their concert, these two elements are in harmony with one another. However, if Jerry dislikes the music, and then finds himself at the concert, there is disharmony. Jerry's attitudes are not consistent with his actions. This inconsistency would result in cognitive dissonance, which discomfort would then motivate Jerry to take action to return to a state of cognitive equilibrium. In this example, Jerry may attain cognitive consistency by removing himself from the concert, or by changing his viewpoint. Perhaps Jerry convinces himself that he likes the music after all. The stronger cognition, or the action which incurs less cost, will typically win out, resulting in the attitude or behavior change of the weaker cognition (Festinger, 1957).

Supporting this tendency, a comprehensive meta-analysis of 91 studies on selective exposure found that when given a choice, people are nearly twice as likely to choose information congenial rather than uncongenial to their attitudes, beliefs, and behaviors (Hart et al., 2009). This effect was particularly pronounced with issues dealing with religion, values, and politics. Of lesser, but still significant influence, were attitudes pertaining to personal development, health, self-related issues, buying behavior, game play, betting, organization, and business administration. Indeed, this is in line with what *cognitive dissonance theory* predicts: the more important the attitude, the more it will drive the tendency to selectively expose to attitudinally consistent information (Festinger, 1964).

There are two ways for people to achieve the same basic goal of cognitive consistency between themselves and what they are exposed to: 1) people may either seek out congruent

information or 2) avoid exposure to incongruent information. Indeed, one experiment found that the desire to seek out attitude-consistent information was stronger than the avoidance of inconsistent information (Dylko et al., 2017). In a clever experiment, Dylko and colleagues (2017) tested people's disposition to selectively expose view information on the internet. The researchers had participants fill out a questionnaire about their beliefs on political issues. Then two weeks later participants were given the opportunity to choose which articles to read in a mock-internet laboratory setting. Participants were more likely to avoid content that contradicted their reported views than they were to seek out attitude-consistent information. This finding is similar to an earlier survey from 2004 conducted via telephone, which found that people were more likely to seek information consistent with their views regarding the U.S. presidential election than they were to avoid contact with other opinions (Garrett, 2009). However, an important distinction between the two studies is that the study by Dylko and colleagues (2017) used a behavioral measure, and the study by Garrett (2009) used a self-report measure. Although these studies differ as to whether avoidance of counter information or seeking out consistent information is stronger, the two studies do agree that people tend to seek out information consistent with their views.

Additionally, a recent eye-tracking experiment found that participants selectively avoid information that is disagreeable with their political views (Schmuck et al., 2020). In their experiment, participants reported their political ideology and viewed a randomized sequence of 12 political ads. The ads were displayed on the participant's screen in pairs. Six pairs of liberal ads displayed next to politically neutral ads, and six pairs of conservative ads next to politically neutral ones. Participants paid more attention to ads that matched their political affiliation and

avoided the ads inconsistent with their reported views, supporting findings from prior research- that people prefer attitude-consistent content.

It is important to note that not only do people customize what they view, but websites and apps often tailor the content that is displayed to match the person's interests. This is known as *filter bubbles* (Pariser, 2011), which is a phenomenon that occurs when websites tailor the information to people based on prior search and viewing history. This limits the person's exposure to alternative viewpoints.

Downsides of Selective Exposure

Now that it has been established that people are avoiding information, why does it matter that they are doing it? This section will talk about various concerns that have been raised about the selective exposure problem. One concerning domain in which people avoid undesirable information is their personal health. Consider the finding in the previously mentioned meta- analysis: that people would rather be validated in their current belief than be correct (Hart et al., 2009). A statistically significant number of people would rather risk believing they are healthy, even though it is not true, than to be exposed to information that shows they are not. Indeed, one study found that when given the chance to learn about their genetic risk of getting breast cancer, most women decide not to take advantage of the opportunity (Ropka et al., 2006). This information could be helpful to avoid disastrous outcomes.

Not only are academics and health professionals growing concerned about the rising tendency and risks of selective exposure, but it is also getting attention in the media. A recent book written in 2018 called *The Coddling of the American Mind* addressed many drawbacks to selective exposure. Authors Lukianoff and Haidt identified three main false beliefs, "Great Untruths," that drive people's exposure: 1) "what doesn't kill you makes you weaker;" 2)

"always trust your feelings;" and 3) "life is a battle between good people and bad people" (Lukianoff & Haidt, 2018). The main idea in their book is that people are being encouraged to think about things in an uncritical way, are overly emotional, and quick to reject people. "Coddling" is becoming a matter of great concern.

Several problematic behaviors on college campuses are occurring as a result of these beliefs, such as speakers being disinvited from speaking engagements; students avoid exposure to information by seeking out "safe spaces" where they will not be exposed to anything they might find threatening, as well as the increased use of "trigger warnings." Clearly, this is a disturbing trend, as colleges are a place of learning where diversity of viewpoints and opinions is encouraged. The fact that this has begun to swing in a direction of avoiding information is alarming. Although the above examples are about college campuses, this is not just an academic concern. It has implications about people engaging in civil discourse in any setting, and not creating constructive arguments. In general, people are losing the ability to have calm arguments and disagreements with others (Lukianoff & Haidt, 2018).

There are additional risky outcomes of avoiding dissenting information, such as groups becoming more polarized when only like-minded information is shared, a phenomenon frequently referred to as *ideological echo-chambers (*Del Vicario et al., 2017). When these ideas are echoed, and not challenged, it can lead to *groupthink* (Janis, 1972). Groupthink occurs when decisions are made without critical evaluation or proper consideration of alternative viewpoints. Some rather grievous acts in history have been the result of this phenomenon. The Space Shuttle Challenger Disaster from 1986, in which a rocket malfunctioned, killing all aboard, is a sad example of what can happen when information is avoided (Janis, 1991). Those who worked closest on the rocket became aware of a potential issue and communicated this to their superiors.

However, those who made the decisions to launch were under a lot of pressure to launch, due to repeated delays. Therefore, the information was never considered by the key decision-makers. Although groupthink is typically driven by a strong leader, the same problem is apparent; the avoidance of counterattitudinal information.

There is growing concern that social media use is a major factor in the tendency to participate in echo-chambers and hold polarized positions (Del Vicario et al., 2017). In 2016, Del Vicario and colleagues (2017) analyzed the posts of more than one million Facebook users in the UK regarding Brexit (British referendum to leave the European Union campaign), a fiercely controversial topic at the time. The researchers found that users tended to avoid information they disagreed with by interacting mainly with posts from like-minded individuals. Vicario and associates concluded by saying, that the greater the emotional distance that separates the groups, the greater the resulting polarization. In relation to political attitudes, it is undesirable for attitudes to be polarized in a well-functioning democracy (Stroud, 2010). Some argue that it is best to have frequent exposure to challenging information, which increases tolerance, and leads to better policy outcomes (Mutz, 2006).

Additionally, it is important to note that this selective exposure issue is not constrained to things people disagree with, but also to things they do agree with. People are limiting their exposure to information that supports their attitudes, actions, and beliefs. This can be problematic as attitudes that are formed without underlying reasons are especially vulnerable to attack (McGuire, 1961). These attitudes are not necessarily wrong; the person just has not thought about the issue before. For example, Mary goes to church during her childhood and adolescence. She believes in her religion; however, she has not really thought much about why she believes in it. She then goes off to college, and her beliefs are challenged. Consequently, she

realizes that she does not have accessible reasons for supporting her religion and is more likely to abandon it. She has not thought thoroughly about her religion. Therefore, it is good practice for people to view new information and to think about what they believe and why they believe it. There are more downsides to selective exposure than can be addressed within the scope of this paper. The purpose of the proposed study is to help people become aware of the limitations of selective exposure, and to decrease their selective exposure tendencies.

Ignoring the Other Side of a Message Leads to Less Informed Attitudes than Two-sided Messages

People that avoid information from the other side of an issue are not only limiting their knowledge, but also harming their ability to defend their views from attack. Additionally, people that seek to influence others may be more influential if they present arguments from both sides of an issue. Of particular interest in the present study are messages that contain arguments from both sides of the issue, known as two-sided messages (Hovland et al., 1949). One-sided messages are messages which only have arguments supporting the position of the source (Petty & Cacioppo, 1996). Two-sided messages have arguments from both sides, both for and against the position of the source (communicator). Typically, the source will present strong arguments in support of their position, and then counterarguments which are then refuted. The two-sided message can be more effective in certain circumstances, because if the recipient is prone to disagree with the appeal, it makes the source seem more trustworthy when they display awareness through presenting arguments from the other side of the issue. If the presenter does not mention any downsides, then people may assume there are downsides that are intentionally omitted (Priester et al., 2007). For example, if a politician were to propose a tax hike that would benefit schools, yet not acknowledge any of the downsides to the taxpayers, they might come

across as being insensitive, or manipulative. Consequently, the politician would have less persuasive power amongst those who were initially against the tax hike. To more effectively persuade the people that are against the tax hike, the politician's appeal should present a few downsides, then argue why those downsides are irrelevant or inconsequential compared to the benefits of the tax hike.

Additionally, people tend to counter-argue in their minds when they hear counterattitudinal information (Petty & Cacioppo, 1986). However, when two-sided messages are presented, people do not need to formulate their own arguments against the advocated position because they are provided with some arguments. If these counterarguments are refuted, the message will be more persuasive.

Hovland and his associates (1949) tested the effectiveness of one-sided vs two-sided arguments in an experiment where they showed troops a message that only presented facts and figures that supported their argument- this was the one-sided message. The other appeal had the same arguments, but also included arguments from the other side- the two-sided message (i.e., reasons why the war might not continue, and accompanying refutations for those reasons). Hovland and colleagues found that it did not matter much whether it was one-sided or two-sided if the recipient was predisposed to agree with the message. However, when people were knowledgeable about the topic and/or opposed to the advocated message, it was more effective to present information from both sides (i.e., two-sided message).

Moreover, a recent study on vaccine-misinformation found that two-sided messages were effective at persuading people to be more pro-vaccination (Featherstone & Zhang, 2020). Two-sided messages have been used in a variety of contexts, to name a few: recycling (Werner et al., 2002), advertising (Rucker et al., 2008), and health (Cornelis et al., 2013).

Another time that presenting counter arguments can be beneficial is when the presenter knows that the recipient will soon hear evidence from the other side of the issue. This has been referred to as "stealing thunder," in which the source presents the arguments from the other side before the other side gets the chance (Dolnik et al., 2003). This has been used in the courtroom, when either the defendant or plaintiff is aware of some evidence from the other side that will be presented. To mitigate the impact this information would have, the source may present some of the evidence and then argue why it is inconsequential. Additionally, this may benefit the source in another way as presenting arguments from the other side may help increase their perceived trustworthiness, especially amongst those who disagree with their position (Crowley & Hoyer, 1994).

