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Moral Matching: Strategic Messaging to Overcome Barriers to Persuasion

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Moral Matching: Strategic Messaging to Overcome Barriers to Persuasion

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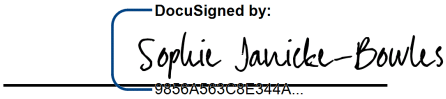

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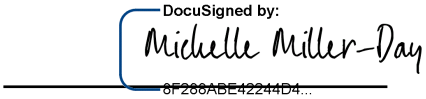

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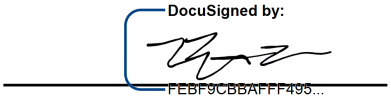

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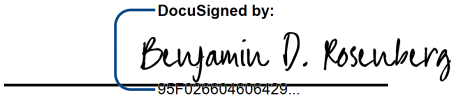

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DEDICATION

This dissertation is dedicated to my parents, Edward and Heidi, whose unwavering support, steadfast love, and moral compass have guided me through each step of my journey. Without you, none of this would have been possible.

I would also like to dedicate this dissertation to my sister and brother-in-law, Rachel, and Dave. Your encouragement and friendship are my most precious gifts in life.

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ABSTRACT

Moral Matching: Strategic Messaging to Overcome Barriers to Persuasion

by Tess M. Buckley

Persuasive messages are often met with resistance. Message fatigue is a unique motivational state caused by excessive exposure to redundant messages, which leads to active and passive resistance towards persuasive messages. The consequences of active and passive resistance are particularly harmful when directed towards messages intended to assist individuals in making health decisions. This dissertation investigated a message framing strategy, moral matching, to combat message fatigue resistance in the context of COVID-19. Guided by message fatigue and moral foundation theory literature, there were three main purposes of this dissertation. The first purpose was to identify what features of COVID-19 health messaging contribute to perceived message fatigue. The second purpose was to reframe this content using moral rhetoric and experimentally test the effects of morally framed messages that match or mismatch an individual's moral foundation on active and passive resistance. The third purpose was to investigate the boundary conditions of moral frames on the message's perceived effectiveness. Using a mixed-method approach, three studies were conducted to accomplish the aforementioned goals. In each study, participants were screened for political affiliation to implement moral matching techniques. Study One, 12 focus groups (N = 53) were conducted to uncover what type of COVID-19 health compliance message participants found most fatiguing and how repeated exposure to these messages evoked passive and active resistance. Results revealed four themes (i.e., overexposure to mask wearing COVID-19 messages, desensitization vs. reassurance, emotional exhaustion, and reactance) that further guided the development of morally framed messages. Study Two (N = 88), conducted a manipulation check to assess the efficacy of the messages. In Study Three, participants (N = 349)

were randomly assigned to see a morally framed (i.e., loyalty or care) or a control COVID-19 health message promoting mask wearing. Results indicated morally matched messages may not combat fatigue, but that mismatched moral messages may lead to unintended consequences such as increased reactance to the message, for some people. In addition, results revealed that message fatigues active and passive resistance routes varied by political affiliation. The findings from this three-study dissertation have implications for developing personalized health campaign messages.

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1.1 Introduction

> [I]t is necessary to have regard to the person whom we wish to persuade, of whom we must know the mind and the heart, what principles he acknowledges, what things he loves; and then observe in the thing in question what affinity it has with the acknowledged principles (Pascal, 1910, p. 408).

Persuasive communication is defined as any message intended to change, reinforce, or shape an individual's attitude or behavior through a shared symbol system (Boster & Carpenter, 2021; Frymier, 2021) and is critical in the field of health communication for influencing positive change in individual and community health-related behaviors (DiClemente et al., 2009). However, persuasive attempts are often met with resistance in which individuals are motivated to "reduce attitudinal or behavioral change or to retain one's current attitude" (Fransen et al., 2015, p. 7). Message fatigue, the perceived overexposure to similar and redundant messages (So et al., 2017), is thought to be a unique motivational force leading to both passive and active forms of resistance and poses a severe threat to long-term health campaigns (Sutton et al., 2020). Although message exposure is necessary for campaign success (Hornik, 2002), and reducing the volume of health messages is often not an option, excessive message exposure can be counterproductive. Message fatigue purports that overexposure to similar, and not necessarily identical, messages endorsing a common overarching health behavior reduces the efficacy of public health campaigns, warranting further investigation of this phenomenon and possible messaging strategies to circumvent feelings of fatigue (So et al., 2017).

Previous research suggests message fatigue leads to habituation (i.e., a decrease in responsiveness as a result of repeated exposure to similar stimuli) and an increase in negative cognitions and counterarguing (Kim & So, 2018). Fatigued individuals are less likely to pay attention to additional awareness, instructional, or persuasive health messages (i.e., passive

resistance). When fatigued, individuals are also more likely to perceive subsequent unwanted messages as a threat to their freedom, eliciting reactance (i.e., active resistance; Ball & Wozniak, 2021; Kim & So, 2018; Reynolds-Tylus et al., 2020). In turn, disengagement and reactance have been shown to reduce subsequent messages' perceived effectiveness (i.e., an assessment of how convincing or persuasive a message is), as well as behavioral intentions toward health recommendations (Kim & So, 2018; Martinez-Gonzalez et al., 2021; Reynolds-Tylus et al., 2020).

These impediments make it difficult for health campaigns to communicate persuasive health messages over an extended period (Sutton et al., 2020). For instance, the adverse effects of active and passive resistance towards COVID-19 health compliance messaging (i.e., social distancing, wearing a mask, getting vaccinated) can result in individuals putting their health, and the health of others, at risk. To date, there is limited research on messaging strategies to combat the adverse effects of habituation and reactance in tandem. However, substantial research indicates that messages framed or adapted to receivers' characteristics are more likely to be attended to and elaborated on, resulting in more effective messaging and persuasive outcomes (Teeny et al., 2020). In political contexts, moral framing, a novel approach to adapting messages to the recipients' attributes, has shown promising effects for increasing the perceived effectiveness of the message and support for the message's appeal (for review, see Feinberg & Willer, 2019). The use of moral appeals in public health campaigns may be especially useful to increase compliance with behavioral recommendations. Because strongly held values and beliefs can heavily influence medical decisions (Karel et al., 2010), a public health message that directly speaks to an individual's values may be highly influential and guide their decision making due to the personal relevance of the frame (Cacioppo & Petty, 1984). Campaigns may use a variety of

appeals and message framing strategies, such as fear appeals (for review, see Maloney et al., 2011), gain/loss frames (for review, O'Keefe & Jensen, 2006), and narratives (for review, see Shen et al., 2015), to encourage healthy behaviors. Understanding the mechanisms and boundary conditions of moral framing opens the possibility to supplement more traditional message strategies in the development of effective long-term campaigns.

Evidence suggests that moral language (e.g., virtue, compassion, fairness, duty, honor) has a unique ability to capture and retain our attention (Gantman & Van Bavel, 2014) and can lead to persuasive effects even when applied to highly controversial and polarizing issues. For example, Feinberg & Willer (2015) found that counter-attitudinal political arguments, that is, arguments an individual does not agree with, framed to appeal to individuals' core morals were persuasive across a broad range of contentious issues (e.g., universal health care, military spending). As a result, I propose that moral rhetoric can overcome habituation and the resultant resistance by energizing people to elaborate on and positively evaluate subsequent messages. Moral appeals that match a person's values elicit positive emotions such as comfort and familiarity (Feinberg & Willer, 2019) and individuals are less likely to perceive redundant messages as tedious if they are personally relevant (Kocielnik & Hsieh, 2017). As a result, positive emotions generated by a morally aligned message may overcome fatigues' resistances, because a moral frame that deeply resonates with a recipient should motivate information processing Given the prevalence and polarization of COVID-19 behavioral health recommendations (Benham et al., 2021; Chan, 2021), this research aims to further investigate the effects of moral appeals in this public health context. Specifically, the current investigation empirically explores the possibility that moral frames can overcome both active and passive forms of resistance associated with message fatigue

Two parallel lines of research find that moral rhetoric is effective when the appeal is framed to match the moral concerns of the recipient, referred to as moral *re*framing (Feinberg & Willer, 2019), or if the audience views the issue through a moral lens, referred to as moral matching (Luttrell et al., 2019). Moral *re*framing studies employ the moral foundation theory (MFT; Haidt & Joseph, 2004) to examine how one moral frame will outperform another based on individuals' fundamental moral values that are contextually relevant to the issue (for review, see Feinberg & Willer, 2015). This line of research contends that an individual is more likely to support an issue that they oppose when the issue is framed to appeal to their preferred moral values that are salient to the issue, compared to a message that does not match their moral values (Feinberg & Willer, 2015). For instance, research indicates that a lack of support for environmental conservation activities could be explained by the persistent framing of messages in moral terms that appeal to liberals more than conservatives (Wolsko et al., 2016). However, when messages are reframed to fit moral concerns that conservatives find particularly important, such as purity, they are more likely to revise their views and increase their support towards the issue (Wolsko et al., 2016). When a persuasive message is reframed to reflect the recipient's values (i.e., a pro-environmental message framed to match conservatives' moral concerns of purity), the recipient is more likely to agree with the message because the frame presents the issue in a new light that resonates with the recipient. In other words, the issue is now perceived to be consistent with their values, eliciting positive emotions and a favorable assessment of the message (Feinberg & Willer, 2019).

A second line of research finds that moral appeals are more persuasive than non-moral appeals to the extent that an individual's initial attitudes are rooted in moral concerns (Luttrell et al., 2019), a phenomenon referred to as attitude moralization (Skitka et al., 2018). In other words,

this suggests that the effectiveness of a moral appeal depends on if the recipient already views the issue through a moral lens (Lutrell & Petty, 2021). Luttrell and colleagues (2019) refer to this strategy as moral matching and contend that *any* moral appeal may be effective if the recipients' attitude towards the issue is moralized. However, I propose that moral matching is most effective when the audience already views the issue through a moral lens, *and* when that moral appeal aligns with their salient moral concerns. A morally matched message should be more effective if an individual believes the issue is inherently a moral issue (i.e., moralization) because the message directly targets the basis of the recipients' attitudes (Luttrell et al., 2019). In contrast, if one does not believe the issue at hand is a *moral issue*, a morally matched message may not be perceived as persuasive because the frame will not resonate with the individual. Given these two mechanisms, this dissertation further explores the boundary conditions of moral rhetoric by posing the question: to what extent does the *type* of moral frame (i.e., which moral foundation is highlighted in the message) and one's attitude base (i.e., moralization) toward the issue interact to influence the persuasion process? Preliminary work suggests that the effects of moral framing on persuasion are moderated by moralization (Luttrell, 2022). In order to investigate moral matchings effects on overcoming persuasion barriers in various contexts, more research is needed to better understand the relationship between a morally framed message and attitude moralization. The current investigation extends the previous research on moral matching by examining its effects beyond attitude change to overcoming persuasion barriers (i.e., message fatigue) and by clarifying the role personal attitudinal characteristics (i.e., moralization) play in the persuasion process.

Thus, guided by the moral foundation's theory (Haidt & Joseph, 2004), this dissertation further investigates the impact of moral framing in the context of health messaging directed at promoting compliance with COVID-19 prevention measures. Specifically, it seeks to: (1)

identify the type of COVID-19 health messaging contributing to perceived message fatigue, (2) reframe this content using moral rhetoric to experimentally test the effects mitigating fatigues passive and active routes of resistance through moral matching, and (3) further investigate the boundary conditions of moral appeals and their perceived effectiveness. An overview of message fatigue, moral foundation theory, and the effects of moral framing are provided in the following sections. Following the literature review is a discussion of the three-Study mixed methodological rationale and design to empirically investigate test the effects of moral framing in the context of COVID-19 health compliance messages.

1.2 Literature Review

1.2.1 Message Fatigue

A long-standing misconception is that more communication leads to more productive conversations or desired outcomes. Communication studies research consistently shows that excessive communication can be counterproductive and lead to ineffective or unintended outcomes (McCroskey, 1977). Built upon previous research on message wear out (Cacioppo & Petty, 1989; Calder & Sternthal, 1980), message fatigue is an emerging area of scholarship that highlights the complexity of this misconception (So et al., 2017). Message fatigue is conceptualized as "an aversive motivational state of being exhausted and bored by overexposure to similar, redundant messages over an extended period of time" and comprises four dimensions: perceived overexposure, perceived redundancy, exhaustion, and tedium (So et al., 2017, p.10). The four dimensions of message fatigue are separated into two factors , the first focusing on the message environment (e.g., overexposure and redundancy) and the second on the audience response (e.g., exhaustion and tedium). In their seminal work, So and colleagues (2017) differentiate between *acute* and *chronic* message fatigue. *Acute* fatigue results from exposure to

the same message in a relatively short period of time (e.g., in one sitting) and has been largely studied in advertising research. More concerning to public health officials and communication scholars is *chronic* fatigue, which takes place after exposure to similar messages throughout an extended period of time.

Message fatigue has its roots in the work of psychologist Zajonc's (1968) mere exposure effect, which proposes that familiarity from repeated exposure to a stimulus leads to increased pleasure and liking. Central to So and colleagues (2017) conceptualization of message fatigue is Berlyne (1970) and Stang's (1974, 1975) work, which stemmed from Zajonc's mere exposure effect and discovered a threshold of exposure frequency on liking. Berlyne (1970) and Stang (1974, 1975) found an inverted-*U* shaped relationship between familiarity and liking, suggesting that familiarity increases liking until a peak is reached, after which point repeated exposure decreases liking. Although theoretically aligned with message fatigue, this work falls under So and colleagues (2017) characterization of *acute* fatigue, since participants in these experiments were often exposed to the same stimuli in one sitting rather than similar types of stimuli over an extended period of time (i.e., chronic message fatigue).