Although, in some contexts it does not matter which type of message is more effective at inducing initial attitude change, it may still be better to use a two-sided message for long-term attitude change. This is due to the learning that people undergo when they are exposed to information from the other side of an issue. As discussed, accessible reasons for belief may help attitudes to endure when challenged. Hearken back to the earlier hypothetical situation presented in this document of Mary, who did not have accessible reasons for believing in her religion. Mary was vulnerable when her religious beliefs were challenged. However, if Mary happened to have accessible reasons for believing in her religion, and also knew what people might say in an effort to persuade her to not believe in it, then she would have been less persuadable. Specifically, McGuire (1964), in what he called *inoculation theory,* likened exposure to counterattitudinal information to that of a vaccination for 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. 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. Those who are never exposed to the other side of the issue are more susceptible than those who have been exposed to the other side. 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 attack.

There are two main components of inoculation theory: 1) a forewarning about a possible counterattitudinal attack, and 2) a refutation of that attack. The warning helps people become aware of the threat (Compton & Ivanov, 2013). Perception of threats has been shown to increase people's resistance to attacks. When people are exposed to this threat, it is the goal to get them to engage in counterarguing (Banas & Richards, 2017). This will help people generate defenses to any attacks that may come later. One important factor in the effectiveness of using inoculations is how the source of the message is perceived by the recipient. Typically, the more credible the source is perceived as being, the more effective the inoculation (Compton, 2020). Inoculation theory has been applied in many domains, such as health, politics (Compton & Ivanov, 2013, climate change (van der Linden et al., 2017), vaccine misinformation (Wong & Harrison, 2014), and contested scientific issues (Wood, 2007). It has shown to be an effective persuasive tool for instilling lasting attitude change. The fact that two-sided messages help people defend their position indicates one problem with only being exposed to congenial information.

Message Learning Approach

The earlier mentioned research regarding two-sided messages was actually a subset of some research that will be reviewed now. The message learning approach focuses on different factors that influence whether people are influenced by a message, below these factors will be reviewed, all of them are relevant, however message and source factors are especially important

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in the present study. Hovland and associates (1953) proposed a process of attitude change that people go through when being exposed to new information known as the *message learning approach* (see Figure 1). There are four factors which relate to selective exposure: source (characteristics of the person presenting the message), the message (what the source is saying), recipient (characteristics of the person receiving the message), and the channel (where the message is being presented. i.e., internet, radio, television, etc…). Depending upon how the recipient attends, comprehends, retains, and yields to the message will lead to attitude, belief, or behavior change.

Selective exposure is the attention portion of the message learning approach. When people are processing a message, they are particularly influenced by the source and the message itself. Therefore, source factors are of particular interest in this study (Hovland et al., 1953).
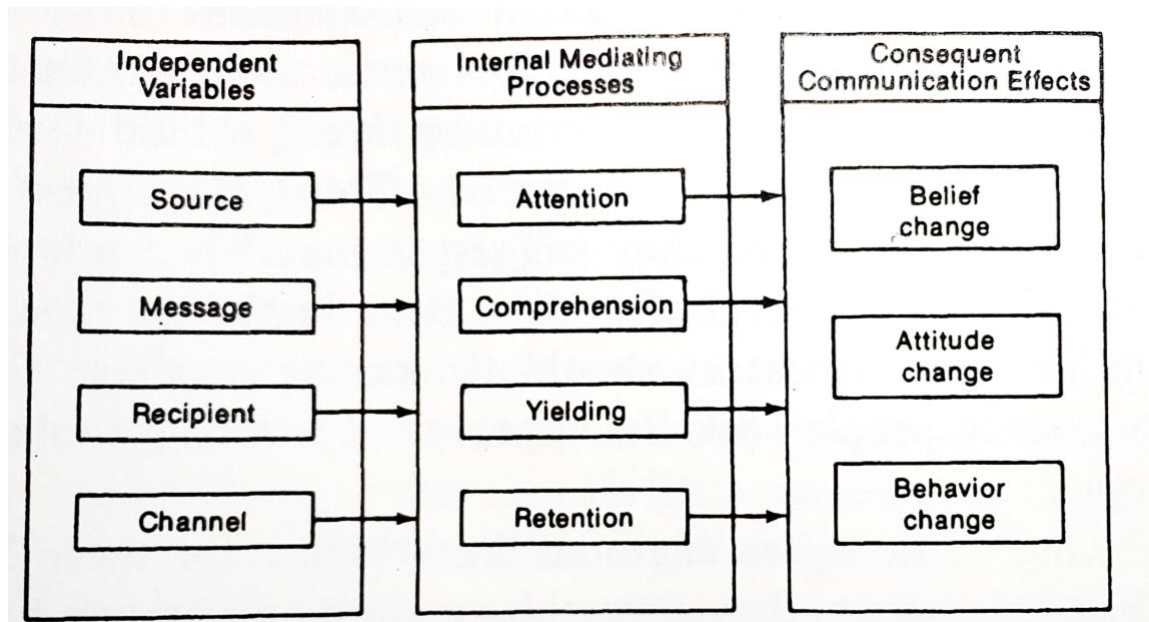
Figure 1. Message Learning Approach (Hovland et al., 1953)

Message Factors

Message factors, such as the number of arguments, the order of arguments, type of appeal, message comprehensibility (how easy or difficult it is to understand), rewards within the message, fear arousal, explicitness of appeal, and one-sided versus two-sided messages can all influence the effect that an appeal has on the recipient (Hovland et al., 1953). Of particular importance to the present study is the message factor of one-sided versus two-sided messages. As discussed earlier, two-sided messages tend to be more effective amongst those who are opposed to the position of the source or have more knowledge about the issue (Hovland et al., 1949).

Message strength and argument quality are also important factors people use when evaluating the merit of an appeal (Petty et al., 1976). A related idea is the length of the message, with longer messages tending to be more persuasive, assuming that they are compelling (See et al., 2009). It is important to note that message length alone may incorrectly signal that the message is strong, when in reality the argument could be weak. Hovland and colleagues (1953) make the case that effective messages incentivize people to learn and agree with the position of the source. Therefore, message factors are an important element to consider in this process.

Recipient Factors

Effective messages take recipients' individual differences into account, such as the recipient's persuasibility, initial position, intelligence, self-esteem, personality, need for cognition, affect, sex, and age. People with higher intelligence are less persuasible than those with lower intelligence (McGuire, 1968). This is because, although, people with higher intelligence are better able to understand a complicated message, they are also better able to argue against it (McGuire, 1968). The influence that familiarity with the issue and its arguments

have, is similar to that of overall intelligence. People are better able to counterargue when they have a lot of knowledge about the domain. One study found that apparent sex differences were nullified when knowledge about the domain of the persuasive appeal was factored in (Sistrunk & McDavid, 1971). In their study, men were more persuaded by messages about items that were rated as more feminine, presumably because they had less expertise with the subject matter. Likewise, women were more persuaded by items rated as more masculine. Effective appeals consider recipient factors, and make adjustments to their message, source, or channel when feasible. As will be discussed below, the internet is making it easier for appeals to be tailored to individuals (Pariser, 2011; Dylko et al., 2017).

Channel Factors

Channel refers to how the message is transmitted and received. It could be written, said, or shown. Some media used for persuasive appeals are television, radio, print, the internet, and face-to-face, among others. The rising use of the internet as a channel has made it very easy to only select attitude-consistent information. With TV or the radio, it is easy to change the channel, but you cannot change it to the exact thing you want to hear. However, you can do that with the internet. For example, if you are listening to the radio and a message comes on the air from a politician you dislike, you could turn it off. But on the internet, you could just go straight to the content from the politician you favor, completely bypassing any risk of being exposed to information that portrays the disliked politician in a positive light. This is part of the reason that selective exposure has become an increasingly complex problem; it is remarkably easy to selectively choose which content to be exposed to. This ease is a large part of what drives selective exposure. As mentioned earlier, many academics believe that the internet is a

contributing factor driving the rising trend of people closing themselves off from counterattitudinal content (Lukianoff & Haidt, 2019).

Some channels cause messages to be received passively, such as television and radio. However, people are more persuaded by active than passive reception (Huang et al., 2013). Therefore, there has been a push to advertise through channels that are more interactive, such as social media and games rather than television or billboards. Eberle and associates (2013) found that interactive content leads to more credibility, more association with the source, and leads to increased sharing via word-of-mouth. Researchers have also compared written versus visual media and found that written messages are more persuasive when the message is difficult to comprehend, and visual is more persuasive when the message is easy to comprehend (Chaiken & Eagly, 1976). Accordingly, it is best to tailor the channel with the content and difficulty of the message.

Additionally, there is a difference between personal and media influence. People are more likely to believe a story on social media when it is shared by a friend, even if the story is in a disreputable news source (Sterrett et al., 2019). This demonstrated the effect that relationships have on information that is attended to and helps why fake information and misinformation is shared. One can imagine the chain of people sharing information- one person shares a news story, their friend sees it and then shares it, their friend sees that they shared it, and so on and so forth.

Conversely, although some channels are more effective for their persuasive power, there are reasons to use other channels. For example, mass media can reach far more people than face-to-face. That is why so much money is being spent on mass media appeals even though they are

far less effective at the individual level than face-to-face persuasive appeals (Shroeder et al., 2018).

Source Factors

Hovland and his colleagues (1949) identified several characteristics (factors) of the source, including communicator credibility, trustworthiness, expertise, and attractiveness which influence how people process a message. People do not just take the content of the message at face value, rather they process it through their views of the source. When the identity of the source is not clear, people may make assumptions about the source based on other factors, such as the channel or attributes of the message. This point will be further elaborated in the following section on congruity theory. Recipients of the message typically choose whether to attend, or be exposed, to the message simply by their evaluations of the source (Hovland et al., 1953). The source may be a person, a group, business, organization, etc. Factors such as perceived trustworthiness, expertise, likability/attractiveness, status, and credibility impact selective exposure to the message.

Experimental studies that investigate the impact of source factors will typically give all conditions the same message but attribute it to different sources. Differences in evaluations of the message can then be attributed to the source. In one study, Republicans were told that Trump supported universal health care, and another condition was told that Obama supported it (Edwards-Levy, 2015). Republicans were more likely to endorse universal health care when told it was Trump's idea, and democrats were more likely to endorse it when told it was Obama's idea. This demonstrates the effect of source on message reception, such that the exact same message can be supported or rejected solely by the recipient's perception of the source.

There are certain factors that impact perceptions of the source, such as communicator credibility, expertise, trustworthiness, and attractiveness. Each of these will be discussed below.

Communicator Credibility. Perceived credibility is an essential variable that influences the decision to attend or yield to the message. Expertise and trustworthiness are components often taken into consideration when evaluating the credibility of a source (Hovland, et al., 1953). Essentially, the recipient will only find the message believable if they view the source as credible (Briñol et al., 2004; Tormala et al., 2006). Due to the increasing use of anonymous electronic communication (i.e., blogs, social media, forums), researchers looked at the effect that anonymity has on perceptions of the source (Rains, 2007). Rains found that source anonymity reduced perceived credibility and influence. One reason that people may view the source as less credible is that by not disclosing their identity, the source may be perceived to not be willing to stand behind their arguments (Dennis, 1996). Researchers have also found that arguing against ones owns interests can increase credibility (Cialdini, 2021).

Trustworthiness. Not surprisingly, people are only influenced by a source they think is trustworthy (Cialdini, 2021). People place greater trust in websites that have political views congruent with their own, and distrust ones that have different views (Gallup, 2018). As mentioned earlier, recent research found that people tend to trust and engage with articles shared by people they trust on social media (Sterrett et al., 2019). In their experiment, the researchers manipulated a trustworthy news source (associated press) versus an untrustworthy source (fictional source created by the researchers), and who it was shared by. People trusted and engaged with the article more when it was shared by someone they trusted versus someone they did not. This mattered far more than the reported source of the article. Additionally, people place

greater trust in the source if they believe the source is not trying to persuade them (Rabinovich et al., 2012).

  Expertise. If the source appears to be an expert, people tend to trust them more and view them as more credible (Pornpitakpan, 2004; Rossiter & Smidts, 2012). People tend to believe that someone is an expert if they simply endorse beliefs that the recipient has (Kahan et al., 2011). On social media, source expertise tends to be a more influential factor for people who view themselves as outsiders of the group or topic of issue than insiders (Sohn & Choi, 2019). Therefore, the way people perceive their relationship to these groups impacts how people assess and share information.

  Attractiveness & Likability. Another factor that people take into account is how attractive they find the communicator. People that are not motivated or not able to think about the message tend to be more influenced by the attractiveness of the source (Petty & Cacioppo, 1986). Attractiveness could be physical attractiveness, speaking style, likability, or similarity (Hovland et al., 1953). It has been observed that people are more likely to endorse and trust messages presented by physically attractive sources (Chaiken, 1979; Reinhard et al., 2006). When the recipient perceives the source as being more similar to themselves, they tend to rate the source as more likable, resulting in a more effective appeal (Thompson & Malaviya, 2013). Additionally, those who ask questions, particularly follow-up questions, are more liked (Huang et al., 2017). Although source factors are influential, attitude changes induced by these peripheral cues tend to be shorter lived and weaker than those who are persuaded by logical arguments (Petty & Cacioppo, 1986).

Phenomena that Influence how People Respond to Counterattitudinal Messages and their Sources: Congruity Theory and Various Cognitive Biases.

One theory which predicts that people will derogate the source of a counterattitudinal message is *congruity theory* (Osgood & Tannenbaum, 1955). People seek to maintain a state of equilibrium between their environment and their internal states. As discussed in the section on selective exposure, people find inconsistencies to be uncomfortable (Festinger, 1957). Therefore, when people encounter information they disagree with, they will either challenge the source, the message itself, or both. Osgood and Tannenbaum (1955) proposed *congruity theory* as a way of explaining what occurs when people encounter information. Their model considers how the source and message are perceived, and the subsequent influence these perceptions exert on the attitude change of the recipient. When people are evaluating a message, they take source factors into account (see Source Factors section). People like to agree with their friends and disagree with people they dislike. For example, if Mike learns that he loves the same movie as a person he dislikes, Jane, it will probably make him feel uncomfortable. Congruity theory would then predict that he would then change his views to like this movie a little less, and like Jane a little more.

Congruity theory goes both ways. If the recipient reads a message they like, they then will like the source more than they did initially. If a likable source says something, the recipient will be favorably disposed to like it more than they would have otherwise. This also happens if there is not an identifiable source, as people will project their attitudes toward the message onto the source. Congruity theory would predict that if Mike reads the message and likes it, he would make favorable assumptions about the source. Conversely, if he disagrees with the message, then

he would consequently dislike the source more. Congruity theory would say "if I don't like your message, I don't like you."

The main takeaway is when people encounter information they disagree with, they tend to challenge the source or the message. However, if it is a message they like, they will not challenge the source or the message. This is consistent with the finding from a study mentioned in the trustworthiness section which found that people tend to trust news articles shared by their friends even if the article came from a fake news network (Sterrett et al., 2019). Congruity theory is central to the proposed study because the recipient's interpretation of the source and the message are not necessarily independent. If the recipient is given a message they disagree with, they may make all sorts of assumptions about the source (Osgood & Tannenbaum, 1955).

Biases Related to Jumping to Conclusions: Confirmation and Belief Biases

As discussed earlier, people tend to endorse arguments, views, or communicators that support their own side. There are a variety of biases that predispose people to jump to conclusions about message and message sources who disagree with them. People tend to interpret and view information through a lens that supports their attitudes; this has commonly been referred to as *confirmation bias* (Nickerson, 1998). However, it is often the case that the prior beliefs the recipients endorse are more important to the recipient than the quality of the arguments when evaluating the merits of a conclusion. This way of reasoning is known as the *belief bias*, which is the tendency people have to judge the strength of arguments by how plausible they think the conclusions are (Sternberg & Leighton, 2004). This has been thought to be one of the contributing factors leading to the spreading of "fake news" (Sarkis, 2019). For example, an article which states that alcohol is good for your health may have terrible supporting arguments that are built on faulty logic. However, if someone already believed that alcohol is

good for health, they then would likely agree with the message, even though the supporting arguments are weak. It tends to be uncommon for people to scrutinize arguments supporting views they agree with (Calvillo et al., 2020). On the flip side, if this person were to encounter a news article arguing that alcohol is bad for health, they would likely become critical of the supporting arguments, perhaps questioning their validity or relevance. In short, the belief bias says that people tend to be accepting of arguments that support conclusions they agree with, yet overly critical of arguments that support conclusions they disagree with (Sternberg & Leighton, 2004). This is consistent with *belief perseverance*, which is the tendency that people tend to hold on to their beliefs, even when presented with evidence to the contrary (Lord et al., 1984).

As mentioned, people make assumptions about the quality of arguments after being exposed to them. However, sometimes people make assumptions before being exposed to the entire appeal. After hearing just the first few words, a person may assume that they know what is coming next. Perhaps deciding to stop listening, reading, or viewing the source after something has been communicated which the recipient disagrees with. The recipient has judged whatever follows as not worth being exposed to. One mechanism that can explain why these premature conclusions are drawn is *cognitive distortions* (Burns, 1989). Cognitive distortions are thinking errors in which people interpret events different than reality. Of particular relevance to this study is the cognitive distortion: *jumping to conclusions* (Burns, 1989). Jumping to conclusions happens when one makes inferences about will come next. For example, John, a conservative who does not believe in climate change, hears a liberal politician start talking about global warming, John assumes he knows all the points that will follow. One study found that people who gather less information tend to be not only overconfident when making judgements, but also make more errors in their conclusions (Warman et al., 2007). However, when participants were

made aware of their errors, they sought out more information on subsequent tasks before making judgments, and their accuracy scores improved. Naturally, the more information that participants gathered, the more accurate their judgements were. Therefore, one of the aims of the proposed study is to have participants consider the errors other people have made about them when jumping to conclusions. This consideration should influence participants to gather more information when they are exposed to counterattitudinal arguments, or arguments they are predisposed to disagree with.

Overview of the Present Study

This study focused on addressing three maladaptive tendencies related to selective exposure that follow from what was just reviewed: 1) jumping to conclusions about the source from the recipient's attitudes of the message, 2) jumping to conclusions about the quality of a message from the position it advocates without reviewing the arguments, and 3) avoiding exposure to the other side of an issue. As discussed, these behaviors are problematic. Therefore, this study utilized persuasive appeals to investigate how to best target these maladaptive behaviors.

Three persuasive message processing frames were created for this experiment. The first processing frame: the *personal attack* processing frame asked the participants to not derogate the source. This relates back to the idea of congruity theory, which would say: "If I don't like the message, I won't like the source." Therefore, this appeal attempted to get participants to be more open-minded about the source and evaluate the source's message more fairly. The second appeal: the *idea attack* processing frame asked the participants to be more open-minded about the ideas of the message. This relates back to the idea of not jumping to conclusions. The third persuasive appeal: the *unable to defend position* processing frame deals

with inoculation theory and the vulnerability of one-sided messages. In this frame participants were made aware of the shortcomings of avoiding information and that it is better to view information from counterattitudinal sources than avoid it. Participants in each condition then read a counterattitudinal message, reported their attitudes towards the message, the source, and their own engagement level.

Taking a new Approach to Selective Exposure: Personal Relevance

To get participants motivated to process the message, the message processing frames were constructed in a way that was personally relevant to the participant. Studies have shown that information that is personally relevant to the recipient tends to be attended to and processed more (Petty & Cacioppo, 1979). It was the hope of this experiment that by making the message personally relevant (i.e., asking participants to recall an experience they had) it would help them attend more to the message, thereby generating more thoughts. The *cognitive response approach* demonstrates that people tend to be find their own thoughts more compelling than the message they encounter (Petty et al., 1981).

Therefore, each of the persuasive appeals had three parts which utilize concepts that were just reviewed: 1) the first part asked participants to recall a suboptimal experience by writing a few words related to what occurred, 2) then a few words about how they felt, and 3) a short takeaway message meant to emphasize the main point and how the participant can best respond in similar situations. For example, the idea attack processing frame asked participants to recall a time when their ideas were attacked and prematurely cut off. The takeaway message then asked participants to not cut off others when they are speaking. By relating their personal experience to the behavior, participants should remember it better and be more influenced by it. Indeed, researchers have found that attitudes related to past experiences are predictive of future

behavior, termed *direct behavior experience* (Fazio & Zanna, 1981). Therefore, these message

processing frames were constructed in a manner that aimed to bring participant's past

experiences to the forefront of their minds, in the hopes that their attitudes about these past

experiences would then influence their future behavior.

Additionally, it was thought that when participants would be asked to think about

the negative experiences they had gone through, and then given a takeaway message, that they

would then link this takeaway message to their experiences. Therefore, the appeals sought to

make the drawbacks of these behaviors more salient to the participant in the hopes that when

participants later found themselves in a situation where they would be prone to dislike the

message, that they would evaluate the message better than they would have otherwise. This was

done by asking the participant to reflect on their experiences by writing a few words.

For example, during this reflection a participant could experience regret and

sadness that they were cut off from saying something that would have helped the other person.

Consequently, the other person did not receive the benefit of hearing the participant's message.

Therefore, in the current study, when the participant later encountered a message that they

disliked, it was hoped that they would remember that it may be beneficial for them to read it.

Similarly, by making participants aware of a time in which they were vulnerable due to limited

knowledge, it was thought that it would motivate them to acquire more knowledge when given

the chance. It was thought likely that this last processing frame would be the most persuasive

position of all the processing frames, due to the benefits the participant was posed to receive.

Namely, the benefit of knowledge, that the participant would then be more prepared to defend

their position from attack.