Communication scholars are beginning to comprehend and generate knowledge on the consequences of chronic repeated exposure to persuasive messages. The assumption underlying public health concerns regarding message fatigue is that the more fatigued individuals are, the less effective health promotion messages will be. Indeed, pre-existing message fatigue has been linked to several unfavorable persuasive outcomes, such as less attention and elaboration towards subsequent messages (So et al., 2017), negative attitudes towards the issue (So & Popova, 2018), decreases in behavioral intensions (Kim & So, 2018), increase in counterarguing (So & Alam, 2019), and a decrease in perceived messages effectiveness (Reynolds-Tylus et al., 2020).

Building off the work of So et al., (2017), Kim and So (2018) propose that message fatigue leads to two different kinds of resistance: passive (i.e., inattention) and active (i.e., reactance) resistance towards additional messages individuals are tired of hearing about.

1.2.1.1 Active and Passive Resistance

Inattention is thought to be a passive form of resistance, as it refers to a state of disengagement towards subsequent messages or stimuli. In particular, So et al. (2017) and So & Kim (2018) posit that when unwanted and unsolicited message exposure stems from the message environment (i.e., overexposure and redundancy dimensions), individuals will resist by simply withdrawing their attention from the unsolicited message. Drawing from coping research (Lazarus & Folkman, 1984), they argue "when one doesn't feel capable remedying the undesirable situation, one may deal with the situation by simply avoiding the undesirable situation" (Kim & So, 2018, p. 111). Indeed, So et al. (2017) found that higher levels of perceived message fatigue were related to message avoidance across two different health contexts. Additional research has found that message fatigue leads to inattention (Reynolds-Tylus et al., 2020; So, 2021), which in turn leads to lower perceived message effectiveness (Martinez-Gonzalez et al., 2021). This inattention also results in decreases in behavioral intensions (Guan et al., 2022), lending credence to passive resistance. Thus, message fatigue leads to a strong desire to avoid additional messages, resulting in ineffective persuasive outcomes.

Conversely, reactance is the active form of resistance, drawing from psychological reactance theory (PRT; Brehm, 1966; for review, see Rosenberg & Seigel, 2018). PRT posits that when one is exposed to a message that they are tired of hearing about, they will perceive the message exposure as a threat to their freedom (So, 2021; So & Kim, 2018). According to PRT

(Brehm, 1966), when an individual feels as though their autonomy to engage in a free behavior is being threatened through external influences, they become motivated to restore it. Reactance is a motivational state which encompasses negative cognitions and emotions (e.g., anger) directed towards the influence attempt. Reactance is the central explanatory mechanism of the theory and results from the assumption that individuals place a high value on autonomy, choice, and personal control.

Reactance motivates individuals to re-establish their autonomy and sense of control. Freedom restoration behaviors may include performing the threatening or eliminated behavior, increasing liking for the threatened behavior or choice (Brehm., 1966), disparaging the source (Kohn & Barnes, 1977), exercising another free behavior, or regaining a sense of control (Wicklund, 1974). Within the message fatigue literature, reactance has been shown to mediate the link between fatigue and resistance to anti-obesity messaging (Kim & So, 2017) and bystander interventions (Reynolds-Tylus et al., 2020). In the context of message fatigue, which explores both the active and passive (i.e., inattention) routes of resistance on persuasive effects, research has focused on outcomes such as behavioral intentions (Kim & So, 2018), attitude (So & Alam, 2019), and perceived message effectiveness (Martinez-Gonzalez et al., 2021; Reynolds-Tylus et al., 2020), as opposed to the freedom restoration behaviors mentioned above.

In their original work on active and passive resistance, Kim and So (2018) did not examine the role of freedom threat in their operationalization of reactance. Although they posited that reactance is caused by a threat to one's freedom due to unsolicited message exposure, their model focused on anger and negative cognitions only (Dillard & Shen, 2005). As such, Kim and So (2018) found inattention (i.e., passive resistance) was a more prominent mechanism leading to decreased behavioral intensions than reactance (i.e., active resistance). Subsequent research

extended their work to be more in line with Brehm's (1966) original conceptualization of psychological reactance and included freedom threat in the active resistance process (Martinez-Gonzalez et al., 2021; Reynolds-Tylus et al., 2020). When modeling psychological reactance as a two-step process from perceived freedom threat followed by reactance, they found that active resistance led to a decrease in perceived message effectiveness, while inattention did not (Reynolds-Tylus et al., 2020). However, these contradictory findings must be interpreted considering the contexts under investigation as well as the demographic makeup of the samples (Kim & So, 2018; Reynolds-Tylus et al., 2020). As such, subsequent research has found that, following perceived freedom threat, inattention (but not reactance) led to a significant decrease in perceived message effectiveness (Martinez-Gonzalez et al., 2021). Taken together, message fatigue can lead to ineffective persuasion outcomes through inattention (e.g., passive resistance), and a threat to one's freedom, triggering reactance (e.g., active resistance).

To date, there is limited research that investigates message design strategies to alleviate the adverse effects of *chronic* message fatigue. Although well intended, research that has attempted to alter message features to capture attention as well as elicit positive attitudes has failed, due to their surface-level approach to message design that failed to speak to the core convictions and beliefs of the audience (Keating & Galper, 2021). Additionally, this work solely focuses on mitigating passive forms of resistance (i.e., inattention) and did not explore message features to combat both active and passive routes. For example, a recent study by Keating and Galper (2021) investigated the impact of utilitarian functional matching on message fatigue and message processing regarding electronic cigarettes. Someone who holds a utilitarian attitude is concerned with how an attitude will improve their quality of life, maximize rewards, and limit costs. Regarding persuasive appeals, utilitarian matching takes place when a message content

matches an individual's attitude towards the function driving the recipient's attitude. For example, if an individual holds a negative view toward e-cigarettes because they believe that e-cigarettes contain harmful chemicals and they encounter a persuasive message highlighting the addictive and harmful substances in e-cigarettes, utilitarian functional matching will occur. This will result in more favorable evaluations of the persuasive appeal. However, Keating and Galper (2021) found that utilitarian functional matching did not mitigate inattention or annoyance towards the message. Keating and Galper (2021) posited that this matching approach may have led participants to make snap judgments, or automatic evaluations of the message and its content, regarding health messages they have seen before. Since the message highlighted themes that participants had previously been exposed to, it led to automatic and heuristic information processing.

Although heuristic processing can lead to persuasive effects, attitude change resulting from heuristics is less stable and weakens over time (Petty & Cacioppo, 1986). In addition, during a health crisis like COVID-19, where information is consistently being updated, it is particularly important for health messages to foster careful consideration of health information to keep individuals informed. Heuristic processing of additional health messages may lead to temporary attitude and behavior change; however, elaboration is important to sustain health compliance over an extended period of time. Kocielnik and Hsieh (2017) found more promising results in their experiment using message diversification strategies to remind individuals to remain physically active. They sent participants strategic messages that matched their desires and values (e.g., stress reduction or enhanced physical appearance) over a two-week period. Receiving personally relevant messages reduced annoyance and boredom and increased behavioral compliance towards multiple messages reminding participants to stay physically

active. However, these promising results did not directly examine messages fatigue. Thus, given the counterproductive persuasive effects message fatigue poses on health promotion (Reynolds-Tylus et al., 2020; So, 2021; So & Kim, 2018), additional research is needed to test message framing strategies that can overcome both the active and passive routes of resistance.

1.2.2 Message Framing and Personalized Matching

In persuasion research, message features refer to the message content, structure, or style and their effects on the desired outcome variables, such as attitude, intention, or behavior (Shen & Bigsby, 2013). Central to the field of communications studies, the study of message features differentiates *communication* research within the field of persuasion from other complementary disciplines such as psychology. As Dillard & Pfau (2002) state, “questions concerning how messages might be designed to produce the greatest suasory impact lies at the very center of persuasion research” (p. xvi). Message content, such as the type of evidence used, whether the message refutes an opposing side, language choice (e.g., powerful vs. powerless language), logical vs. emotional appeals, and the use of metaphors/narratives are all common message features investigated in persuasion research (Shen & Bigsby, 2013). In the field of health communication, research on the efficacy of various message frames, and the types of appeals used within the message, has received substantial attention (Gallagher & Updegraff, 2012; Maloney et al., 2011).

The term "message framing" refers to a variety of strategies for presenting information or structuring information in a message in order to increase an individual's motivation to comply with a request (Smith & Petty, 1996; Wilson et al., 1988). For instance, gain and loss framing, as well as fear appeals, are common message strategies within health communication literature that highlight the positive or negative outcomes of compliance or noncompliance (Guenther et al.,

2021; Wilson et al., 1988). Extent literature applying these frames has found supporting (Gallagher & Updegraff, 2012; Maloney et al., 2011) as well as contradictory evidence of their effectiveness (Gallagher & Updegraff, 2012; Tannenbaum et al., 2015). However, the current investigation is particularly interested in a subset of message framing used in the broader persuasion literature, personalized matching, which is an effective and reliable stylistic message strategy for increasing the effectiveness of a persuasive appeal (Teeny et al., 2020).

Rather than framing a message to highlight a particular consequence, as with gain and loss framing or fear appeals, personalized matching entails matching either the message content, source, or context to a personal characteristic of the receiver (Teeny et al., 2020). Of particular interest to the current research is matching the message *content* to the recipient (Petty et al., 2000). This framing or 'matching' approach is also referred to as segmenting, customizing, targeting, and tailoring (Kreuter & Wray, 2003; Larkey & Hecht, 2010; Webb et al., 2013). The approach is used to increase both attention to and cognitive processing of the message, thereby increasing the persuasive impact of the message (Hawkins et al., 2008). The level of specificity in the match exists on a continuum, ranging from simply using an individual's name in the persuasive appeal to framing the message to speak to the broader personal characteristics of the recipient (Kreuter & Wray, 2003). For example, messages can be matched to a recipients' goals and motivation, dominant personality trait, cultural orientation, or attitude function (Teeny et al., 2020).

The latter of these approaches, matching the content of a message to the function of an individual's attitude, known as functional matching, stems from Katz's (1960) functional attitude theory. This model posits that people change and develop attitudes to satisfy certain psychological needs, purposes, and goals. Katz (1960) boldly claimed that "unless we know the

psychological need which is met by the holding of an attitude, we are in a poor position to predict when and how it will change" (p. 170). Katz proposed four attitude functions; first, the *utilitarian function* suggests individuals strive to maximize rewards and minimize penalties, therefore, they help individuals remember what brings them pain vs. pleasure and know what objects to approach or avoid (Carpenter, 2012; Katz, 1960). The *ego-defensive function* serves to protect one's sense of self and self-esteem from threats. For instance, Katz argued that individuals who hold negative opinions of minority groups did so to inflate or maintain their sense of superiority. Next, the *knowledge function* helps individuals make sense of the world and their surroundings. Lastly, attitudes may hold a *value expressive function*, meaning that an individual will hold a particular attitude to express and communicate what is important to them (Katz, 1960). The persuasive effects of matching a message's appeal to an individual's attitude function have been supported across contexts, such as consumer advertising (Snyder & DeBono, 1985) and health messaging (Hullett, 2004). Functional matching works by increasing attention paid to the message resulting in stronger recall of persuasive arguments (Crano & Prislin, 2008), thus enhancing message scrutiny (Petty & Wegener, 1998). Importantly, functionally matched arguments are perceived to be of higher quality than non-matched arguments, which mediates the relationship between functional matching and persuasive effects (Lavine & Snyder, 1996).

A novel approach to message framing and matching, that aligns with Katz's (1960) approach to functional matching and specifically the value-expressive function, entails positioning a persuasive appeal to one's moral bases (Teeny et al., 2020). For example, a consumer may prefer to purchase locally grown produce because they believe it is an ethical choice (i.e., moral base). However, one might also choose to purchase the locally grown produce because they oppose harming nature or because they want to support local businesses. Each

decision to buy locally grown produce is rooted in a different moral conviction. The more a persuasive appeal aligns with an individual's preferred moral bases, the stronger the persuasive effects (Feinberg & Willer, 2015).

Conceptually, moral matching and Katz's value of expressive function seem indistinguishable. However, literature utilizing moral matching is often guided by Haidt and Joseph's (2004) moral foundation theory, which proposes five universal moral foundations that individuals base their decisions and attitudes on: *care/harm, fairness/cheating*, *loyalty/betrayal*, *authority/subversion*, *purity/degradation.* Values are abstract ideas that individuals consider important guiding principles in their lives (Schwartz, 1992), while morals, as conceptualized by Haidt and Joseph (2004), are "are interlocking sets of values, virtues, norms, practices, identities, institutions, technologies, and evolved psychological mechanisms that work together to suppress or regulate selfishness and make cooperative social life possible" (p. 70). Thus, I argue that Katz's (1960) value-expressive function provides a theoretical rationale for why moral matching is an effective strategy to modify attitudes and overcome resistance to persuasive attempts. Additionally, moral foundation theory provides researchers with specific moral foundations to measure, identify, and target, which has been a limitation of applying the value-expressive function within the functional matching literature (Hullett, 2002).