In short, the goal of this study was to get people to be more open-minded. Based on the reviewed literature, people can jump to conclusions about the source or the message. These appeals investigated if merely asking people to not derogate the source or the message would have an effect, or if explaining the cost of avoiding information on their ability to defend themselves from attack would persuade the participants to be exposed to counterattitudinal messages and sources. People can also jump to conclusions about the quality of a message, and we wanted to see if merely asking people not to do that (not to derogate the message without paying attention to it) would have an effect.

Research Goals

1. Figure out how to influence people to not derogate the source without reason, just because the source says something the recipient disagrees with.

2. Investigate different message frames, or ways of framing a message, to discover which is most influential at getting people to fairly evaluate the argument, or not be dismissive.

Research Questions

Will any or all of the idea attack, personal attack, or unable to defend position treatment conditions be more effective than the irrelevant-frame control and/or no-frame control at persuading people to agree with the position of a counterattitudinal message? Will one of the three be more effective than the others?

Hypotheses

H1. Participants in either the "personal attack message", "idea attack message", or "unable to defend position message" conditions will agree more with the message position than participants in the "irrelevant-frame control" and "no-message control" conditions.

H2. Participants in the "personal attack message" condition will be less likely to derogate the source than participants in the "irrelevant-frame control" and/or "no-frame control" conditions.

H3. Participants in the "idea attack message" condition will be less likely to derogate the strength of the message than participants in the "irrelevant-frame control" and/or "no-frame control" conditions.

H4. Participants in the "unable to defend message" condition will be more engaged when reading the message than participants in the "irrelevant-frame control" and/or "no-frame control" conditions.

Chapter 2 - Method

Participants

324 participants were recruited through Cloud Research. Participants were compensated $0.50 to complete the survey. There were no selection criteria, other than fluent in English. The average age was 45, ($SD = 15$), 63% female, and 78% white.

Design

This was a pre-post, mixed methods experimental design. The manipulated variable was the message processing frame. There were five levels: the idea attack, personal attack, unable to defend position, irrelevant-frame control, and no-frame control. The dependent variables were the level of agreement with the advocated message, ratings of message source, perception of message strength, and participant's self-rated engagement.

Materials

To obtain the sample, the researcher used Cloud Research. The survey was constructed within Qualtrics. To take the survey, participants used their own technological devices over the internet.

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

Message Frames:

Idea Attack. The message reads:

"This survey deals with how people process information based on their mindset.

Think of a time in which you said something that someone disagreed with, and

they just dismissed your idea without letting you explain it or hearing you out.

Type a couple words that would remind you of the incident (e.g., who was it with,

or when it happened, or where it happened). (Open response).

How did that make you feel, or if that has not happened to you, how do you think

it would make you feel?" (Open response).

Participants continued to the next page and received the following message: *"It is best to let*

people fully express themselves before cutting them off or making judgements about their

reasons for believing something."

Personal Attack. The message reads:

"This survey deals with how people process information based on their mindset. Think of

a time in which you said something that someone disagreed with, and they got upset with

you or they took it personally even though that was not your intention. This person did

not give you a chance to explain yourself.

Type a couple words that would remind you of the incident (e.g., who was it with,

or when it happened, or where it happened). (Open response).

How did that make you feel, or if that has not happened to you, how do you think

it would make you feel?" (Open response).

Participants continued to the next page and received the following message: *"It is best to*

let people fully express themselves before cutting them off or making judgements about

them."

Unable to Defend Position. The message reads:

"This survey deals with how people process information based on their mindset. Think of

a time in which you were unable to defend your position on an issue because you were

unaware of, or never really thought about, the points from the other side.

Type a couple words that would remind you of the incident (e.g., who was it with,

or when it happened, or where it happened). (Open response).

How did that make you feel, or if that has not happened to you, how do you think

it would make you feel?" (Open response).

Participants continued to the next page and received the following message: *"It is good to be familiar with and think about the points from the other side of an issue in order to be able to defend your own position."*

Irrelevant-Frame Control. The message reads:

"This survey deals with how people process information based on their mindset. Think

about a movie or tv show that you were excited to watch, but when you did watch it, it

didn't meet your expectations.

Type a couple words that would remind you of the movie (e.g., who you saw it with, or

when you watched it, or the title of the movie). (Open Response)

How did you feel while watching the movie?" (Open response)

Participants continued to the next page and received the following message: *"It is good to reflect on movies and tv shows that haven't met your expectations every once in a while."*

Counterattitudinal Message

The message is about why people should have to pay more internet service taxes. People tend to not like the idea of paying more taxes. A pretest found that participants ($N = 32$) tended to strongly disagree ($M = 1.41$) with paying increased internet taxes (1 = strongly disagree to 7 = strongly agree). The main point was bolded, capitalized, and underlined so that participants would walk away knowing the main position of the argument.

"I BELIEVE THAT PEOPLE SHOULD HAVE TO PAY TWICE WHAT THEY CURRENTLY PAY FOR INTERNET SERVICE TAXES.

There are many exciting new possibilities being made possible through the internet. However, these possibilities are limited by the amount of taxes that are collected. By doubling the amount of taxes we pay, the funds for servicing and developing the internet will be greatly increased. These funds can be used to build more servers and run more fiber-optic lines, both of which increase internet speeds and decrease outages. The more stable and reliable the internet is, the more it will be made possible for people to work from home or attend school online anywhere in the continental United States.

One of the most exciting possibilities coming from faster, reliable internet is remote processing. It is now possible to play state of the art games or edit videos by utilizing processing centers via the internet. The processing is done so fast, that it is like it is done on the device. This means that all people will need, is a screen with an internet connection. With increased funding and development, gone will be the days of buying the newest and most powerful device. There would be no need to buy expensive computers, phones, and gaming systems. The processing can be done remotely. Therefore, increasing internet taxes will not only increase the speed and reliability of the internet in more locations, but also has the potential to save you money!

Additionally, people who don't use the internet very much, tend to have cheaper and more limited data plans. Therefore, the amount they pay would not be influenced much. This tax increase would be just for the big users. That is only fair, because those who use it the most, should pay the most."

Post-Intervention Surveys

  Post-Test Agreement. "To what extent do you agree with the author that said, 'people should have to pay twice what they currently pay for internet service taxes?" (1 = strongly disagree to 7 = strongly agree).

  Source Factors Composite. In order to examine the effect of message frames on ratings of the source a scale was created for the participants to evaluate the source along the following dimensions: trustworthiness, "How trustworthy do you think the author is that said, 'people should have to pay twice what they currently pay for internet service taxes?'" (1 = extremely untrustworthy to 7 = extremely trustworthy); likability, "How likable was the author that said, 'people should have to pay twice what they currently pay for internet service taxes?'" (1 = extremely unlikable to 7 = extremely likable); expertise "How much of an expert is the author on the issue that said, 'people should have to pay twice what they currently pay for internet service taxes?'" (1 = extremely non-expert to 7 = extremely expert); intelligence, "How intelligent do you think the author is that said, 'people should have to pay twice what they currently pay for internet service taxes?'" (1 = extremely unintelligent to 7 = extremely intelligent); and informed, "How informed on the topic did the author come across that said, 'people should have to pay twice what they currently pay for internet service taxes?'" (1 = extremely uninformed to 7 = extremely informed). The average score was calculated, and a Cronbach's alpha reliability test was conducted with these five items comprising the source factors composite.

  Message Strength Composite. In order to examine the effect of message frames on perception of message strength, a scale was created. This measure had two items: the first asked participants about the message strength, "How strong was the case of the author that said, 'people should have to pay twice what they currently pay for internet service taxes?'" (1 =

extremely weak to 7 = extremely strong); and the second about how compelling they found the message, "How compelling were the arguments of the author that said, 'people should have to pay twice what they currently pay for internet service taxes?'" (1 = not at all compelling to 7 = extremely compelling). An average score was calculated, and a Cronbach's alpha reliability test was conducted with the two items comprising the message strength composite.

Engagement Composite. In order to examine the effect of message frame on the extent to which participants engage with the message, a scale on participant engagement has been created. For this composite, participants reported how much they engaged with the message. There were three items comprising it: the first was how open participants kept their 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 taxes?'" (1 = no attempt to keep an open mind to 7 = complete attempt to keep an open mind); how much attention they paid, "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 taxes?'" (1 = not attention to 7 = complete attention); and how much thought they put in, "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 taxes?'" (1 = no attention to 7 = complete attention). The mean was calculated, and a Cronbach's alpha reliability test was conducted with the three items comprising the close-mindedness composite.

Demographics Questionnaire. The last survey was a demographics questionnaire that asked about age, sex, and race. The purpose of collecting these data was for describing the sample.

Procedure

Participants accessed the study through Cloud Research by following a link to the Qualtrics survey. Participants read the informed consent, and those that indicated that they agree to participate in the study continued. The next page had a robot captcha check. Then participants indicated how much they agree that internet services taxes should be increased. Participants were then randomly placed into one of the five conditions: idea attack, personal attack, unable to defend position, irrelevant-frame control, and a no-frame control. In the experimental conditions and the irrelevant-frame control participants were asked to reflect and write about an experience they had, then were given a one-sentence summary message. Those in the no-frame control condition bypassed this step. All participants then saw the following directions: "On the following page, you will be asked to read a message which is either in favor or opposed to one of several topics. After reading the message, you will be asked various questions about the message." Participants were then asked to read the counterattitudinal message and answer attention checks. Participants were asked on a Likert scale ranging from 1 to 7 to what extent they agree with the message. Then participants reported their attitudes towards the source, the message strength, and their level of engagement were assessed. After completing this measure, there was a questionnaire that asked about the participant's familiarity with the experiences that the processing frames were asking about (see Appendix E). Finally, participants filled out the short demographic questionnaire, were debriefed, and thanked for their time.

Chapter 3 - Results

Data Preparation

Data was collected from 324 participants; however, several participants were not used in the analyses due to failing either of the attention checks. All participants had the following attention check, (i.e., *"The main topic of the long message you just read was:"* the correct answer was *"internet tax"*). Additionally, participants had an attention check for the specific condition they were in, (i.e., *"What were you instructed to think about before reading the message?* The correct answer for each condition was, no-frame control: *"I was not instructed to think about anything in particular"*, irrelevant-frame control: "*About a movie or tv show I've seen"*, personal attack: *"About a time when someone got upset with me or took something personally"*, idea attack: *"About a time when someone dismissed my idea without letting me explain"*), unable to defend position: "*About a time I was unaware, or hadn't thought much about, the points from the other side of an issue*". In total, 22 participants who failed either one of these two attention checks were excluded, resulting in a final sample of 302 participants. The sample size was large enough to detect a medium effect size, as a g power analysis indicated that a sample size of 302 or larger would be necessary. Cell sizes for each condition were similarly distributed: no-frame control (n = 62), idea attack (n = 62), irrelevant-frame control (n = 60), personal attack (n = 60), and unable to defend position (n = 58).

In order to test the hypotheses, composite variables were created for the following dependent variables: source factor, message strength, and engagement. For *source factors*, the mean scores were calculated from the items: trustworthiness, likability, expertise, intelligence, and informed. The composite had good inter-consistency ($\alpha = .87$). The *message strength* composite was created with the mean scores from the items: message strength, and compelling.

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The alpha for the message strength composite was high ($\alpha = .95$). For the *engagement* composite, the mean scores were calculated from the items: open-mind, attention, and thought. The reliability for this composite was also acceptable ($\alpha = .72$). See table 1 for the means and standard deviations of these scale items. These composites were then used to test the hypotheses.

Table 1. Means of Scale Items (1 to 7 Likert)

Composite	Scale Items	*M*	*SD*
Source Factors	Trustworthy	4.01	1.44
	Likability	3.85	1.63
	Expertise	4.08	1.57
	Intelligence	4.72	1.34
	Informed	4.61	1.58
Message Strength	Strength	3.93	1.85
	Compelling	4.01	1.89
Engagement	Open mind	5.53	1.55
	Attention	6.47	0.90
	Thought	5.98	1.19

Hypothesis Testing

To test **hypothesis 1**, which predicted that participants in either the "personal attack message", "idea attack message", or "unable to defend position message" conditions will agree more with the message position than participants in the "irrelevant-frame control" and/or "no-frame control" conditions, an ANCOVA test was conducted, with post-test agreement as the dependent variable, pre-test agreement as the covariate, and condition as the factor variable. Results were non-significant, $F(4, 296) = 1.78$, $p = .133$, $\eta^2 p = 0.20$ (see Table 2). However, due to the effect size being smaller than anticipated, a larger sample would have been required to detect the effect. Therefore, it was thought that an omnibus might not have been the most

appropriate statistical approach. Therefore, with the suggestion and approval of a committee

member, a multiple stage approach was conducted.

Table 2. Results of an ANCOVA for Post-Test Agreement

	Sum of Squares	df	Mean Square	F	p	$\eta^2 p$
Condition	16.2	4	4.06	1.78	.133	0.20
Pre-test Agree	169.5	1	169.53	74.21	<.001	0.02
Residuals	676.2	296	2.28			

First, using an analysis of covariance test, the no-frame control ($M = 2.21$, $SE = 0.21$) and

irrelevant-frame control ($M = 2.20$, $SE = 0.22$) were found to not be significantly different, $F(1,$

$119) = 0.006$, $p = .938$, $\eta^2 p = 0.00$. Therefore, the irrelevant-frame control was kept as the

irrelevant condition seemed to be no different from the no frame control. For the testing of the

message manipulation effect, the irrelevant condition was used as a reference for all further

analyses. Next, the irrelevant-frame control ($M = 2.20$, $SE = 0.22$) was compared to the personal

attack condition ($M = 2.27$, $SE = 0.22$) and found to not be significantly different, $F(1, 117) =$

0.08, $p = .781$, $\eta^2 p = 0.00$. Next, the irrelevant-frame control ($M = 2.20$, $SE = 0.22$) and idea

attack ($M = 2.61$, $SE = 0.21$) were compared, $F(1, 119) = 2.50$, $p = .116$, $\eta^2 p = 0.02$, this too was

not significant. Finally, the irrelevant-frame control ($M = 2.20$, $SE = 0.22$) was compared with

the unable to defend position condition ($M = 2.64$, $SE = 0.22$) and also found to not be

significant, $F(1, 115) = 2.65$, $p = .106$, $\eta^2 p = 0.02$. Thus, it can be concluded that hypothesis 1

was not supported, as none of the processing frames were effective at influencing participants to

agree more with the position of the author of the counterattitudinal message than those in the

irrelevant-frame control. Table 3 has the means of post-test agreement for each condition.

Table 3. Means for Post-test Agreement (1 to 7 Likert)

Condition	*M*	*SE*	95% Lower	95% Upper
No-frame control	2.21	0.21	1.79	2.63
Irrelevant-Frame control	2.20	0.22	1.77	2.63
Personal Attack	2.27	0.22	1.84	2.70
Idea Attack	2.61	0.21	2.19	3.03
Unable to defend position	2.64	0.22	2.20	3.07

Note. (Agreement with the question: "To what extent do you agree with the author that said, 'people should have to pay twice what they currently pay for internet service taxes?" (1 = strongly disagree to 7 = strongly agree)).

To test **hypothesis 2**, which predicted that participants in the "personal attack message" condition will be less likely to derogate the source than participants in the "irrelevant-frame control" and/or "no-frame control" conditions, an ANOVA test was conducted, with source factors as the dependent variable and condition as the factor variable. Results were non-significant, $F(4, 297) = 1.40$, $p = .234$, $\eta^2 p = 0.02$ (see Table 4). Next, a stepwise approach was conducted to investigate if the experimental conditions were effective (see Table 5). First, using a *t* test, the no-frame control ($M = 4.24$, $SE = 0.15$) and irrelevant-frame control ($M = 4.06$, $SE = 0.16$) were found to not be significantly different, $t(120) = 0.86$, $p = .394$, $d = 0.16$. Therefore, the irrelevant-frame control was used for further analyses. Next, the irrelevant-frame control ($M = 4.06$, $SE = 0.16$) was compared to the personal attack condition ($M = 4.14$, $SE = 0.16$), $t(118) = -0.35$, $p = .729$, $d = -0.06$, and found to not be significantly different. Therefore, it can be concluded that hypothesis 2 was not supported as the personal attack processing frame was not effective at influencing participants to derogate the source less than the irrelevant-frame control.

Table 4. Results of an ANOVA for Source Factors

	Sum of Squares	df	Mean Square	F	p	$\eta^2 p$
Condition	8.26	4	2.07	1.40	.234	0.02
Residuals	438.65	297	1.48			

Table 5. Means for Source Factors (1 to 7 Likert)

Condition	M	SE	95% Lower	95% Upper
No-frame control	4.24	0.15	3.93	4.54
Irrelevant-Frame control	**4.06**	**0.16**	**3.75**	**4.37**
Personal Attack	**4.14**	**0.16**	**3.83**	**4.45**
Idea Attack	4.54	0.15	4.23	4.84
Unable to defend position	4.29	0.16	3.97	4.60

Note. Lines that are bolded are relevant for testing hypothesis 2. (Means for source factors composite measured on a 1 to 7 Likert scale, higher numbers indicate a more positive rating. This is the average composite of perceptions of the source as measured by: trustworthy, likability, expertise, intelligence, and informed).

As exploratory analyses, the other conditions were then compared to the irrelevant-frame control. The irrelevant-frame control ($M = 4.06$, $SE = 0.16$) and idea attack ($M = 4.54$, $SE = 0.15$) were found to be significantly different, $t(120) = 2.35$, $p =.021$, $d = 0.43$. The idea attack processing frame was effective at getting participants to derogate the source less compared to the irrelevant-frame control. However, these results should be cautiously interpreted as they were not hypothesized. Finally, the irrelevant-frame control ($M =4.06$, $SE = 0.16$) was compared with the unable to defend position condition ($M = 4.29$, $SE = 0.16$), which was not significant, $t(116) = -1.05$, $p =.297$, $d = -0.19$.

To test **hypothesis 3**, which predicted that participants in the "idea attack message" condition will be less likely to derogate the strength of the message than participants in the "irrelevant-frame control" and/or "no-frame control" conditions, an ANOVA test was conducted, with message strength as the dependent variable and condition as the factor variable. Results

were non-significant, $F(4, 297) = 0.60$, $p = .662$, $\eta^2p = 0.01$, (see Table 6). Next, a stepwise

approach was conducted to investigate if the experimental conditions were effective (see Table

7). First, using a t test, the no-frame control ($M = 3.91$, $SE = 0.23$) and irrelevant-frame control

($M = 3.81$, $SE = 0.24$) were found to not be significantly different, $t(120) = 0.31$, $p = .755$, $d =$

0.06. Therefore, the irrelevant-frame control was used for all further analyses. Next, the

irrelevant-frame control ($M = 3.81$, $SE = 0.24$) and idea attack ($M = 4.27$, $SE = 0.23$) were

compared, $t(120) = 1.39$, $p = .168$, $d = 0.25$, and found to not be significantly different. Therefore,

it can be concluded that hypothesis 3 was not supported, such that the idea attack processing

frame was not effective at influencing participants to derogate the strength of the message less.

Table 6. Results of an ANOVA for Message Strength

	Sum of Squares	df	Mean Square	F	p	η^2p
Condition	8.06	4	2.02	0.60	.66	0.00
Residuals	996.39	297	3.35			

Table 7. Means for Message Strength (1 to 7 Likert)

Condition	M	SE	95% Lower	95% Upper
No-frame control	3.91	0.23	3.45	4.37
Irrelevant-Frame control	**3.81**	**0.24**	**3.34**	**4.27**
Personal Attack	3.87	0.24	3.41	4.34
Idea Attack	**4.27**	**0.23**	**3.82**	**4.73**
Unable to defend position	3.97	0.24	3.49	4.44

Note. Lines that are bolded are relevant for testing hypothesis 3. (Means for message strength composite measured on a 1 to 7 Likert scale, higher numbers indicate a more positive rating. This is the average composite of perceptions message strength as measured by: message strength and compelling).

As exploratory analyses, the other frames were tested for significance. The irrelevant-

frame control ($M = 3.81$, $SE = 0.24$) was compared to the personal attack condition ($M = 3.88$,

$SE = 0.24$), $t(118) = -0.21$, $p = .836$, $d = -0.04$, and found to not be significant. Finally, the

irrelevant-frame control ($M = 3.81$, $SE = 0.24$) was compared with the unable to defend position condition ($M = 3.97$, $SE = 0.24$), and also found to not be significant, $t(116) = -0.47$, $p = .637$, $d = -0.09$.

To test **hypothesis 4**, which predicted that participants in the "unable to defend message" condition will be more engaged when reading the message than participants in the "irrelevant-frame control" and/or "no-frame control" conditions, an ANOVA test was conducted, with engagement as the dependent variable and condition as the factor variable. Results were non-significant, $F(4, 297) = 1.52$, $p = .196$, $\eta^2p = 0.02$ (see Table 8). Next, a stepwise approach was conducted to investigate if the experimental conditions were effective (see Table 9). First, using a t test, the no-frame control ($M = 5.93$, $SE = 0.13$) and irrelevant-frame control ($M = 5.75$, $SE = 0.13$) were found to not be significantly different, $t(120) = 0.93$, $p = .353$, $d = 0.17$. Therefore, the irrelevant-frame control was kept, and the no-frame control was omitted from all further analyses. Next, the irrelevant-frame control ($M = 5.75$, $SE = 0.13$) was compared with the unable to defend position condition ($M = 6.13$, $SE = 0.13$), $t(116) = -2.07$, $p = .041$, $d = -0.39$, this was significant. Therefore, it can be concluded that the unable to defend position processing frame was effective at influencing participants to be more engaged when reading the counterattitudinal message than those in the irrelevant-frame control, thus supporting Hypothesis 4.