1.2.3 Moral Foundation Theory

Moral foundation theory (MFT; Haidt & Joseph, 2004) seeks to explain how morality can vary cross-culturally yet still encompass common themes and similarities. MFT maintains that morality is both innate and determined by environmental influences and that the extent to which certain moral foundations are used to form judgments and decision-making varies between individuals and cultures (Graham et al., 2013). Cultures construct their virtues, narratives, and

institutional structures around these moral values, and research demonstrates that individuals ground their social and political attitudes and behaviors upon these foundations (Haidt & Graham, 2007). Specifically, Haidt and Joseph (2004) surveyed taxonomies of morality from psychology, anthropology, and the evolution of primate sociality and identified five virtues that they argue are the psychological foundation upon which cultures construct their moral systems (Graham et al., 2013). Individuals and cultures, Haidt and Joseph (2004) argue, are constructed and guided by moral foundations such as *care/harm, fairness/cheating*, *loyalty/betrayal*, *authority/subversion*, and *purity/degradation.* MFT theory asserts that each foundation evolved to serve an adaptive function, making them innate as well as further refined and shaped through social learning. Importantly, MFT does not attempt to identify a comprehensive taxonomy of moral values that appear in all cultures, but rather to "identify the best candidates for being the *psychological foundations* upon which cultures create their moral systems" (Graham & Haidt, 2009, p. 111).

1.2.3.1 The Five Moral Foundations

The *harm/care* foundation refers to the basic concern of caring for others, empathizing with others, and preventing harm and suffering. This foundation has evolutionary roots in the adaptive challenges of caring for an offspring, or for vulnerable children, and is characterized by feelings of compassion and showing kindness to others. The *fairness/cheating* foundation rests on concerns of unfair treatment, justice, and equality. The evolutionary adaptive challenge of reaping rewards for cooperating with others while avoiding being exploited makes us sensitive to the concepts of justice and inequality. The *loyalty/betrayal* foundation prioritizes group loyalty, such as self-sacrifice, and values patriotism. The evolutionary adaptation to form and maintain coalitions results in increased sensitivity to betrayal and a preference for putting the group first.

The *authority/subversion* foundation focuses on social order, hierarchical relationships, obedience, properly adhering to one's role, and values tradition. The evolutionary process of fashioning beneficial relationships and alliances makes us sensitive to status, rank, and behaving in accordance with one's position in the hierarchy. Last, the *purity/degradation* foundation focuses on disgust for contamination, cultural sacredness, and the desire to live in an elevated and noble way. This foundation is rooted in a broad evolutionary adaptive challenge of avoiding pathogens, parasites and other threats that are spread by proximity and physical touch (Graham et al., 2013; Haidt & Joseph, 2004).

The moral foundations described above are not intended to be individual-level traits, but rather psychological systems upon which cultures build in various ways (Haidt et al., 2009). Haidt explicates the paradox of how these moral foundations are universal yet differ in the extent to which they are relied upon within cultures by using the analogy of taste receptors, asserting that "everyone has them, yet 'cuisines' differ around the world" (Haidt et al., 2009, p. 112). The development of moral foundations binds individuals together into cooperative and well-functioning groups. However, certain moral foundations can become so deeply ingrained in people that they become blind to the moral difference embedded in other people's attitudes and decisions. As a result, people may dismiss or feel threatened by opposing views (Heidt & Kesebir, 2010).

1.2.3.1.1 Moral Foundations and Political Ideology

Although MFT was created to understand how moral intuitions vary cross-culturally, the five foundations closely map onto the two sides of the left/right ideological paradigm in America (Haidt & Graham, 2007), shedding light on the increasingly high levels of polarization across the United States (Heltzel & Laurin, 2020). The pattern uncovered throughout the literature suggests

that self-identified liberals strongly endorse the *care* (protection from harm) and *fairness* (reciprocity and maintenance of proportionality) foundations (Haidt & Graham, 2007; Haidt et al., 2009). Graham and Haidt (2010) refer to these as the *individualizing foundation* because their focus is on the rights and welfare of individuals. Conversely, self-identified conservatives tend to score equally high on all foundations yet agree more with moral statements that emphasize *authority* (respect for tradition and authority), *purity* (protection and promotion of sanctity), and *loyalty* (prioritizing one's ingroup) more than liberals (Graham et al., 2009). These *binding foundations* emphasize group loyalty, duty, and self-control (Graham & Haidt, 2010). In addition to the strong correlation between moral foundations and ideology, research shows that individuals who endorse the individualizing foundations tend to vote for Democratic candidates, while those that endorse the binding foundations vote for Republican candidates (Enke, 2020; Franks & Scherr, 2015).

Graham and colleagues (2009) further demonstrated the differences between these moral foundations and political ideology by asking liberals and conservatives to rate how willing they would be to violate each of the five moral foundations for money. Consistent with the pattern above, liberals were less likely to violate the individualizing foundations (i.e., care and fairness) but more willing to partake in actions that violated the binding foundations (i.e., loyalty, authority, and purity; Graham et al., 2009). Contrarily, conservatives were less willing to act in ways that violated binding foundations (i.e., loyalty, authority, and purity; Graham et al., 2009). Of particular interest to communication scholars, upon investigation of religious texts, Graham et al. (2009) found that liberal and conservative religious leader sermons used words and phrases that aligned with the values of the moral foundations they tend to endorse. The tendency to ground an argument in one's own moral values, as opposed to the moral values of the person

whom they wish to persuade, was found among political advocates across a variety of controversial issues (Feinberg & Willer, 2015). For example, when asked to construct an argument in support of same-sex marriage, liberal-leaning participants were more likely to rely on the care and fairness moral foundations to construct their arguments (e.g., "why would we punish these people for being born a certain way?"; Feinberg & Willer, 2015, p. 1668). These findings were replicated among conservative participants across a range of issues (Feinberg & Willer, 2015).

It is critical to note that the emphasis on individualizing and binding moral foundations is greater among individuals who self-identify as 'strongly-liberal' vs. 'strongly-conservative' (Graham et al., 2009; Haidt et al., 2009). More specifically, individuals who hold a strong liberal ideology tend to ground their political principles in notions of social justice and nurturance (i.e., care and fairness foundations) while those with a strong conservative ideology tend to ground theirs in patriotism and traditionalism (i.e., loyalty, authority, and purity foundations; Graham et al., 2009; Haidt et al., 2009). Understanding the moral differences between ideologies can help explain why political and health-related persuasive appeals are effective, ineffective, or even backfire with specific individuals and subcultures.

1.2.3.2 Moral Framing and Persuasion

Moral foundation theory sheds light on the moral tensions that exist between political orientations and sparked a line of persuasion research devoted to bridging ideological divides via moral *re*framing (Feinberg & Willer, 2019). Moral framing refers to when a persuasive message or storyline is grounded in moral concerns (Feinberg & Willer, 2019; Lakoff, 1996, 2004), and is an effective tool for persuasion, namely in political discourse (Barker, 2005; Feinberg et al., 2019; Lakoff, 2004). As such, within the political arena, moral *re*framing involves arguing for a

political position that members of a political group do not traditionally support in terms of moral values and concerns that a group ascribes to (Feinberg & Willer, 2019). In other words, moral reframing aims to "transform positions that would otherwise seem morally wrong to an audience, into something morally acceptable or even desirable" (Feinberg & Willer, 2019, p. 3). For example, a line of research in environmental messaging demonstrates the effectiveness of using moral foundations in persuasive appeals to attract audiences historically opposed or indifferent to climate change propaganda (Feinberg & Willer, 2013; Feygina et al., 2010; Hurst & Stern, 2020; Kidwell et al., 2013; McCright et al., 2016; Wolsko et al., 2016). Specifically, in the United States, environmental messaging often emphasizes the individualizing foundations (i.e., harm and care) that largely align with liberal perspectives. Feinberg & Willer (2013) *re*framed environmental messages using language that matched conservative's bindings foundations (i.e., purity, loyalty, and authority), which they found "largely eliminated the difference between liberals' and conservatives' environmental attitudes" (p. 56). Reframing cultural issues with language that matches one's innate moral intuitions is an effective strategy to improve communication between opposing ideological groups and increase the effectiveness of persuasive appeals by directly targeting those that disagree with the advocated stance (Feinberg & Willer, 2019).

It is common for political appeals, health messages, and public service announcements to highlight either the binding or individualizing moral foundations (Feinberg & Willer, 2019). Individuals experiencing vaccine hesitancy, for example, often hold in high regard the binding foundation of purity, as opposed to harm or fairness (i.e., individualizing foundations), which are commonly used to frame vaccine promotional messages (Amin et al., 2017). Consequently, persuasive appeals encouraging vaccination are speaking past their intended audience to those

that are already in compliance with the health recommendation. Given that persuasion research demonstrates the critical importance and increased effectiveness of aligning an argument or message frame with an individual's deeply held values (Teeny et al., 2020; Watt et al., 2008), it is not sufficient to merely frame a message in moral terms; the message must align with the recipient's moral foundations.

Particular moral foundations may be more relevant than others within a given context. As previously stated, the moral concern of purity is salient for those who are vaccine-hesitant (Amin et al., 2017); thus, a frame that uses the purity foundation to promote vaccination would be advantageous. As demonstrated throughout the moral reframing literature, this strategy has been effective across a range of political issues (Bloemraad et al., 2016; Feinberg & Willer, 2015; Franks & Scherr, 2019), as well as health-related concerns, such as COVID-19 mask guidelines (Kaplan et al., 2021). Kaplan and colleagues (2021) discovered that anti-mask beliefs were associated with conservatives' moral foundations of loyalty and national identity, and they were successful in reducing anti-mask beliefs after framing a pro-mask message to resonate with these moral concerns. Suggesting that moral "matching" may be limited by which foundation(s) correspond to the audience's moral convictions *and* are contextually relevant.

In addition to the vast support for the persuasive effects of moral reframing, Day et al. (2014) found support for an *entrenching* effect when relevant moral foundations were presented in a pro-attitudinal message. For instance, when conservatives were exposed to a message that took a typical conservative stance on the economy and immigration and was framed by authority, loyalty, and purity (i.e., binding) moral foundations, their attitudes strengthened, thereby bolstering their conservative views. Day et al. (2014) found the same effect for liberals exposed to typical pro-attitudinal liberal stances framed by the care and fairness (i.e., individualizing)

moral foundations. In addition to this bolstering effect, research suggests that the moral frame may be irrelevant if the audience already agrees with the issue or message's appeal. For example, Feinberg and Willer (2015) found liberals showed similar levels of support for universal healthcare whether the message highlighted the binding or individualizing moral foundations. They found similar results for conservatives' support for increased military spending. However, this may be attributed to a ceiling effect and additional research is needed on issues that are less polarized (Feinberg & Willer, 2019).

1.2.3.2.1 Moral Framing Mechanisms

The primary explanation for the efficacy of moral reframing is the perceived "match" between the recipient's moral conviction and the argument's appeal (Feinberg & Willer, 2019). When there is a discrepancy between the moral frame of the message and the moral foundation of the receiver, the persuasive appeal may be less effective (Gadarian & van de Vort, 2018). Thus, as supported by the literature on personalized matching, framing a message in terms of moral values or concerns seems to be most effective when the moral frame matches the moral foundation(s) of the recipient (Teeny et al., 2020). Indeed, Feinberg and Willer (2015) found that the perceived fit between one's moral foundation and the reframed arguments was the driving force behind the persuasive effects. Furthermore, this perceived match may elicit feelings of comfort and familiarity, making the message clear and relatable (Gantman & Van Bavel, 2014), as well as trustworthy, possibly signaling that the message comes from an ingroup member (Wolsko et al., 2016). In fact, Hurst and Stern (2020) found that when conservatives were presented with a morally *re*framed environmental message, they responded positively, especially when the message came from a conservative source. However, conservatives were more likely to support a Democratic presidential candidate when they appealed to the individualizing

foundations of patriotism and authority (Voelkel & Willer, 2019). Thus, morally matched rhetoric may be an effective strategy for outgroup members, provided the source is not particularly despised (Kahan, 2016).

Finally, moral arguments may be more persuasive if they elicit an emotional response from the recipient. For example, research indicates that different moral foundations correspond to distinct moral emotions, such as disgust and the purity foundation (Horberg et al., 2011). Feinberg and Willer (2013) discovered that the efficacy of a purity-based environmental argument in changing conservatives' attitudes was mediated by a sense of disgust experienced while reading the argument (e.g., “pollution in our environment inevitably contaminates us and our bodies”). Each moral foundation has corresponding emotional characteristics that are part of the “output of each foundation, at least when the foundation is activated very strongly” (Haidt, 2012, p. 147). For example, the moral foundation of care is associated with the emotional output of compassion, while loyalty is characterized by feelings of group pride. Thus, a message may be effective if it successfully activates a moral foundation and its corresponding emotions.

1.2.3.2.1.1 The Impact of Moral Language

Research across psychology and communication science suggests moral language and content capture our attention (Gantman & Van Bavel, 2016), are more likely to be virally shared online (Brady et al., 2020), and can further reinforce one's values and perspective after repeated exposure to agreeable moral content (Tamborini, 2013). Tamborini's (2013) model of intuitive morality (MIME) provides a framework for understanding how a culture's media reinforces its moral values. Notably, they contend that people interact with moral media content that confirms their moral convictions. Individuals are more likely to identify moral words (e.g., obey, duty, law), over non-moral words when they are flashed on a screen (Gantman & Van Bavel, 2014).