Table 8. Results of an ANOVA for Engagement

	Sum of Squares	df	Mean Square	F	p	η^2p
Condition	6.02	4	1.51	1.52	.20	0.02
Residuals	293.73	297	0.99			

Table 9. Means for Engagement (1 to 7 Likert)

Condition	*M*	*SE*	95% Lower	95% Upper
No-frame control	5.93	0.13	5.68	6.18
Irrelevant-Frame control	**5.75**	**0.13**	**5.50**	**6.00**
Personal Attack	6.02	0.13	5.77	6.27
Idea Attack	6.12	0.13	5.88	6.37
Unable to defend position	**6.13**	**0.13**	**5.88**	**6.39**

Note. Lines that are bolded are relevant for testing hypothesis 4. (Means for engagement composite measured on a 1 to 7 Likert scale, higher numbers indicate a more positive rating. This is the average composite of perceptions of participant engagement as measured by: open mind, attention, and thought).

The following analyses were exploratory. The irrelevant-frame control ($M = 5.75$, $SE = 0.13$) was compared to the personal attack condition ($M = 6.02$, $SE = 0.13$), which was found to not be significant, $t(118) = -1.41$, $p = .162$, $d = -0.26$. Finally, the irrelevant-frame control ($M = 5.75$, $SE = 0.13$) and idea attack ($M = 6.12$, $SE = 0.13$) conditions were compared and found to be significantly different, $t(120) = 2.12$, $p = .036$, $d = 0.38$. Although this was an exploratory analysis and these results should be cautiously interpreted, it suggests that the idea attack condition was effective at persuading participants to be more engaged than those in the irrelevant frame control.

Supplementary Data

Recall that the message processing frames asked participants to reflect on an experience they had. This study assumed that participants had these experiences. However, when participants answered questions about their familiarity with these types of situations, they indicated low frequency and intensity, often below or close to neutral on a 1 to 7 Likert scale. See Table 10 to see participant responses to questions about these situations. To investigate if these data were related to the dependent variables, these items were covaried out, however, this did not make a difference in terms of significance. This is likely due to the restriction of range,

with most participants falling lower within the range. It is worth considering that one reason why

hypotheses 1, 2, and 3 may not have been supported, is that participants do not report much

experience with the situations described in the inductions. More will be said about these

supplementary data in the limitations section of the discussion.

Table 10. Supplementary Questions Assessing Experience with the Situations Described in the Manipulations (1 to 7 Likert)

Question	*M*	*SD*
1. You've been cut off frequency	3.79	1.54
2. Feel bad cut off	5.00	1.47
3. Cut off others frequency	3.37	1.46
4. You take personally frequency	3.43	1.49
5. Feel bad you take personally	4.11	1.63
6. Others take personally frequency	4.04	1.43
7. Feel bad others take personally	4.42	1.66
8. Unprepared frequency	4.05	1.36
9. Feel bad unprepared	4.69	1.64

1. How often do people cut you off while you are speaking? (1 = Never to 7 = All the time)

2. How bad does it make you feel when people cut you off while you are speaking? (1 = Not at all bad to 7 = Extremely bad)

3. How often do you cut other people off while they are speaking? (1 = Never to 7 = All the time)

4. How often do you take it personally or get upset when other people disagree with you? (1 = Never to 7 = All the time)

5. How bad do you feel at those times when you take it personally or get upset when people disagree with you? (1 = Not at all bad to 7 = Extremely bad)

6. How often do other people take it personally or get upset when you disagree with them? Even though you didn't intend it that way. (1 = Never to 7 = All the time)

7. How bad do you feel when other people take it personally or get upset when you disagree with them? Even though you didn't intend it that way. (1 = Not at all bad to 7 = Extremely bad)

8. How often have you had a conversation where you were not prepared to defend your position because you were unaware of, or hadn't thought much about, points supporting the other side? (1 = Never to 7 = All the time)

9. How bad do you feel at those times when you are unprepared to defend your position because you were unaware of, hadn't thought much about, points from supporting the other side? (1 = Not at all bad to 7 = Extremely bad)

Additionally, the outcome variables were correlated with one another (see table 11), which is not surprising, as people's evaluations of messages and source tend to influence one another (Osgood & Tannenbaum, 1955).

Table 11. Correlation Matrix of Dependent Variables

		Post-Test Agree		Source Factors		Engagement		Strength
Post-Test Agreement	Pearson's r	—						
	p-value	—						
Source Factors	Pearson's r	0.420	***	—				
	p-value	< .001		—				
Engagement	Pearson's r	0.127	*	0.332	***	—		
	p-value	0.027		< .001		—		
Strength	Pearson's r	0.579	***	0.728	***	0.281	***	—
	p-value	< .001		< .001		< .001		—

Note. * p < .05, ** p < .01, *** p < .001

Chapter 4 - Discussion

The primary goal of this study was to identify an effective method to influence people to be more open to counterattitudinal information, and its source. This is important, as the tendency to only view attitudinally consistent information (*selective exposure*), and avoid inconsistent information, is becoming increasingly common and causing problems in society (Lukianoff & Haidt, 2018). One thing that this thesis was designed to examine was the use of personally relevant information, which to our knowledge has not been used before in this context. To get participants motivated to process a message, message processing frames were constructed in a way that was personally relevant to the participant. Studies have shown that information that is personally relevant to the recipient tends to be attended to and processed more (Petty & Cacioppo, 1979). By relating their personal experience to the behavior, participants should remember it better and be more influenced by it. One thing researchers have looked at, and is very predictive of behavior, is *direct behavior experience* (Fazio & Zanna, 1981). Fazio and Zanna found that attitudes that are based on past experiences are predictive of future behavior. It was the hope of this study to help shape participant's attitudes towards their past experiences, as it would likely have an effect on future behavior.

Participants in the study were recruited from Cloud Research and completed a Qualtrics survey. Participants first indicated how much they agreed with the statement: "To what extent do you believe that people should have to pay twice what they currently pay for internet service taxes?". Participants were then randomized into one of five conditions. The goals of this study were to see if short interactive messages (message-processing frames) might influence participants to agree more with the position of a counterattitudinal message, be less likely to derogate the source, less likely to derogate the message, and engage more when reading the

message. Each of these messages asked participants to recall an unfavorable experience they had, then write a few words about the experience and how they felt. Participants were then given a short one-sentence take-away message which emphasized the main point of the message-processing frames.

The first persuasive processing frame: the *personal attack* processing frame asked participants to not derogate the source. This is related to the idea of congruity theory, which would say: "If I don't like the message, I won't like the source." Therefore, this appeal attempted to get participants to be more open-minded about the source and evaluate the source's message more fairly. The second appeal: the *idea attack* processing frame asked the participants to be more open-minded about the ideas of the message. This relates to the idea of not jumping to conclusions. The third persuasive appeal: the *unable to defend position* processing frame made participants aware of the shortcomings of avoiding information and that it is better to view information from counterattitudinal sources than avoid it. This literature informing this position was inoculation theory and the vulnerability of one-sided messages. The fourth condition was an *irrelevant-frame control*, and it merely asked participants to reflect on an experience they had when they saw a movie or tv show that did not meet their expectations. Additionally, the fifth condition was a no-frame control condition. That condition was found to not be statistically different from the irrelevant-frame control.

After the induction, participants in each condition then read a counterattitudinal message about increasing internet service taxes and were then asked to indicate "to what extend do agree with the author that internet service taxes should be doubled?". Then participants rated the source along the dimensions of: trustworthiness, intelligence, expertise, informed, and likability; the message strength along the dimensions of how strong participants found the message to be

along with how compelling it was; and how engaged participants rated themselves when reading the counterattitudinal message, as measured by: attention, thought, and open mind. Finally, participants indicated how much familiarity they had with the types of experiences that they been asked about in the message processing frames. Results from the study were mixed, goal 1 was not met: 1. "Figure out how to influence people to not derogate the source without reason, just because the source says something the recipient disagrees with." However, goal 2 was met: "Investigate different message frames, or ways of framing a message, to discover which is most influential at getting people to fairly evaluate the argument, or not be dismissive." Participants were more engaged when evaluating the argument. The following sections describe the results of the study in further detail.

Hypothesis 1 was tested, which predicted that participants in either the "personal attack message", "idea attack message", or "unable to defend position message" conditions will agree more with the message position than participants in the "irrelevant-frame control" and/or "no-frame control" conditions. This hypothesis was not supported, as none of the processing frames were effective at influencing participants to agree more with the position of the author of the counterattitudinal message than those in the irrelevant-frame control. It is likely that participants simply found the message to be too weak, as the interventions did not increase their level of agreement.

Hypothesis 2 was tested, which predicted that participants in the "personal attack message" condition will be less likely to derogate the source than participants in the "irrelevant-frame control" and/or "no-frame control" conditions. The irrelevant-frame control was compared to the personal attack condition and found to not be significantly different. Therefore, it can be concluded that hypothesis 2 was not supported as the personal attack processing frame was not

effective at influencing participants to derogate the source less than the irrelevant-frame control. It was almost as if asking them to recall a time in which they were personally attacked for expressing their ideas primed them to respond poorly. This was an unexpected result, as it was expected that those who had thought about a time in which they were personally attacked, and how uncomfortable that experience was would then be less inclined to derogate the source. However, this was not the case. It is possible that participants experienced the anticipated discomfort, but that it did not have the intended effect of influencing them to derogate the source less. More research would need to be conducted to investigate what kind of emotional effect the personal attack condition is having on participants.

One possible reason for the non-significant result of the personal attack frame on participants' rating of the source was that participants did not link their experience of other people treating them poorly to their own behavior. Therefore, the personal attack frame may have had no impact on how participants later rated a source whose ideas they disagreed with. Although this hypothesis was not supported, the result was consistent with what congruity theory predicts, that those who disagree with a message, are also likely to find the source disagreeable (Osgood & Tannenbaum, 1955). A stronger manipulation is likely needed to change this natural response.

Results from an exploratory analysis demonstrated that the idea attack processing frame was effective at getting participants to derogate the source less compared to the irrelevant-frame control. However, these results should be cautiously interpreted as they were not hypothesized. It is possible that the idea attack condition was effective at getting the participants to evaluate the message with more of an open mind, as the idea attack condition told them, "It is best to let people fully express themselves before cutting them off or making judgements about their

reasons for believing something." Therefore, participants likely extended the courtesy to the source. A case can be made that the idea attack condition was worded in a way that was related more closely to the source factors composite than the message strength composite.

Hypothesis 3 was tested, which predicted that participants in the "idea attack message" condition will be less likely to derogate the strength of the message than participants in the "irrelevant-frame control" and/or "no-frame control" conditions. The irrelevant-frame control and idea attack were compared and found to not be significantly different. Therefore, it can be concluded that hypothesis 3 was not supported, such that the idea attack processing frame was not effective at influencing participants to derogate the strength of the message less. As alluded to in the explanation for hypothesis 2, the idea attack condition was worded in a way that it may have encouraged participants to think of a time they were personally attacked, rather than just their ideas.

Hypothesis 4 was tested, which predicted that participants in the "unable to defend message" condition will be more engaged when reading the message than participants in the "irrelevant-frame control" and/or "no-frame control" conditions. The irrelevant-frame control was compared with the unable to defend position condition and found to be significant. Therefore, it can be concluded that the unable to defend position processing frame was effective at influencing participants to be more engaged when reading the counterattitudinal message, thus supporting Hypothesis 4.

An exploratory analysis found the irrelevant-frame control and idea attack to be significantly different. Although this was an exploratory analysis and these results should be cautiously interpreted, it suggests that the idea attack condition was effective at persuading participants to be more engaged than those in the irrelevant frame control. This is also promising,

as the way the idea attack condition asked participants to not unfairly attack someone's ideas or cut them off and results indicated that participants did as they were asked. Although participants in the idea attack processing frame derogated the message just as much as the control, this exploratory analysis found that they put more thought, attention, and having an open mind while reading the message than participants in the control conditions.

As was discussed earlier in this thesis, the strongest result was expected to come from the unable to defend position frame. This was due to the wording of the frame, which informed participants about the benefits that come from acquiring more information, and the downsides of not knowing this information. As the significance of hypothesis 4 demonstrated, this processing frame influenced the participants to put more thought, attention, and have an open mind when they were exposed to the counterattitudinal message. This makes the unable to defend position processing frame especially promising as it influenced participants to engage more, even when they found the message and source disagreeable.

This has important implications, as it is not only good for people to be willing to be exposed to messages that are disagreeable, but to also put more thought into processing them. One such type of disagreeable information that should be attended to is that of personal health. As earlier discussed, when given the chance, people tend to prefer not to learn about their genetic risk of developing cancer (Ropka et al., 2006). It is not pleasant to learn about the risk of having cancer. This avoidance can be especially problematic, as the longer cancer goes undetected, the less treatable it becomes. Therefore, it is encouraging that the unable to defend position processing frame influenced participants to willingly expose themselves to information even though they found that information to be disagreeable.

Composites

To assess the degree to which the message processing frames influence the participants, three composite variables were created for this study: the source factors composite, message strength, and engagement. These composites each demonstrated high internal consistency. Indeed, analyses indicated that removing items from the composites would not increase the alpha level. The creation of these scales is a contribution to this line of research as these composites were successful in assessing participants perceptions of the source, their message strength, and their own engagement. These composites will be useful in future studies that seek to measure phenomena along these dimensions.

Additionally, these composites are also correlated with one another. Indicating that participants who agreed more with the message also tended to rate the source higher. These observed correlations helped capture the relationship between source and message that congruity theory would predict (Osgood & Tannenbaum, 1955). Specifically, that the way that people view the source will influence how they rate their message, and vice a versa. However, it is important to consider that these correlations could be indicative of an issue with construct validity. Additionally, these scales should be tested against other scales that measure the same constructs in order to evaluate their criterion validity. Before further research is conducted with these scales, more work should be done to validate them by examining their psychometric properties.

Supplementary Data

Recall that the message processing frames asked participants to reflect on an experience they had. This study assumed that participants had these experiences. However, when participants answered questions about their familiarity with these types of situations, they indicated low frequency and intensity, often below neutral on a 1 to 7 Likert scale. One reason

why hypotheses 1-3 may not have been supported is that participants do not have a lot of experience with the situations described in the inductions. That might be one reason why the inductions were not very effective.

As stated, the goal of this study was to address this problem of selective exposure to information, to do so, we asked participants to recall experiences they had with being cutoff, personally attacked, or unable to defend their position. However, participants indicated low familiarity with these types of experiences. It is possible that these types of contentious interactions that the message processing frames attempted to target, happen primarily online, rather than face-to-face. If this is the case, then the issue lies with the way these questions were written. Participants may have thought that the situation they were asked to recall was face-to-face and did not think about encounters in other domains. People may be less likely to derogate someone in a face-to-face situation than in an online format. For example, in a face-to-face exchange, someone might derogate someone else in their mind but not say anything, whereas on the internet, they may not self-censor. Additionally, it is possible that people are experiencing these things, but they might not be realizing that they are doing it. Even if people are jumping to negative conclusions, or someone they are interacting with is jumping to negative conclusions, they might not think of it that way.

One reason that could explain the low rates of occurrence that participants reported about their experiences with the manipulations, is that people are being selective about what they say. People are not only careful about what they are exposed to, but are hesitant with what they say (Horton, 2011). This could be because they do not want to stir up contention. Furthermore, it is possible that because people are being selective about who and what they are being exposed to, they are not having these types of negative interactions. Their ideas are not attacked because

everyone they interact with endorses those same views. Likewise, they do not feel the need to derogate other's ideas.

Limitations

Although the theories informing this study are sound, (i.e., congruity theory, selective exposure), in hindsight it appears that there may have been some issues with the methodology. First, the sample size of 302 may have not been large enough to detect the effect sizes obtained in this study. A g power analysis indicated that a minimum sample size of 470 would be required to detect the small-medium effects that were observed. Secondly, there were issues with the message processing frames. Although, the issue of selective exposure and the problems associated with it have been frequently documented, our participants did not indicate that they were engaging in, or were the recipients of, selective exposure. Although, this could be their experience, it could be possible, or likely that the questions were not worded in a way to get participants to tap at the specific experiences that we were trying to focus on. These message processing frames could have been worded better to target the experiences we wanted the participants to focus on. Third, the counterattitudinal message may have been too disagreeable, or at least not compelling enough. The following paragraphs will explain these limitations in further detail.

Processing Frame Issues. Two of the message processing frames were not effective, the personal attack condition and the idea attack condition. One limitation to this study was that it was assumed that people were familiar with these negative experiences and assumed that the messages were written in a way that would get participants to recall these experiences. In hindsight, it would have been beneficial if a pre-test would have asked participants about their

familiarity with these kinds of situations. It is likely that a pre-test would have revealed that the inductions were too short and written in a way that participants could not strongly identify with.

As discussed in the introduction to this thesis, the internet is making it increasingly easy to be selective. It is likely that people on the internet are not being cut off, nor are they being personally attacked to the point that they were not allowed to fully express their thought. On the internet, one person writes their opinion, then the opposing person writes their side. People are not necessarily being cutoff. People may unfriend those with differing views, or simply not read what they have to say or open their link. Therefore, there may be an issue of generalizability. That the experiences the inductions were asking the participants to recall, were different than the actual selective exposure experiences that they are having. However, on the internet, people have likely had experiences of not being able to defend their position. Therefore, it follows that the unable to defend position processing frame was effective. To also be effective, the personal attack and idea attack frames should be worded in a way that induces participants to think about selective exposure experiences they are more commonly having. Our message processing frames did not do a good job at influencing participants to recall these experiences. As discussed, it would have likely been more fruitful to target the types of experiences that people are having on the internet.

Downsides Were not Conveyed. The way these frames were worded did not make the downsides of selective exposure apparent to the participant. It was hoped that the participant would recall an experience they had where they attempted to communicate good information to another person that would have benefited that person. However, because this other person cut them off, or personally attacked them, the other person did not receive this benefit. It was thought that this would influence the participant to be careful to not cut someone else off because

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they would not want to risk missing out on the benefit of hearing that information, the way that someone missed out on hearing their information. However, this idea of the downsides of missing information was never communicated to the participants. Therefore, it is likely that this factor was not considered by the participants.

      Weak Counterattitudinal Message. Another issue with this study design was that the counterattitudinal message might not have been persuasive enough. Participants that reported being more engaged when reading the message, did not agree with the message, nor rate it more favorably than those who were less engaged. This indicates that the message was not compelling enough. Regarding the significance of hypothesis 4, it is encouraging that participants reported paying more attention to the message, even though they did not like it.

Future Directions

As discussed, it is clear that people are being selective about what they are exposed to. There are two main directions future research could take. First, future research could address limitations from this study and run it again. The processing frame that best represented the benefits of being exposed to counterattitudinal information was the unable to defend position frame as it talked about how it could be unpleasant to not know information. The results indicated that this condition was promising, therefore it should be included in future research. This processing frame was the only one that had a predicted significant outcome. However, for future studies, the idea attack and personal attack frames should be changed to help participants more easily see the benefits associated with hearing someone else out. It is important to investigate whether the personal attack and idea attack frames, when done properly, are effective, or in fact the current study is accurate in demonstrating their lack of effectiveness. Additionally,

the no-frame control condition can be removed, as the irrelevant-frame control was effective at serving as the control condition.

The intervention frames should be re-worded to be more relevant to participant's actual experience. One possible way to do this is to ask participants about experiences that occurred on the internet. It is likely that these types of negative situations occur more frequently in online contexts rather than face-to-face. Potential questions could ask participants about times they were blocked or unfriended online, or verbally attacked due to something they said online. It is likely that once these questions are phrased in a way that causes participants to recall a time in which their ideas were attacked online, rather than in-person, they will be more likely to think of an experience. It would also be interesting to test the length of the message processing frame. It may be that longer messages elicit larger effects.

One possible way of enhancing the effect of the framing manipulation, would be to first create a selective exposure situation. For example, participants could be asked to communicate with another participant in the study via a messenger application. This other participant, who is really a confederate, then cuts them off, and derogates their ideas. This would then make the types of situations this experiment is trying to study, more pronounced. After participants are subjected to this experience, they would then receive one of the message processing frames.

Secondly, it would be helpful to figure out why people are being selective about what they are being exposed to. Perhaps it is not so much that people are avoiding things they dislike, as it is that they are seeking out things that they do like. However, future studies should try to identify when and why people are selectively exposing themselves to information. Then once the cause of the problem is identified, an intervention could then be developed to better target the behavior.

Additionally, the message source of the counterattitudinal message was not identified in this experiment. It would be interesting to manipulate the identity of the source to investigate how that influences the participants' response. The format of the message could also be changed, perhaps to a video message rather than a text one. The topic of the message could be manipulated to be a politically charged belief. One of the earlier reviewed articles reported that people are more selective about certain topics (Hart et al., 2009). It would be interesting to see how participants who read the message processing frames would rate the source and the message strength on a range of topics where their involvement is varied, such as politics or abortion, as well as more benign topics. It would be particularly illuminating to investigate the unable to defend position frame's influence on participant engagement in the context of various counterattitudinal messages. As discussed, it can be problematic to avoid information, therefore, this frame should be further tested as it was influential at engaging participants.