This phenomenon, coined the "moral pop-out effect," suggests moral words tend to grab our attention even when they are perceptually ambiguous (Gantman & Van Bavel, 2016). Although the moral pop-out effect suggests any moral language can grab our attention, media research finds individuals are more likely to share and interact with online content that reflects their moral values (Brady et al., 2020; Sterling & Jost, 2018). In a sample of 11 million tweets, for example, liberals were more likely to use language expressing moral ideals of justice, whereas conservatives used language expressing moral values of loyalty, authority, and purity (Sterling & Jost, 2018). In their model of moral contagion (MAD) Brady et al. (2020) argue that moral and emotional content is highly contagious and "captures our attention because it fulfills our goals and helps us learn about our social world" (Brady et al., 2020, p. 747). Notably, research also suggests that moral reasoning leads to increased neurological activity in the brain's reward system (Fang et al., 2017). Taken together, this research suggests that moral language and messages are effective by way of capturing our attention and are intrinsically rewarding by helping us navigate our social world.

1.2.4 Moralization

When attempting to persuade others, it is critical to investigate attitude strength-related characteristics: stronger attitudes are more resistant to persuasion, influence information processing, and frequently guide behavior (Krosnick, 1988; Krosnick & Petty, 1995). Persuasion researchers have uncovered numerous antecedents that predict attitude strength, including accessibility, certainty, importance, elaboration, knowledge, and moralization. These strength-related attributes are traditionally used to measure and predict attitude strength (Luttrell & Sawicki, 2020), each having an independent effect on attitude and behavioral outcomes (for review, see Visser et al., 2006). Of particular interest to the current investigation is attitude

moralization, the sense that one's attitude is connected to their core moral values and beliefs and is related to what people perceive to be fundamentally right or wrong (Skitka et al., 2005; Skitka, 2014).

Research on attitudes and attitude change recognizes the importance of understanding one's moral basis for their attitudes. Attitudes with a moral base seem to be stronger (vs. attitudes without a moral base) in that individual have more knowledge about the attitude object and hold them with greater certainty, making them less likely to be compromised (Skitka et al., 2005; Tetlock et al., 2000). Thus, attitudes rooted in one's core morals are more durable, stable over time, and influence behavior more so than attitudes not rooted in moral convictions (Luttrell & Sawicki, 2020). For example, Skitka et al. (2005) found that attitudes rooted in moral convictions are related to more attitude–behavior correspondence. This finding is in line with Katz's (1960) value of expression function of attitudes, in that moral attitudes are used to express an individual's core values. Moreover, moral attitudes differ from strong but "nonmoral" attitudes due to their strong ties to emotion and behavioral reactions, such as a reduced willingness to conform to the majority (Skitka, 2014).

1.2.4.1 Moralization and Moral Messages

Although attitudes based on one's morals tend to be stronger, moral rhetoric may undermine attitude strength by highlighting how an issue is inherently immoral (Luttrell et al., 2019) or by reframing the position to showcase how it aligns with one's preferred moral stance (Feinberg & Willer, 2013, 2015, 2019). For example, Luttrell and colleagues (2019) examined the effects of moral vs. non-moral messages on influencing participants' opinions towards recycling and marijuana legalization. They found that a general moral appeal (i.e., not framed to match the recipient's moral foundation) was more persuasive than a non-moral appeal to the

extent that a participant's initial attitudes were based on moral concerns (i.e., moralized), a phenomenon they refer to as moral matching (Luttrell et al. 2019). More recently, in the context of COVID-19, Lutrell and Petty (2020) found that "other-focused" moral messages advocating for social distancing (i.e., stay at home to protect others in your community) were persuasive among people who initially viewed public health as a moral issue. However, Luttrell and colleagues (2019; Luttrell & Petty, 2020) analyses did not examine how *different* moral frames, specifically ones that are matched or mismatched to the receipt's moral foundations, interact with moralized attitudes. Therefore, in line with the reframing literature, I argue that moral matching should be more effective if the moral message also matches an individual's moral foundation. Luttrell and colleagues (2019; Luttrell & Petty, 2020) did not use the moral reframing approach to investigate the impact of a specific moral frame or foundation. Rather, they created messages stating that supporting a specific issue was the *morally* right thing to do and listed a variety of broad moral reasons to support the argument. The current investigation extends Luttrell et al.'s (2019; Luttrell & Petty, 2020) conceptualization of moral matching by arguing that when an individual's attitude is morally grounded *and* they are exposed to a message that matches their moral foundation, the message should be perceived as highly effective and persuasive.

The work of Luttrell and colleagues (2019; Luttrell & Petty, 2020) offers interesting insight into the role moral conviction plays in moral rhetoric. Their findings suggest that moralized attitudes are more resistant to change only when presented with non-moral arguments (Luttrell et al., 2019; Lutrell & Petty, 2020). Yet, when presented with a moral argument, individuals may be willing to consider an opposing argument when it is rooted in morality, even if the moral argument differs from their own. Again, in line with the reframing literature, the effectiveness of the moral appeal may depend on the specific moral concerns (i.e., foundations)

being targeted. Preliminary data suggests that the persuasive effects of moral reframing are moderated by moralization (Luttrell, 2022). These findings suggest that when individuals have a relatively moral basis for their attitudes and are exposed to a persuasive message that aligns with their salient moral foundations, favorable persuasive outcomes such as positive message evaluations and increased behavioral intentions occur. Although, additional research in this area is needed to clarify the relationship between moralization and moral frames on persuasion. Thus far, moralization and moral messaging research have primarily focused on the impact a general moral frame has on one's attitude and attitude strength (Kodapanakkal et al., 2022; Luttrell et al., 2019). Yet, for those that view an issue as inherently moral, the question remains: is *any* moral argument perceived as more effective than a non-moral argument, or is a moral argument that matches their core moral convictions perceived as stronger? Drawing from the literature on reframing and moralization, the present study uses the term "moral matching" to refer to the persuasive effects of a message that aligns with receipts' moral foundation *when* their attitudes are morally grounded.

Although moral messages and moral reframing have been shown to change attitudes on controversial topics (Feinberg & Willer, 2013, 2015, 2019), suggesting that these strategies can help bridge moral, cultural, and political divides (Feinberg & Willer, 2015), some research suggests that moral rhetoric may have unintended consequences (Kodapanakkal et al., 2022). Moral messages have been shown to reinforce moralization of attitudes (Luttrell & Petty, 2020), reducing individuals' willingness to compromise with those who hold opposing views. (Kodapanakkal et al., 2022). Therefore, moral rhetoric may have the ability to both bolster and change individuals' attitudes (Day et al., 2014), and further investigation of this topic is warranted.

1.2.5 Future Directions of Moral Messaging and Persuasion

Literature on the influence of moral appeals on the persuasion process posits that moral messages are effective if the moral appeal matches the salient moral foundations of the audience (Feinberg & Willer, 2019) and if the audience has a preexisting moral basis for their attitude (Luttrell et al., 2019; Luttrell & Petty, 2020). However, research employing moral rhetoric has found inconsistent support for its ability to alter attitudes (Day et al., 2014; Feinberg & Willer, 2019), which could be attributed to a variety of factors. Thus, additional research is required to gain a better understanding of the relationship between moral appeals and moralization, as well as the effect of moral messages on barriers to persuasion.

First, mixed support for moral messages may be attributed to how crystalized a participant's attitudes are prior to message exposure, resulting in a ceiling effect (Feinberg & Willer, 2019). Additionally, using a broad moral frame (i.e., moral content that appeals to people across the political spectrum) rather than one that aligns with the salient moral values of the target audience may reduce the effectiveness of the moral message (Luttrell et al., 2019). Along these same lines, using *any* moral frame that aligns with a particular group (e.g., purity frame for conservatives) may be less impactful than a moral frame that is perceived to be relevant and of concern to the audience. For example, anti-mask beliefs have a stronger association with concerns for loyalty (Kaplan et al., 2021), while vaccine hesitancy is rooted more in purity concerns (Amin et al., 2017). In this context, a vaccine message appealing to purity concerns by emphasizing how vaccines keep us pure from viral contamination may be more effective than a loyalty or authority frame. Lastly, the efficacy of a moral appeal may depend on the extent to which the audience views the issue as a moral issue (Luttrell et al., 2019; Luttrell & Petty, 2020).

This study aims to expand our understanding of the relationship between moral matching and one's attitude base, as well as its effects on overcoming persuasion barriers. Specifically, the present work examines the effects of morally matched messages on the adverse effects of message fatigue (i.e., active and passive resistance) in the context of COVID-19 health compliance on the perceived message effectiveness (PME). As previously stated, perceived message effectiveness assesses how persuasive, convincing, and effective the message was to the recipient (Noar et al., 2020). According to meta-analytic reviews, PME corresponds with attitudes, intentions, and actual behaviors (Dillard et al., 2007) and is in an appropriate outcome measure to assess the effectiveness of a message because the effect size across different outcome measures (e.g., attitudes, behavior, and perceived message effectiveness) appears to be constant for studies comparing different messages (O'Keefe, 2013). Finally, as the primary objective of this research is to ascertain participants' perceptions of the message, examining PME will accomplish this objective, especially given that people's attitudes and behaviors toward COVID-19 health compliance measures are likely to be crystallized at this stage of the pandemic.

1.3 Rationale

Given the need for and significance of long-term public health messaging, as demonstrated by the COVID-19 crisis, it is critical to investigate message strategies that could effectively mitigate the negative effects of long-term exposure to persuasive messages. As noted, the COVID-19 pandemic shed light on the difficulty of communicating risk information longitudinally (Sutton et al., 2020). The ubiquitous health messaging since December 2019 has posed unique challenges for public health campaigns, notably, “attention deficit has been amplified during the pandemic, making the attraction, maintenance, and recapturing of attention over a protracted period of time a significant challenge” (Sutton et al., 2020 p. 2). Additionally,

the restrictive nature of the behavioral recommendations (e.g., stay at home, social distance, wear a mask) has resulted in some individuals feeling reactant toward COVID-19 health messages (Ball & Wozniak, 2021), further fragmenting and polarizing public discourse surrounding health compliance measures (Sutton et al., 2020).

Research on message fatigue finds that high levels of fatigue lead to both active and passive forms of resistance (Kim & So, 2018). Specifically, fatigue leads to disengagement (i.e., inattention) with subsequent messages as well as anger and negative cognitions (i.e., reactance), towards unwanted exposure to familiar messages (Kim & So, 2018). Literature has consistently supported the postulation that fatigue leads to both active and passive forms of resistance, thus undermining the effectiveness of persuasive messaging (Kim & So, 2018; Martinez-Gonzalez et al., 2021; Reynolds-Tylus et al., 2020). Notably, this line of work demonstrates that these forms of resistance lead to decreased behavioral intentions, decreased attitudinal support, and decreased perceived message effectiveness (Kim & So, 2018; Martinez-Gonzalez et al., 2021; Reynolds-Tylus et al., 2020). In fact, since the outbreak of COVID-19, the *Archives of Medical Research* (Koh et al., 2020) and the *Journal of Health Security* (Sutton et al., 2020) list message fatigue as a priority topic for researchers to explore. In line with So et al.'s (2017) recommendations for future research, the current study first investigates message features that could be contributing to perceived message fatigue, leaving individuals inattentive and prone to reactance, in the context of COVID-19. Identifying message content (e.g., hygiene tips, social distancing, mask-wearing, vaccine promotion) that contributes to both active and passive forms of resistance adds nuances to our limited knowledge of how message features influence counterproductive persuasive effects. Therefore, the following research questions are forwarded:

RQ1: What do participants find most fatiguing about COVID-19 messages?

RQ2: What are participants most resistant towards regarding COVID-19 messaging?

In the context of COVID-19, Guan et al. (2022) found that fatigue towards COVID-19 health messages led to a decrease in behavioral mask-wearing, social distancing, and hygiene intentions, which was mediated by both active and passive resistance. These adverse effects pose a serious challenge to public health officials; thus, "the task faced by public health campaign designers is to strategically design health messages to reiterate important information while minimizing potential reactance and inattention resulting from message fatigue" (Guan et al., 2022p. 8). The present research investigates such a strategy. Drawing from moral reframing literature and guided by moral foundation theory, the present study explores the effects of moral matching on the adverse effects of message fatigue and further clarifies the role attitude moralization plays in leading to these effects.

1.3.1 The Role of Moralization in Moral Matching

Moralization, as previously discussed, refers to attitudes based on a moral conviction, a strong belief that something is either right or wrong (Skitka, 2014). In other words, it is the belief that an individual's attitude toward an issue is intrinsically linked to their fundamental moral values (Luttrell & Sawicki, 2020). Moralization is a unique indicator of the strength of one's attitude, with prior research showing that moralized attitudes are often resistant to change, influence behavior, and are persistent over time (Luttrell & Sawicki, 2020). However, recent research suggests that the more a message is tailored to the characteristics of the audience, the more persuasive it is, as demonstrated by the moral reframing literature (Feinberg & Willer, 2019; Teeny et al., 2020).

In fact, research has shown that moralized attitudes are susceptible to change when the persuasive message employs moral arguments (Luttrell et al., 2019; Luttrell & Petty, 2020).

However, this work largely employed broad moral arguments (e.g., this is morally the right thing to do), as opposed to using specific moral arguments (e.g., care and fairness vs. loyalty and purity) that match the recipient's preferred moral foundation. Yet, preliminary research does find that moralization moderates the effects of morally matched messages (Luttrell, 2022). More specifically, when individuals who identified as strongly liberal were exposed to a COVID-19 persuasive health message that emphasized the liberal moral foundations of care and fairness, they perceived the message as more effective to the extent that their political ideology was rooted in moral convictions (Luttrell, 2022). Conversely, when strong conservatives were exposed to liberally framed (i.e., care and fairness moral foundations) COVID-19 health messages and had high political moralization, they perceived the messages to be less effective. These findings lend credence to the argument that ideologically consistent moral messages are effective to the extent that one's attitudes are moralized (Luttrell, 2022).

Before examining the effects of moral matching on barriers to persuasion (e.g., message fatigue) the current research seeks to validate and extend Luttrell's (2022) preliminary findings. First, Luttrell examined the degree to which participants viewed their political ideology as connected to their core moral beliefs. The present investigation measures whether individuals view the *issue* advocated in the persuasive message as connected to their core moral beliefs. This approach helps to better understand the boundary condition of moral matching and whether moralization toward the issue has similar moderating effects. Moreover, this study further extends past research on moral matching and moralization by examining its impact on the adverse effects of message fatigue (i.e., passive and active resistance). Notably, we measure reactance (i.e., active resistance) to be more in line with Brehm's (1966) theoretical proposition, as a two-step process of perceived freedom threat to reactance.

In accordance with moral foundation theory and the reframing literature, which examines how one moral frame outperforms another based on the correlations between political ideology and the five moral foundations (see Feinberg & Willer, 2015), the current study examines how self-identified conservative and liberal individuals perceive COVID-19 health messages that are framed to emphasize a binding foundation (e.g., care), an individualizing foundation (e.g., loyalty), or are morally neutral. Although generally, conservatives endorse all foundations while liberals tend to prioritize the binding foundations, individuals may rely on one moral foundation opposed to another depending on the issue at hand. For example, the moral concern of loyalty was associated with anti-mask wearing beliefs and intentions among conservatives, while care and fairness were not among liberals (Kaplan et al., 2021). Thus, a morally "matched" message frames an issue or request to align with the moral concern the receiver perceives to be most relevant within a given context. Therefore, the following hypotheses are posited:

H1: (a) Conservatives will report higher perceived message effectiveness towards a conservatively framed message than the liberal or control message, and (b) liberals will report higher perceived message effectiveness towards a liberally framed message than a conservative or control message.

H2: Moralization will moderate the effects of message type on perceived message effectiveness, such that, a morally matched message and higher moralization will lead to higher levels of perceived message effectiveness compared to lower moralization and exposure to a morally mismatched or control message.

1.3.2 Moral Matching Effects on Message Fatigue

In addition to examining the boundary conditions of moral matching and moralization, this research examines the effects of morally matched persuasive messages beyond attitude

change (Day et al., 2014; Feinberg & Willer, 2015, 2019) to mitigate the passive and active adverse effects of message fatigue. As mentioned, a line of research finds that message fatigue, that is, perceived overexposure to similar redundant messages, leads to two forms of resistance: passive resistance (i.e., inattention) and active resistance (i.e., reactance). These forms of resistance stem from a perceived threat to one's freedom and lead to adverse persuasive outcomes, such as decreased perceived message effectiveness (Guan et al., 2022; Kim & So, 2018; Martinez-Gonzalez et al., 2021; Reynolds-Tylus et al., 2020). In their recommendations for future research, So et al. (2017) contends that a "change in perspective by reframing can refresh audiences' perceptions about the behavior [message] and, consequently, circumvent cognitive habituation and resultant fatigue" (p. 25). The present study argues that moral matching can evade the resistance which stems from cognitive habituation.

1.3.2.1 Moral Matching and Passive Resistance

Passive resistance is the act of disengaging from subsequent messages after prolonged exposure to similar redundant messages (Kim & So, 2018). In the context of public health campaigns, disengagement, which is operationalized as inattention, leads to adverse outcomes such as reduced behavioral intentions to follow the recommended actions, lower likelihood to seek further information (Guan et al., 2022), and decreased perceived messages effectiveness (Martinez-Gonzalez et al., 2021). Given that certain health crises, such as COVID-19, need to promote behavioral recommendations and health messages for an extended period of time, disengagement from subsequent messages poses a serious risk to public health as well as the efficacy of long-term health campaigns. However, persuasive health messages that employ moral rhetoric that aligns with an individual's core moral foundations (e.g., care/fairness,

loyalty/purity/authority) that are deemed contextually important may have the ability to recapture attention, mitigating passive resistance.

A line of psychological research finds that individuals are more likely to attend to and remember moral language (e.g., freedom, duty, justice) over morally neutral language (Gantman & Van Bavel, 2016). Notably, individuals are more likely to endorse and interact with persuasive arguments that align with their moral values via online communication (Brady et al., 2017). The ability of moral rhetoric to capture and hold our attention makes sense, as when an individual perceives a topic or issue to be personally relevant, their motivation to engage with the message increases (Petty & Cacioppo, 1986). Notably, Petty and Wegener (1998) pose that a strong argument is one which matches the way a person looks at the world, and if an individual perceives a persuasive argument to be strong, they are more likely to positively evaluate the message and support the issue (Petty & Cacioppo, 1986). Thus, the match between the message and one's moral bases is more likely to be perceived as personally relevant and motivate issue-relevant thinking because the match allows for the message to be processed more fluently (Gantman & Van Bavel, 2014), evoking feelings of "comfort or familiarity…encouraging positive evaluations" (Feinberg & Willer, 2019, p. 4). Since individuals are more likely to focus on and prioritize moralized content (Brady et al., 2020) over neutral stimuli, and a morally matched messages are perceived as personally relevant and conjure positive emotions (Feinberg & Willer, 2019), a morally matched health message should draw an individual toward the message, increasing their attention paid to the message. The intrinsic value that results from being exposed to a persuasive message that matches one's deeply rooted moral values is likely to garner interest and capture attention, especially if the individual perceives the topic as a moral issue (i.e., moralization). Therefore, the following hypotheses are posited:

H3: Following exposure to a COVID-19 health compliance message, message fatigue will predict less attention paid to the message.

H4: Inattention will be related to decreased perceived message effectiveness.

H5: The effects specific in H3 will be moderated by moral matching and moralization, such that inattention will be weaker among people exposed to a morally matched message and have more moralized attitudes.

1.3.2.2 Moral Matching and Active Resistance

In addition to passive resistance, in their seminal work, Kim and So (2018) proposed that message fatigue also leads to active resistance via psychological reactance (Brehm, 1966). Upon unwanted exposure to a similar redundant message, they forwarded that individuals will actively resist the message by generating negative thoughts or counterarguing (i.e., reactance). Although it was found that message fatigue was indeed associated with reactance, this study failed to measure perceived freedom threat, the primary antecedent to reactance as conceptualized by Brehm (1966). However, subsequent research corrected this and discovered that message fatigue is associated with reactance following perceived freedom threat (Martinez-Gonzalez et al., 2021; Reynolds-Tylus et al., 2020), validating Kim and So's (2018) theoretical rationale. Thus, message fatigue contributes to campaign failure by threatening one's freedom and leading to negative cognitions and anger. This ultimately endangers the message's efficacy by lowering behavioral intentions (Ball & Wozniak, 2021), weakening support for the message's issue (So, 2021) and decreasing perceived message effectiveness (Reynolds-Tylus et al., 2020). Indeed, Ball and Wozniak (2021) found that message fatigue toward COVID-19 health messages predicted perceived freedom threat, which in turn predicted reactance. Notably, they demonstrated that higher levels of reactance were associated with lower levels of hygiene and

fewer social-related COVID-19 preventive behaviors (Ball & Wozniak, 2021). Therefore, it is imperative to investigate strategies that mitigate perceptions of freedom threat and reactance in order to increase the efficacy of COVID-19 health messages.

Given the literature on moral reframing, which finds that morally matched messages lead to more positive evaluations even towards counter-attitudinal issues (Feinberg & Willer, 2019), moral matching may also have the ability to mitigate active resistance. It is possible that health compliance messages that are morally framed (e.g., loyalty/purity/authority) to match the moral foundations of the recipient (i.e., binding foundation), the less perceived freedom threat and reactance one will experience. Moral convictions are a central part of one's identity (Kovacheff et al., 2018), and one of the important underlying bases of attitudes (Skitka et al., 2005). The perceived overlap between the message's argument and an individual's moral convictions results in an appeal that deeply resonates with an individual and causes them to revise their attitudes accordingly (Feinberg & Willer, 2015, 2019). A persuasive message that corresponds to one's fundamental moral convictions is perceived as relatable and likely conjures feelings of comfort, satisfaction, and an overall positive evaluation of the message content (Feinberg & Willer, 2015). Consequently, the appeal is less likely to be perceived as a threat to one's freedom, leading to a decrease in reactance. In line with recent research on moralization (Luttrell et al., 2019; Luttrell & Petty, 2020), the more one's attitude toward an issue is motivated by moral concerns, the greater the impact of the moral message. Thus, based on the literature on message fatigue and moral rhetoric, the following hypotheses are advanced:

H6: Following exposure to a COVID-19 health compliance message, message fatigue will positively predict freedom threat perceptions.

H7: Freedom threat perceptions will be related to increased reactance.

H8: Reactance will be related to decreased perceived message effectiveness.

H9: The effects specified in H6 will be moderated by message type and moralization, such that perceived freedom threat will be weaker among those exposed to a morally matched message and that have more moralized attitudes.

The current dissertation research empirically investigates the active and passive forms of message fatigue resistance as well as the effects of morally matched persuasive appeals and moralization on these routes to enhance perceived message effectiveness.

1.4 Research Design

The literature suggests that the consistent exposure to COVID-19 health messages since the outbreak in 2019 has resulted in less attention paid to subsequent COVID-19 health messages (Guan et al., 2020) and reactance, due to their restrictive nature (Ball & Wozniak, 2021). As such, COVID-19 is an appropriate context to explore the effects of moral matching in overcoming fatigues passive and active barriers to persuasion. Guided by the message fatigue literature (So et al., 2017) and moral foundations theory (Haidt & Joseph, 2004), there were three main purposes of this dissertation. The first purpose was to identify COVID-19 health promotion message content contributing to perceived message fatigue. The second purpose was to reframe this content using moral rhetoric and experimentally test the effects of morally framed health messages that match or mismatch an individual's moral foundation. The third purpose was to investigate the boundary conditions of moral frames on the message's perceived effectiveness. To accomplish these aims, the current study used mixed methods and was conducted in three phases, with each study informing the next. This section provides a brief overview of each of the three studies and how they informed one another.

In Study One, focus groups were held to uncover formative research on the specific message content (e.g., COVID-19 hygiene tips, social distance, mask wear, vaccine promotion) and features that contribute to fatigue, leaving individuals inattentive, and resistant (So & Kim, 2018). The qualitative data collected in Study One contextualized individuals' experiences of message fatigue in the context of COVID-19 and provided a more in-depth understanding of the emotional and cognitive consequences of fatigue on counterproductive persuasion outcomes (Noar, 2006). Focus group participants were asked to discuss the types of health compliance measures to which they felt overexposed, exhausted, and resistant towards. Participants were then asked to look over a selection of COVID-19 health messages and rate how notable, effective, and persuasive they thought they were. The sample messages included two Centers for Disease Control and Prevention (CDC) health compliance messages and two morally framed messages constructed solely for the focus groups. The data from the focus groups revealed the COVID-19 health compliance measure participants were most fatigued by, during the time of data collection (i.e., mask-wearing), and provided insight on message content and design that guided the development of the persuasive health messages for Studies Two and Three. Specifically, after the formative research from Study One was collected and analyzed, four morally framed COVID-19 health messages were constructed based on the focus group feedback, previous research, and Hopp et al.'s (2021) extended Moral Foundation Dictionary (eMED). Two messages used language and arguments that appealed to the care moral foundation (i.e., liberal messages endorsing the individualizing foundation) and two that appealed to the loyalty moral foundation (i.e., conservative messages endorsing the binding foundation). Detailed descriptions of the messages and their construction are outlined in Study One.

In Study Two, a manipulation check of the four messages mentioned above was conducted to ensure that they represented the appropriate moral foundations. Additionally, the manipulation checks also examined the perceived novelty of the messages. Since message novelty has persuasive effects (Ajzen, 1992), this measure was included to ensure that the effects found in the final experiment (Study Three) were due to the message's moral frame and not because the messages were perceived as unique. Based on the results of the manipulation check, two messages, one representing the care foundation, and one representing the loyalty foundation, were chosen for Study Three.

In Study Three, a cross-sectional experiment was conducted to address hypotheses one through nine. In line with So et al.'s (2017) recommendation to explore message frames that can circumvent the adverse effects of fatigue, an experimental design was employed to examine the effects of a morally matched (vs. a mismatched and a control message) on fatigues active and passive routes of resistance and perceived message effectiveness. The outcome variable, perceived message effectiveness, was chosen for three reasons. First, it is a frequently examined variable throughout persuasion research and in the message fatigue literature (Noar et al., 2020; Reynolds-Tylus et al., 2020). Second, given that the current research examines the effectiveness of moral frames in health messaging, and that the perceived effectiveness of a message is used to estimate a campaign's success (Rohde et al., 2020; Yzer et al., 2015), this is an ideal outcome to evaluate. Furthermore, assessing participants attitude or behavior change may be futile since attitudes toward COVID-19 health compliance measures are likely to be highly crystallized, and behavior regarding health recommendations may be influenced by state and federal mandates.