Conclusion

The idea attack and unable to attack processing frames showed some promise at influencing participants to be more engaged when reading a counterattitudinal message. However, none of the processing frames were effective at influencing participants to agree with the position of the author or derogate the message less. An exploratory analysis found that participants in the idea attack condition derogated the source less than the control, however, this was not a predicted outcome, and more research should be done to investigate this message frame further. An important finding that could help explain this result is that participants in the unable to defend position processing frame condition reported a higher level of engagement, however they were not more likely to agree with the message or think that the message was stronger or more compelling. This indicates that the counterattitudinal message was not strong

enough as participants who approached it with more thought, attention, and an open mind did not find it any more agreeable than those who did not engage with it. It is encouraging that participants were willing to engage more with a message whose topic they were opposed to. This has important implications as selective exposure is a problematic behavior that can have detrimental effects within various domains, such as health, learning, and decision-making. In many of those domains, the information might be quite disagreeable, such as learning about a genetic risk to developing cancer (Ropka et al., 2006). Although this information is not pleasant, it would be in the person's best interest to be exposed to it. Therefore, future studies should pursue more avenues for influencing people to expose themselves to counterattitudinal content, not derogate counterattitudinal messages, or their sources.

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Appendix A - Message Processing Frames

Idea Attack Processing Frame Message

This survey deals with how people process information based on their mindset. Think of a time in which you said something that someone disagreed with, and they just dismissed your idea without letting you explain it or hearing you out.

Type a couple words that would remind you of the incident (e.g., who was it with, or when it happened, or where it happened). (Open response).

How did that make you feel, or if that has not happened to you, how do you think it would make you feel? (Open response).

It is best to let people fully express themselves before cutting them off or making judgements about their reasons for believing something.

Personal Attack Processing Frame Message

This survey deals with how people process information based on their mindset. Think of a time in which you said something that someone disagreed with, and they got upset with you or they took it personally even though that was not your intention. This person did not give you a chance to explain yourself.

Type a couple words that would remind you of the incident (e.g., who was it with, or when it happened, or where it happened). (Open response).

How did that make you feel, or if that has not happened to you, how do you think it would make you feel? (Open response).

It is best to let people fully express themselves before cutting them off or making judgements about them.

Unable to defend Position Processing Frame Message

This survey deals with how people process information based on their mindset. Think of a time in which you were unable to defend your position on an issue because you were unaware of, or never really thought about, the points from the other side.

Type a couple words that would remind you of the incident (e.g., who was it with, or when it happened, or where it happened). (Open response).

How did that make you feel, or if that has not happened to you, how do you think it would make you feel? (Open response).

It is good to be familiar with and think about the points from the other side of an issue in order to be able to defend your own position.

Irrelevant-Frame Control Message

This survey deals with how people process information based on their mindset. Think about a movie or tv show that you were excited to watch, but when you did watch it, it didn't meet your expectations.

Type a couple words that would remind you of the movie (e.g., who you saw it with, or when you watched it, or the title of the movie). (Open Response)

How did you feel while watching the movie? (Open response)

It is good to reflect on movies and tv shows that haven't met your expectations every once in a while.

Appendix B - Counterattitudinal Message

Counterattitudinal Message Prompt

On the following page you will be asked to read a message which is either in favor or opposed to one of several topics. After reading the message you will be asked various questions about the message.

Counterattitudinal Message

<u>**I BELIEVE THAT PEOPLE SHOULD HAVE TO PAY TWICE WHAT THEY CURRENTLY PAY FOR INTERNET SERVICE TAXES.**</u>

There are many exciting new possibilities being made possible through the internet. However, these possibilities are limited by the amount of taxes that are collected. By doubling the amount of taxes we pay, the funds for servicing and developing the internet will be greatly increased. These funds can be used to build more servers and run more fiber-optic lines, both of which increase internet speeds and decrease outages. The more stable and reliable the internet is, the more it will be made possible for people to work from home or attend school online anywhere in the continental United States.

One of the most exciting possibilities coming from faster, reliable internet is remote processing. It is now possible to play state of the art games or edit videos by utilizing processing centers via the internet. The processing is done so fast, that it is like it is done on the device. This means that all people will need, is a screen with an internet connection. With increased funding and development, gone will be the days of buying the newest and most powerful device. There would be no need to buy expensive computers, phones, and gaming systems. The processing can be done remotely. Therefore, increasing internet taxes will not only increase the speed and reliability of the internet in more locations, but also has the potential to save you money!

Additionally, people who don't use the internet very much, tend to have cheaper and more limited data plans. Therefore, the amount they pay would not be influenced much. This tax increase would be just for the big users. That is only fair, because those who use it the most, should pay the most.

Appendix C - Attention Checks

Internet Message

The main topic of the one-paragraph message was:

○ The restaurant industry

○ Traffic cameras

○ Internet tax

○ Cellphones

Idea Attack

What were you instructed to think about before reading the message?

○ About a time when someone dismissed my idea without letting me explain

○ About a movie or tv show I've seen

○ About an ordinary day I've had

○ About a time I went to Starbucks

Personal Attack

What were you instructed to think about before reading the message?

○ About a time when someone got upset with me or took something personally

○ About a movie or tv show I've seen

○ About an ordinary day I've had

○ About a time I went to Starbucks

Unable to Defend Position

What were you instructed to think about before reading the message?

○ About a time I was unaware, or hadn't thought much about, the points from the other side of an issue

○ About a movie or tv show I've seen

○ About an ordinary day I've had

○ About a time I went to Starbucks

Irrelevant-Frame Control

What were you instructed to think about before reading the message?

○ About a movie or tv show I've seen

○ About an ordinary day I've had

○ About a time when someone got upset with me or took something personally

○ About a time when someone dismissed my idea without letting me explain

No-Frame Control

What were you instructed to think about before reading the message?

○ I was not instructed to think about anything in particular

○ About a movie or tv show I've seen

○ About an ordinary day I've had

○ About a time when someone got upset with me or took something personally

Appendix D - Scales

<u>**Scale Intro**</u>
The following questions are about the message you just read that said: "people should have to pay twice what they currently pay for internet service taxes." Please select the choices which most closely reflect your views about the author and their ideas.

<u>**Agree**</u>
To what extent do you agree with the author that said, "people should have to pay twice what they currently pay for internet service taxes?"

1. Strongly disagree	2.	3.	4. Neutral	5.	6.	7. Strongly agree
○	○	○	○	○	○	○

<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 taxes?"

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

<u>**Attention**</u>
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 taxes?"

1. No Attention	2.	3.	4. Neutral	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 taxes?"

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

Compelling
How compelling were the arguments of the author that said, "people should have to pay twice what they currently pay for internet service taxes?"

	1. Not at all compelling	2.	3.	4. Neutral	5.	6.	7. Extremely compelling
	○	○	○	○	○	○	○

Strong
How strong was the case of the author that said, "people should have to pay twice what they currently pay for internet service taxes?"

	1. Extremely weak	2.	3.	4. Neutral	5.	6.	7. Extremely strong
	○	○	○	○	○	○	○

Informed
How informed on the topic did the author come across that said, "people should have to pay twice what they currently pay for internet service taxes?"

	1. Extremely uninformed	2.	3.	4. Neutral	5.	6.	7. Extremely informed
	○	○	○	○	○	○	○

Expert

How much of an expert is the author on the issue that said, "people should have to pay twice what they currently pay for internet service taxes?"

1. Extremely non-expert	2.	3.	4. Neutral	5.	6.	7. Extremely expert
○	○	○	○	○	○	○

Intelligent

How intelligent do you think the author is that said, "people should have to pay twice what they currently pay for internet service taxes?"

1. Extremely unintelligent	2.	3.	4. Neutral	5.	6.	7. Extremely intelligent
○	○	○	○	○	○	○

Trustworthy

How trustworthy do you think the author is that said, "people should have to pay twice what they currently pay for internet service taxes?"

1. Extremely untrustworthy	2.	3.	4. Neutral	5.	6.	7. Extremely trustworthy
○	○	○	○	○	○	○

Likable

How likable was the author that said, "people should have to pay twice what they currently pay for internet service taxes?"

1. Extremely unlikable	2	3.	4. Neutral	5.	6.	7. Extremely likable
○	○	○	○	○	○	○

Appendix E - Questions Assessing Experience with the Manipulations

How often do people cut you off while you are speaking?

1. Never	2.	3.	4. Neutral	5.	6.	7. All the time
○	○	○	○	○	○	○

How bad does it make you feel when people cut you off while you are speaking?

1. Not at all bad	2.	3.	4. Neutral	5.	6.	7. Extremely bad
○	○	○	○	○	○	○

How often do you cut other people off while they are speaking?

1. Never	2.	3.	4. Neutral	5.	6.	7. All the time
○	○	○	○	○	○	○

How often do you take it personally or get upset when other people disagree with you?

1. Never	2.	3.	4. Neutral	5.	6.	7. All the time
○	○	○	○	○	○	○

How bad do you feel at those times when you take it personally or get upset when people disagree with you?

1. Not at all bad	2.	3.	4. Neutral	5.	6.	7. Extremely bad
○	○	○	○	○	○	○

How often do other people take it personally or get upset when you disagree with them? Even though you didn't intend it that way.

	1. Never	2.	3.	4. Neutral	5.	6.	7. All the time
	○	○	○	○	○	○	○

How bad do you feel when other people take it personally or get upset when you disagree with them? Even though you didn't intend it that way.

	1. Not at all bad	2.	3.	4. Neutral	5.	6.	7. Extremely bad
	○	○	○	○	○	○	○

How often have you had a conversation where you were not prepared to defend your position because you were unaware of, or hadn't thought much about, points supporting the other side?

	1. Never	2.	3.	4. Neutral	5.	6.	7. All the time
	○	○	○	○	○	○	○

How bad do you feel at those times when you are unprepared to defend your position because you were unaware of, hadn't thought much about, points from supporting the other side?

	1. Not at all bad	2.	3.	4. Neutral	5.	6.	7. Extremely bad
	○	○	○	○	○	○	○

How often do you watch movies or tv shows that don't meet your expectations?

	1. Never	2.	3.	4. Neutral	5.	6.	7. All the time
	○	○	○	○	○	○	○

How do you feel when you watch movies or tv shows that don't meet your expectations?

1. Extremely bad	2.	3.	4. Neutral	5.	6.	7. Extremely Good
○	○	○	○	○	○	○

Appendix F - Demographic Questionnaire

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

Political Affiliation
Generally speaking, do you usually think of yourself as a Republican, a Democrat, an Independent, or something else?

○ Republican

○ Democrat

○ Independent

○ Other _____

Appendix G - Debriefing Message

Thank you for participating in this study. This research is looking at the effects that different persuasive messages have on the level of agreement that people have with the author of an counterattitudinal message, in this case internet taxation. The goal of this study is to examine which message influences the highest level of agreement with the author, and the most favorable perceptions of the author.

If you have any questions about this study, you are welcome to contact the graduate student, Lane Banks, at lanembanks@ksu.edu, or the faculty member, Dr. Laura Brannon, at lbrannon@ksu.edu.
If you have any questions about the ethical content of this study, do not hesitate to contact Dr. Rick Scheidt, Chair of Committee Research Involving Human Subjects at 785-532-3224.
Thank you for your participation. Your survey completion code is: XXXXXX Copy and paste this code into MTurk to receive credit for completing our survey. When you have copied your code, click next to submit your survey.