2 Chapter 2: Study One and Study Two

2.1 Study One: Formative Research

2.1.1 Procedures

Following IRB approval, 12 focus group discussions were conducted. The focus groups were held to 1) answer research questions one (what types of COVID-19 health messages participants find redundant) and two (what participants are most resistant to in terms of COVID-19 messaging) and 2) gather feedback on sample COVID-19 health compliance messages to inform the development of the experimental stimuli. Purposive and convenience sampling strategies were used to obtain information-rich participants that broadly represented the target audience (Patton, 1990). The convenience sample included undergraduate students enrolled in introductory communication courses who were recruited through the researcher's subject pool at a small West Coast University. Communication majors enrolled in introductory communication courses are required to participate in university-sponsored research studies for class credit. From a list of active research studies, students choose those in which they wish to participate and qualify for using the SONA system, a cloud-based management system for research and participation. The SONA system provided a brief description of the present study's eligibility criteria and the purpose of the research procedures. To qualify, students had to be enrolled in an introductory communication course and be 18 years of age or older. For those who did not meet the exclusion and inclusion criteria, an additional assignment was available. Focus group participants were granted one credit that went towards their research participation quota.

Participants were asked to sign up for a focus group discussion based on their political ideology (i.e., liberal/leaning liberal, moderate, conservative/leaning conservative) to provide information specific to points of view within each ideological group. Considering how

politicized the topic of COVID-19 has become, political ideology is a salient variable with a strong moral foundation (Sutton et al., 2020). Conducting homogenous focus groups in terms of political ideology was an appropriate decision given that individuals are more willing to openly discuss their point of view when they feel safe and are among like-minded individuals (Merton & Lazarsfeld, 1950). Lastly, separating participants based on self-identified political ideology provided the opportunity to identify differences in perceived fatigue, resistance, and effectiveness of COVID-19 messages across and within political affiliations. Together, this strategy provided valuable feedback to construct messages tailored to the target audience (Noar, 2006). All focus group discussions took place between October 26th and November 4th, 2021.

2.1.2 Participants

A total of 53 undergraduate students (eight males, 44 females, one non-binary) aged 18 to 27 (M = 19.43, SD = 1.87) participated in focus groups with two to seven individuals in each group. To be included in the study, participants were required to be at least 18 years old and enrolled in the university student subject pool. The majority of participants identified as white/Caucasian (n = 32, Hispanic/Latino n = 6, East Asian n = 6, Multiracial n = 5, South Asian n = 2, Southeast Asian n = 2, Pacific Islander n = 1, Middle Eastern n = 1). Regarding political ideology, most participants were Liberal/leaning Liberal (n = 29), followed by Moderate (n = 16), and Conservative/leaning Conservative (n = 8). A total of 12 focus group sessions were held, with four groups of homogeneous ideology (e.g., four Liberal, four Conservative, and four Moderate groups) and no one person participating more than once (see Table 3).

2.1.3 Data Collection

Participants selected a focus group date and time that fit their self-identified political affiliation listed on the university SONA subject pool. After selecting which focus group to

attend, they were immediately provided with a digital consent form, a Zoom link for their designated group day and time, and a brief online questionnaire. The questionnaire included demographic questions regarding the participant's age, gender, ethnicity, and political ideology. Participants received an email reminder 24 hours prior to their focus group session reminding them to sign the consent form, complete the questionnaire, and contact the researcher with any questions prior to participating in the focus group. When participants entered the focus group, they were read a protocol script (Appendix A) in which I introduced myself and discussed the purpose of the focus groups.

Focus group sessions took place over Zoom and were audio and video recorded. The recordings were stored on a secure server on my university-issued laptop. Each Zoom video and audio recordings were labeled by political ideology makeup, focus group number, and date (e.g., Conservative focus group #1, Oct. 26th, 2021). Discussions were scheduled to last a maximum of 60 minutes. The completed discussions ranged from 30 minutes to 60 minutes. A semi-structured interview schedule was used to guide each focus group through the same question route (Krueger & Casey, 2015). The interview schedule opened with general questions about the types of messages that captured the participants' attention and the most prevalent type of COVID-19 health messages they had encountered to date (Appendix A). To further address research questions one and two, the focus group questions then narrowed in scope to examine message fatigue and psychological reactance. For example, participants were asked what type of COVID-19 health compliance messages they see or hear most often, what messages they find themselves ignoring, and what types of messages, if any, triggered anger/resistance.

Finally, each focus group reviewed the same four COVID-19 health messages (Appendix A.1). This portion of the focus group was intended to facilitate a robust discussion about what

participants liked and disliked about the content and graphics of the health messages in general, as well as gain insight into aspects of the content or graphics that were appealing or unappealing based on their political ideology. Two of the COVID-19 health compliance messages were taken directly from the CDC website and two were constructed to highlight moral themes (i.e., individualizing foundations and binding foundations). By exposing each focus group to the exact same messages, I was able to garner insight on liberal, moderate, and conservative-leaning individuals' perspectives of COVID-19 health messages that are morally neutral (e.g., CDC messages) and those that are morally matched or mismatched. Feedback on the message's content, graphics, and clarity were used to construct the messages for the manipulation checking in Study Two. Table 1 displays the four messages used in all of the focus groups, as well as how they were amended based on participant feedback. As noted, this valuable feedback was used to construct four morally framed messages for the pre-test prior to the experiment in Study Three (Table 2).

2.1.3.1 Initial Messages for Focus Groups

The morally framed messages used in the focus groups were created using the extended moral foundation dictionary as well as previous research on moral matching (Hopp et al., 2021; Wolsko et al., 2016). The first moral message was constructed to appeal to conservative-leaning individuals by highlighting themes of loyalty, purity, and respect for authority and one's country. For example, the phrase "show your respect for your county by joining the fight against COVID-19" appeals to one's patriotic duty and urges those to comply with COVID-19 health compliance guidelines for their country (Feinberg & Willer, 2019; Graham et al., 2009). The second morally framed message highlighted themes of care, not causing harm to others, and fairness, to appeal to liberal-leaning individuals. For example, the phrase "Show your love for humanity and help care

for others that are vulnerable" appeals to values of compassion and suggests that complying with COVID-19 health guidelines is a way to show compassion for others (Feinberg & Willer, 2019; Graham et al., 2009). Both morally framed messages urged individuals to social distance, wear a mask, and wash their hands. The CDC COVID-19 messages were taken directly from the CDC's website and mentioned the same health compliance recommendations. These messages were neutrally worded to help guide the conversation as well as receive additional feedback on graphic design and specific COVID-19 guidelines participants liked and disliked. As mentioned, focus group data were invaluable in guiding the adaptation and design of the final version of the morally framed messages. Although only two morally framed messages (one appealing to liberals and one appealing to conservatives) were used in the focus groups, a total of four messages were construed for the manipulation test (two liberal-leaning and two conservative-leaning; see Table 2).

2.1.4 Data Analysis

Each recording was transcribed and uploaded to NVivo (version 12) for Windows for analysis. NVivo is a qualitative and mixed methods research analysis software program that can be used to analyze unstructured texts such as interviews and focus groups (QSR International, 2018). I transcribed each focus group recording and employed thematic analysis to identify "recognizable reoccurring topics…or patterns" (Hawkins, 2017, p. 2). Specifically, Braun and Clarke's (2006) guidelines were employed to address the guiding research questions. After familiarizing myself with the data, I used line-by-line open coding to identify key content within each focus group. Line-by-line coding entails assigning a word or phrase to meaningful segments of the material that are pertinent to the study's purpose (Saldana, 2021). Initial codes were provided with a descriptive label (e.g., "anger towards COVID-19 messages"). All meaningful

segments were compared to previously coded segments and either assigned the same label, if characteristics were similar, or given a unique code. This allowed for codes and labels to be collapsed into larger categories as needed. See Table 1 for an illustration of coding and categorizing units of meaningful data.

Table 1

Excerpts from Codebook

Excerpt	Code	Definition	Theme
"Reiterating that like we still need to wear masks because I think a lot of people are kind of getting tired of them since it's been so long."	Tedium towards mask messages	COVID-19 health compliance messages reminding individuals to "wear their mask" were perceived as redundant and fatiguing.	Overexposure to mask-wearing COVID-19 health messages
"I mean, I guess, just wearing a mask, because like at this point, I pretty much wear it all the time, like even when I'm outside so just like hearing it over and over again when I'm like always wearing it."	Redundancy of mask-wearing messages		
"Please wear a mask sign everywhere, whether it's at school, you know before you go into building, before you go into any store. I feel like that's definitely like the one that I see the most, personally. You don't see as much of the social distancing anymore."	Prevalence of mask-wearing messages		

Excerpt	Code	Definition	Theme
“I think at this point, so much has been put into the messages of it, but it is almost less effective now just because we are desensitized to it, but you know it is still important, which is hard to balance.”	Tension between fatigue and importance	Repetitive messages resulted in paradoxical feelings of desensitization towards COVID-19 health messages vs. the importance of redundant messages to remind others that we are still in this together.	Desensitization vs. Reassurance
"I think it's like a lot of people now are just emphasizing that you should wear a mask just to keep like everyone around you generally safe, because you don't know if everyone's vaccinated."	Value of repetitive messages		
“I think, like, for me, it was less fatigue, and it was almost like more reassuring to see that constantly because…like the pandemic is not over so seeing that…it was reassuring that people are still taking it seriously and are still like considering others health and so it was less tiring and more just comforting.”	Reassurance and comfort		

Excerpt	Code	Definition	Theme
“I feel like no emotions come to mind for me. I’m bored.”	Boredom	Redundant messages resulted in individuals feeling overwhelmed and fatigued.	Emotional Exhaustion
“I feel like it's very repetitive. Yes, it's important, but I feel like it's so overwhelming, like it's gotten to the point where it's so much that it just overwhelms me.”	Overwhelmed with messages		
“It just so inconsistent. It almost is doing, like a boomerang effect and making me more like… what's the word… like not in denial, but more like I want to do the opposite almost.”	Boomerang effect	Redundant messages perceived as inconsistent and forceful.	Reactance
“I also think the redundancy is almost pushing away…the more it's just driving them away and it's creating an even bigger divide”	Reactance towards redundant messages		
“Right, it's just like, you can put out as many messages as you want, but like because it's been so long since it kind of started like I feel like people are kind of, just like, settled in the way they feel.”	Repetitive messages are useless		

After completing the primary line-by-line coding phase, initial codes were further categorized based on the constructs of message fatigue (i.e., overexposure and tedium) and psychological reactance (i.e., reactance and resistance). This approach allowed for the codes to be assigned to categories that aligned with the theoretical framework of the study (Tracy, 2019).

For example, the code "anger towards COVID-19 messages" was further categorized under "reactance and resistance towards COVID-19 messages." The constant comparative method was used to compare data and codes to one another and to identify emerging themes across focus groups discussions (Tracy, 2019). Axial coding was used to reassemble the data and group codes into emerging themes (Tracy 2019). A theme is an idea that appears repeatedly or penetrates the data, can be characterized by its frequency and/or intensity (Miller-Day, 2004), and emerges within and across focus groups (Saldana, 2021). Lastly, for participants' reactions and feedback to the sample messages, the same process of initial and axial coding was used to identify patterns within the data. Focus themes and participants' feedback on the four COVID-19 sample messages were used to construct the final messages before the manipulation checking in Study Two. Images of the original and amended messages post-focus group analysis are displayed in Table 2.

To enhance trustworthiness of the analysis, findings were constantly compared to the initial raw data, additionally, a detailed audit trail with memos and analytical decisions was kept throughout data collection and analysis (Lincoln & Guba, 1985). All names reported in the findings were replaced with pseudonyms to ensure confidentiality (see Table 3).

2.2 Findings

The focus group discussions provided preliminary insight into the specific COVID-19 health message topics that people found most fatiguing, as well as how repeated exposure to these messages evoked passive and active resistance (Kim & So, 2018). Four themes emerged from the focus group data: overexposure to mask-wearing COVID-19 health messages, desensitization vs. reassurance, emotional exhaustion, and reactance. Interestingly, the overexposure towards mask-wearing theme surfaced across all political ideologies, while the

three subsequent themes differed based on political ideology. These themes address both research questions, add nuance to our understanding of message fatigue and resistance, and demonstrate how perceptions of repeated messages differ depending on political ideology. Lastly, the group discussions provided necessary feedback on sample COVID-19 messages.

2.2.1 RQ1: Perceptions of COVID-19 Message Fatigue

2.2.1.1 COVID-19 "Wear Your Mask" Messages

First, across political affiliations, participants reported being overexposed to messages regarding mask-wearing. Specifically, conversations and signage regarding mask-wearing were perceived as redundant and tiresome. Participants made statements such as, "There is just so much signage, I think, for wearing masks. Like literally any place you walk into, there is something about a mask, but that is not the same thing for vaccines" (Lauren). When directly asked what type of COVID-19 health messages are most redundant at the current moment, again, the general sentiment from participants was feeling fatigued towards messages and communication regarding mask-wearing. For example, Ellie stated, "At this point, I pretty much wear it [a mask] all the time, like even when I am outside. So just like, hearing it over and over again when I am like always wearing it." Another participant explained, "I think the ones that are like definitely the most redundant, like the ones we see all the time, are, you know, the repeated ones. Like wear a mask, keep everyone safe*"* (Katie). This finding is consistent with recent research conducted by Guan et al. (2022) which found that individuals are tired of hearing and seeing messages regarding mask-wearing.

2.2.1.2 Desensitization vs. Reassurance

In addition to feeling overexposed to mask-wearing content, participants, specifically those that identify as liberal or leaning liberal, reported mixed emotions towards redundant

health messages. For instance, although they perceived COVID-19 mask-wearing messages as redundant, these participants also emphasized the importance of the redundant messages. For example, Quinn stated:

> Like when I see a message, I am kind of like okay, yeah, COVID is still going on. So, I think at this point so much has been put into the messaging of it…it is almost less effective now just because we are desensitized to it, but you know it is still important, which is hard to balance.

Participants with liberal leanings also reported that message redundancy was both reassuring and helpful. For example, Alex stated the redundant messages remind her that "People still care, like we're all working, we are all putting in work to make this better and like protect other people." Repetitive messaging, specifically regarding masks, was reported as useful and necessary to know when and where masking is required. As one participant stated, "I feel like the redundancy is helpful in an informative way, just so I know how to conduct myself" (Eddie). These findings highlight themes of message fatigue, specifically the "perception that the messages are repetitive and overlapping" (So et al., 2017, p. 9) while simultaneously balancing the perceived need for repetitive messages. The paradoxical feelings of desensitization and reassurance add nuance to our understanding of message fatigue, which thus far has focused on the negative effects.

2.2.2 RQ2: COVID-19 Health Messaging and Resistance

The second research question sought to uncover what participants are most resistant to regarding COVID-19 messaging. As proposed by Kim and So (2018), message fatigue can lead to two forms of resistance: passive resistance (i.e., disengagement or inattention) and active resistance (i.e., reactance). Individuals who report high levels of message fatigue have been

found to disengage from subsequent health messages (i.e., passive resistance), as well as become reactant and counterargue (i.e., active resistance; Kim & So, 2018; Martinez-Gonzalez et al., 2021; Reynolds-Tylus et al., 2020). Focus group discussions provided more nuance on how redundant messages can elicit both active and passive resistance, as well as how these routes manifest differently across political ideologies. Participants reported feeling disengaged and resistant to the influx of COVID-19 health messages; however, these passive (i.e., inattention) and active (i.e., reactant) resistant behaviors predominately emerged based on political ideology.

2.2.2.1 Passive Resistance: Emotional Exhaustion

For politically moderate participants, the discussion centered on inattention and disengagement from COVID-19 health compliance messages as a result of emotional exhaustion. Although emotional exhaustion is similar to feelings of desensitization, which was reported by liberal-leaning participants, moderates' attitudes aligned with feelings of burnout, weariness, and annoyance, characteristics of emotional exhaustion (Kinnick et al., 1996). Moreover, desensitization can be understood as resulting from habitation, i.e., a decreased emotional response to a previously sensitizing stimulus (Cho & Salmon, 2007). On the other hand, emotional exhaustion results from burnout, which encompasses desensitization alongside an influx of mixed emotions such as irritability and apathy (Gorgulu & Akilli, 2017). In this context, exhaustion from repeated exposure to COVID-19 health guidelines were discussed as the source of individual's disengagement from subsequent messages. For example, Rachel stated:

The CDC guidelines I've seen like 100 times, so I don't even look at it, like I feel like my eyes are just immune to it now, and just a little bit more frustrated, also kind of numb to it like this is just our life now unfortunately.

A second participant echoed this sentiment, stating:

> I know for me it is a mix of emotions, like now numb because it's like all right, cool, we're used to it every single day. That['s] been our lives the past two years, you know, and annoying because again it is the same message (Susan).

Emotional exhaustion is a central way in which fatigue towards repeated messages manifest (Frew et al., 2013) and has negative impacts on message processing (Keating & Galper, 2021). For example, the sentiment of being exhausted by and no longer paying attention to the same message aligns with previous research on message fatigue, which found that increased exposure to repeated messages was negatively related to attention and message elaboration (So et al., 2017).

2.2.2.2 Active Resistance: Reactance

Interestingly, active resistance (e.g., anger and negative cognitions) emerged for participants with conservative leanings who perceived redundant messages as inconsistent and forceful, shedding light on the relationship between message fatigue and psychological reactance. First, participants reported feeling frustrated with the perceived inconsistencies of the redundant messages, specifically regarding mask-wearing messages. One participant stated:

> I think it's just the mask thing the most now, and it [is] definitely frustrating me too, because it feels weird going from like, 'Oh, we are all vaccinated, we don't have to wear masks anymore' to 'Oh, there is the Delta variant, now we have to wear masks again.'

Another participant echoing this sentiment reflected on how messages differ depending on one's location, stating that "You drive 30 minutes to Los Angeles and then you have to wear a mask no matter what, everywhere, so it's just so inconsistent. I don't know, it is just super annoying" (Landon). Discrepant COVID-19 messages, specifically regarding mask-wearing,

were discussed in terms of triggering reactance. For instance, one participant stated, "It is just so inconsistent that it is almost like a boomerang effect and making me more like I want to do the opposite." In addition to being frustrated with inconsistent and seemingly contradictory health messages, one participant reported that the repetitive messages seemed forceful:

> Everyone was like, trying to force it on me, and that was like kind of irritating and like pushed me away…when it is like very repetitive, like do this, wear your mask, get vaccinated, it almost makes me not want to more (Allison).

The finding that exposure to unwanted repetitive messages results in frustration and resistance supports previous research demonstrating that perceived message fatigue leads to feelings of reactance (Ball & Wozniak, 2021; Gonzalez et al., 2021; Kim & So, 2018). Theoretically, this finding aligns with the two-step process of psychological reactance, in that a perceived threat to one's freedom or freedom of choice elicits reactance (Brehm, 1966). Importantly, the finding that inconsistent messages were perceived as frustrating adds nuance to our understanding of this relationship. Specifically, in the context of COVID-19, inconsistencies within the repetitive and overexposed messages contributed to participants' anger and negative cognitions regarding COVID-19 messages.

In addition to these findings, which addressed research questions one and two, participants were shown sample COVID-19 health compliance messages. Participants were asked to provide feedback on what they perceived as appealing or unappealing about the content and graphics.

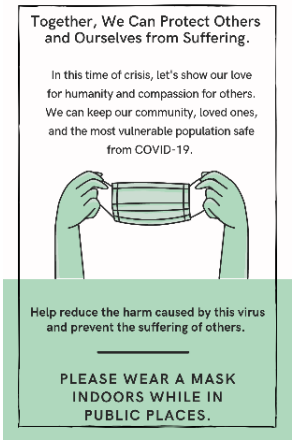
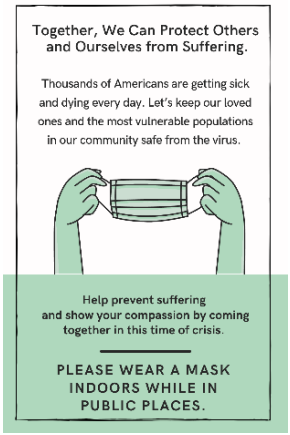
2.2.3 Stimulus Messages Adaptation and Construction

Focus group participants' reactions and opinions regarding the COVID-19 health compliance messages offered much-needed insight into what message content and design

features grabbed participants' attention and were perceived as most effective. As mentioned, all focus group participants were exposed to the same four messages, two CDC messages and two morally framed messages. Participant feedback on content and design elements was then used to guide the construction of the experimental stimuli, as displayed in Table 2**.**

Table 2

Message Development of Content and Graphics

	Message to Focus Groups	Changes Post-Focus Group
1.		 
2.		 
3.		Not adapted
4.		Not adapted

Note. The first two sample messages were construed for the manipulation check. Messages three and four were taken directly from the CDC.gov. See Appendix A.1 and A.2 for larger images.

A total of four morally framed COVID-19 health compliance messages were constructed for the manipulation check test in Study Two. The features incorporated into the messages were guided by the results of the formative research from the focus groups in Study One and previous research on moral framing (Day et al., 2014; Kaplan et al., 2021). Results from study one (RQ1) revealed that mask-wearing was the health compliance message participants reported being overexposed to. Since overexposure is a key characteristic of message fatigue (So et al., 2017), each message specifically promoted mask-wearing, as opposed to other COVID-19 health compliance measures. Message stimuli were brief (i.e., between 54 and 59 words each) and featured the same cartoon graphic of hands holding a mask and the sentence "Please wear a mask indoors while in public places." The messages differed in color schemes and moral frames (i.e., two *loyalty* messages and two *care* messages). Lastly, focus group participants noted that the second CDC message (see message four in Table 2) was "visually appealing," "straightforward," and "clear." As a result, the font and graphics for all messages were enlarged.

2.2.3.1 Loyalty Moral Foundation Messages

Focus group participants indicated that the binding moral foundation message, designed to align with those that prioritize loyalty, respect for authority, and purity (Graham & Haidt, 2010), was unclear and did not "make sense." It is possible that the lack of message clarity stemmed from attempting to fit all three binding moral foundations (i.e., loyalty, authority, and purity) into a short health compliance message. Therefore, to enhance clarity, the messages were amended to solely emphasize the *loyalty* foundation only. Previous research finds that anti-mask

beliefs are associated with the specific moral concern of ingroup loyalty (Kaplan et al., 2021) making this binding foundation an appropriate one to emphasize. Additionally, participants disliked the analogy of fighting COVID-19 like a war; for instance, one participant stated, "I thought it did not really represent COVID very accurately…it was kind of like something you would describe like fighting a war, and I would not necessarily say this is like the war kind of fight." Consequently, the war analogy, specifically the phrase, "joining the fight against COVID-19," was omitted. Although the evolutionary explanation for upholding the loyalty foundation is grounded in the idea that individuals form groups and coalitions to ward off threats and challenges (Haidt, 2012), participants noted that highlighting the economy would be a more effective rallying cry.

Therefore, the two loyalty messages constructed for the pilot test incorporated the same bolded header "When America is Threatened, We Rise as One" which was adapted from previous research on moral framing in the context of COVID-19 (Kaplan et al., 2021). Additionally, both messages incorporated the statements "Together, we can save America from COVID-19 and restore our nation's economy" and "Please wear a mask in public places." As mentioned, results from study one revealed that participants thought highlighting economic recovery was an effective persuasive strategy, particularly for those who are more fiscally conservative. Given that conservative individuals endorse the *loyalty* moral foundation, referencing economic recovery is appropriate to tailor the message to that demographic. Moreover, the phrases "save America" and "restore our economy" appeal to the moral concerns of group loyalty, self-sacrifice, and patriotism (Graham et al., 2013). These phrases uphold nationalistic values that are strongly held by most conservatives (Haidt & Graham, 2007). Moreover, focus group participants, particularly conservative-leaning participants, reported

feeling resistant to forceful messages. Accordingly, the message ended with a polite request to "please wear a mask indoors while in public places."

The two loyalty messages differed slightly in their appeals. The first message appeals to sacrificing *oneself* for the group by emphasizing one's patriotic duty: "In this time of national crisis, like our forefathers before us, it is our patriotic duty to come together, fight for our way of life, and each other." The second message highlights *others'* sacrifice for the nation/group and urges others to honor and protect their ingroup members. "Thousands of Americans are getting sick and dying every day. The most vulnerable are of America's greatest generation, the same Americans who fought for us in past wars." Although slightly different, both message claims appeal to the moral concern of loyalty by emphasizing national pride, honor, and sacrifice (Graham et al., 2013). Additionally, similar statements proved effective in persuading individuals who endorsed the loyalty moral foundation to wear a mask in previous research (Kaplan et al., 2021). Lastly, the red and blue color scheme was chosen to underscore patriotism and nationalism, characteristics of the loyal moral foundation (Graham et al., 2013).

2.2.3.2 Care Moral Foundation Messages

As indicated by the focus group feedback, messages appealing to caring for and protecting oneself and loved ones were perceived as highly effective and persuasive, particularly for liberal and moderate-leaning individuals. Morgan noted, "What appealed to me…[was] being able to like care for yourself but also care for others, that like makes you kind of feel like we are all in it together, like do these things and you will be able to help yourself and others." Therefore, the individualizing (i.e., care and fairness) messages were amended to solely emphasize the moral concern of *care*, which also kept all messages consistent by appealing to only one moral foundation.

The two *care* moral foundation messages included the same graphic of a mask and presented similar moral arguments. Since the care moral foundation is rooted in compassion, empathy, and concerns of preventing the harm and suffering of others (Graham et al., 2013), each message included the same bolded header: "Together, We Can Protect Others and Ourselves from Suffering." The body of each message differed slightly. The first read, "In this time of crisis, let's show our love for humanity and compassion for others. We can keep our community, loved ones, and the most vulnerable populations safe from COVID-19…. help reduce the harm caused by this virus and prevent the suffering of others." The second message read, "Thousands of Americans are getting sick and dying every day. Let's keep our loved ones and the most vulnerable populations in our community safe from the virus…help prevent suffering and show your compassion by coming together in this time of crisis." The messages differed slightly, with the first focusing on showing compassion for all of humanity (i.e., "Let's show our love for humanity and compassion for others") and the second emphasizing the harm being caused to others in our community (i.e., "Thousands of Americans are getting sick and dying every day"). Both messages ended with asking individuals to "please wear a mask indoors while in public places" to be consistent with the loyalty messages. Lastly, a green color scheme was chosen since shades of green are frequently associated with positive emotions such as kindness (Sutton & Altarriba, 2015), peace, and hope (Kaya & Epps, 2004), virtues that underpin the care moral foundation.

2.2.4 Summary

The themes that emerged within and across focus groups accomplished two goals. First, they narrowed in on the specific type of COVID-19 message that participants were most fatigued by (i.e., messages regarding mask-wearing) and uncovered how attitudes toward being exposed to redundant messages may vary depending on political affiliation. Second, these findings served to guide the adaptation and construction of the messages for Study two and Three of this research by providing insight into the type of message content and graphics participants found appealing and unappealing.

First, the finding that participants felt overexposed to redundant "wear your mask messages" is understandable given the timing of data collection. These focus groups took place between October 26th and November 4th, 2021, right before the CDC authorized a booster shot for all adults to curb the rising rates of the COVID-19 Delta variant infections. During this time mask mandates were temporarily going back into effect across the United States ("COVID-19 Pandemic Timeline," 2022). Therefore, despite the many COVID-19 health compliance measures being promoted (i.e., vaccines, isolation, social distance), mask-wearing messages emerged as the most salient across the focus group data. This finding reinforces the importance of formative research to design messages that incorporate content and or themes that are relevant to your target audience.

The theme of desensitization vs. reassurance brings attention to how participants make sense of the perceived overexposure to COVID-19 health messages. On one hand, they are weary of too many messages; on the other, they find comfort and assurance in them. Second, the theme of emotional exhaustion was not surprising given that it is a key attribute of message fatigue (So et al., 2017) and a common theme found in interviews with fatigued participants (Frew et al.,

2013). However, moderates reported that feelings of exhaustion led them to disengage, passively resisting subsequent COVID-19 messages. Interestingly, the theme of reactance only emerged within self-identified conservative and leaning conservative participants. Specifically, feelings of resistance and being forced to comply with COVID-19 health messages were prevalent in these discussions. These findings hold implications for how message fatigue may manifest differently depending on an individual's characteristics and values. The four dimensions of message fatigue are broken up into two factors, message environment (i.e., overexposure, redundancy), and audience response (i.e., exhaustion, tedium; So et al., 2017). However, it may be possible that individuals experience fatigue from the message environment but differ in their level of exhaustion and tedium. For example, focus group data indicated that although liberals felt as though COVID-19 health messages were redundant, they also thought they were necessary, resulting in them experiencing less exhaustion and tedium than moderates or conservatives.

Second, participants' reactions to the four COVID-19 messages revealed that using multiple moral foundations in a short health message may be confusing and thus less effective when trying to appeal to an individual's core moral foundation. Rather than attempting to appeal to all the binding moral foundations (such as loyalty, purity, and authority), highlighting one that resonates most with the target audience relative to the context may be more beneficial. For instance, the moral concern of loyalty may be related to anti-mask wearing beliefs among conservatives (Kaplan et al., 2021). Rather than trying to communicate three different moral foundations in a single message, one moral foundation that is most pertinent to the issue should be used to frame a short health message. Moreover, although the individualizing foundation is made up of only two moral foundations (i.e., care and fairness), focus group participants indicated that the appeals to caring for others and preventing suffering grabbed their attention.

This reinforces the importance of constructing messages that relate to the target audience and appropriately articulating the intended frame. Finally, these focus groups revealed that participants are drawn to simple, easy-to-read health compliance messages and service announcements. In a world that is vying for their attention, participants indicated that less is more when it comes to capturing their interest.

Table 3

Focus Group Participant Information

Pseudonym	**Sex**	**Ethnicity**	**Age**	**Political Ideology**	**Focus Group**
Lauren	Female	Caucasian/White	21	Conservative / leaning Cons.	Conservative Group #2
Ellie	Female	Multiracial	19	Moderate	Moderate Group #4
Katie	Female	Caucasian/White	18	Liberal/ leaning Lib.	Liberal Group #2
Quinn	Female	Caucasian/White	18	Liberal/ leaning Lib.	Liberal Group #2
Alex	Female	Caucasian/White	19	Liberal/ leaning Lib.	Liberal Group #1
Eddie	Male	Caucasian/White	19	Liberal/ leaning Lib.	Liberal Group #4
Rachel	Female	Multiracial	19	Moderate	Moderate Group #1
Susan	Female	Caucasian/White	N/A	Moderate	Moderate Group #4
Landon	Male	Caucasian/White	19	Conservative / leaning Cons.	Conservative Group #1
Allison	Female	Caucasian/White	18	Conservative / leaning Cons.	Conservative Group #1
Pat	Female	Hispanic/Latina	21	Conservative / leaning Cons.	Conservative Group #3
Jessica	Female	Caucasian/White	18	Conservative / leaning Cons.	Conservative Group #3

Emerson	Female	Caucasian/White	22	Liberal/ leaning Lib.	Liberal Group #4
Morgan	Female	Hispanic/Latina	19	Liberal/ leaning Lib.	Liberal Group #4

To examine the effects of moral matching on active resistance and perceived message effectiveness, a manipulation check was conducted on the four COVID-19 health messages. In Study Two, the manipulation check ensured that the moral frames accurately reflected the moral foundations of care and loyalty. Based off the results of the manipulation check, one care message and one loyalty message were chosen for the final experiment in Study Three.

2.3 Study Two: Manipulation Check

2.3.1 Procedures

Following approval from the university's Institutional Review Board, participants were recruited through the university's student subject pool and were offered class credit for their participation. Individuals who chose to participate were directed to a Qualtrics survey where they provided informed consent. Next, participants randomly viewed four COVID-19 health messages, in random order to mitigate order effects, and were given a brief questionnaire and demographic survey (Appendix A.2). Specifically, participants were asked to rate how much each moral foundation (i.e., ingroup, authority, purity, care, and fairness) was reflected in each message on a 5-point Likert scale (Day et al., 2014). To do so, the questionnaire provided participants with a definition (e.g., "The loyalty orientation focuses on loyalty to one's group. It values patriotism, self-sacrifice, and putting the group first") for each moral foundation. For each of the four messages, participants were then instructed to indicate how much they thought the message reflected the foundations (i.e., ingroup, authority, purity, care, and fairness), from 1 (not at all) to 5 (very much). Additionally, to ensure that the effects found in the final experiment

(i.e., perceptions towards morally matched and unmatched messages) are due to the moral frame and not perceived novelty of the message, participants were asked to indict how novel they thought each message was on a 5-point Likert scale from 1 (not at all novel) to 5 (very novel).

2.3.2 Participants

A total of 110 participants were recruited through the primary researcher's university subject pool. After excluding those that failed the attention check, 88 responses were retained. After seeing and responding to two out of the four messages, participants were exposed to the attention check question that read "Carefully reading the questions is critical. Please choose Strongly Agree for this item." Those that did not choose "Strongly Agree" were omitted. Participants were all current residents of the United States (U.S.) and were 18 years of age or older. The sample ranged in age from 18 to 36 (M = 19.79, SD = 2.21). Most participants (63.6%) were female; 34.1% were male, 1.1% were non-binary, and 1.1% preferred not to disclose. The majority of the sample identified as white Caucasian (63.6%), while 14.8% identified as Asian, 8.0% Latino, 5.7% Middle Eastern, 3.4% Mixed, 2.3% African America, 1.1% Pacific Islander, and 1.1% selected other. When asked how they described themselves politically, 63.6% identified as Liberal (n = 56), 21.6% as Conservative (n = 19), and 14.8% Moderate (n = 13).

2.3.3 Data Analysis

A manipulation check was performed to ensure that the message frames highlighted the appropriate moral foundation. Specifically, the themes of the ingroup/loyalty moral foundation should be higher in the *binding/loyalty* messages, and themes of the caring foundation should be higher in the *individualizing/care* messages. Four messages were constructed for the manipulation check (i.e., two COVID-19 *loyalty* framed messages and two COVID-19 *care*

framed messages). Since slight variations in a message can affect the perceptions of a messages frame, two messages for each foundation were included in the manipulation and the results were used to choose one *loyalty* message and one *care* message for Study Three. In other words, one *loyalty* foundation message and one *care* foundation message were chosen for the final experiment based on the results of this manipulation check.

One-way repeated measure analysis of variance (ANOVA) tests were run to determine if the appropriate moral frames (i.e., loyalty and care) were successfully manipulated and to determine which two out of the four messages would be used in the final experiment. First, to examine the difference between moral foundation scores within each of the four messages, the data was split by stimulus. The factor was moral foundations, and the dependent variables were the scores for each foundation (i.e., loyalty, authority, purity, care, and fairness). Pairwise comparison post hoc tests were run to assess the significance levels between each moral foundation score and the four messages. Next, two additional one-way repeated measure ANOVAs were run to determine if the two loyalty foundation messages differed significantly from the two care messages. For the first within-subject ANOVA, the factor was loyalty message, and the dependent variable was the moral foundation loyalty scores. The same process was repeated for the care moral foundation scores.

Lastly, two paired-samples *t*-tests were run to compare the mean novelty scores between the two loyalty messages and the two care messages. This additional analysis was run to ensure that the effects found in the final experiment (Study Three) are due to the moral frame and not the perceived novelty of the messages. Thus, the messages' moral foundation scores, as well as their novelty scores, were used to determine which two out of the four messages were used in the final experiment.

2.3.4 Results

Repeated measure ANOVA results for the first loyalty framed message, Maulachy's test indicated a violation of the sphericity assumption ($\chi 2(9) = 41.49$, $p < .001$). Since sphericity is violated ($\varepsilon = .82$), Greenhouse-Geisser corrected results are reported, $F(3.28, 285.18) = 30.69$, $p < .001$, $\eta_p^2 = .25$ Pairwise comparison indicated that the loyalty foundation frame ($M = 4.50$, $SD = 0.83$) was significantly more prevalent than the Authority ($M = 3.57$, $SD = 1.10$), Purity ($M = 3.14$, $SD = 1.18$), Care ($M = 3.25$, $SD = 1.23$), and Fairness ($M = 3.01$, $SD = 1.09$) moral foundations. Therefore, the first loyalty framed COVID-19 health message was successfully manipulated.

Repeated measure ANOVA results for the second loyalty framed message, Maulachy's test indicated a violation of the sphericity assumption $\chi 2(9) = 27.47$, $p < .001$. Since sphericity is violated ($\varepsilon = .88$), Greenhouse-Geisser corrected results are reported, $F(3.50, 304.65) = 27.24$, $p < .001$, $\eta_p^2 = .24$. Pairwise comparison indicated that the loyalty foundation frame ($M = 4.34$, $SD = 0.88$) was significantly more prevalent than the Authority ($M = 3.73$, $SD = 1.12$), Purity ($M = 3.18$, $SD = 1.14$), Care ($M = 3.74$, $SD = 1.00$), and Fairness ($M = 2.98$, $SD = 1.02$) moral foundations. Therefore, the second *loyalty* framed COVID-19 health message was also successfully manipulated.

For the third message, that is, the first care framed COVID-19 message, Maulachy's Test of Sphericity indicated that the assumption of sphericity had not been violated $\chi 2(9) = 11.26$, $p = .258$. Therefore, sphericity is as assumed and results show that there was a significant difference in moral frames $F(4, 348) = 54.40$, $p < .001$, $\eta_p^2 = .39$. Pairwise comparison indicated that the care moral foundation frame ($M = 4.55$, $SD = 0.79$) was significantly more prevalent than the Loyalty ($M = 3.43$, $SD = 1.22$), Authority ($M = 2.34$, $SD = 1.03$), Purity ($M = 3.42$, $SD = 1.23$),

and Fairness (M = 3.73, SD = 1.04) moral foundations. Thus, the first care message was successfully manipulated.

For the fourth message, the second care message, Mauchly's Test of Sphericity indicated that the assumption of sphericity had not been violated $\chi 2(9) = 11.20$, $p = .263$. Thus, sphericity is as assumed, and results showed that there was a significant difference in moral frames $F(4, 348) = 44.40$, $p < .001$, $\eta_p^2 = .34$. Pairwise comparison indicated that the care moral foundation frame (M = 4.45, SD = 0.88) was significantly more prevalent than the Loyalty (M = 3.59, SD = 1.00), Authority (M = 2.52, SD = 1.09), Purity (M = 3.26, SD = 1.21), and Fairness (M = 3.48, SD = 1.06) moral foundations. Therefore, the second care message was also successfully manipulated.

To ensure that the loyalty moral foundation in the two loyalty messages was significantly different than the two care messages, two additional repeated measure ANOVAs were run. The first ANOVA examined if the loyalty moral foundation theme was more prevalent in the two COVID-19 loyalty messages than in the COVID-19 care messages. For this ANOVA, Maulachy's test indicated a violation of the sphericity assumption $\chi 2(5) = 50.17$, $p < .001$. Since sphericity is violated ($\varepsilon = .71$), Greenhouse-Geisser corrected results are reported. Results indicated that there is a significant difference in the loyalty moral foundation between messages $F(2.14, 185.97) = 29.17$, $p < .001$, $\eta_p^2 = .25$. Pairwise comparison indicated that *loyalty* messages one (M = 4.50, SD = 0.83) and two (M = 4.34, SD = 0.88) were perceived as representing the loyalty moral foundation more than the care messages one (M = 3.43, SD = 1.22) and two (M = 3.59, SD = 1.00). The two loyalty messages did not differ significantly from one another, indicating that they were both successfully manipulated.

The second repeated measures ANOVA examined if the care moral foundation theme was more prevalent in the two COVID-19 care messages than the two COVID-19 loyalty messages. Maulachy's test indicated a violation of the sphericity assumption $\chi 2(5) = 17.28$, $p = .004$. Since sphericity is violated ($\varepsilon = .88$), Greenhouse-Geisser corrected results are reported. Results indicated that there was a significant difference in the care moral foundation between messages $F(2.63, 228.46) = 41.80$, $p < .001$, $\eta_p^2 = .33$. Pairwise comparison indicate that *care* messages one ($M = 4.55$, $SD = .79$) and two ($M = 4.45$, $SD = .88$) were rated higher in representing the care moral foundation more than the loyalty messages one ($M = 3.25$, $SD = 1.23$) and two ($M = 3.74$, $SD = 1.00$). Additionally, the two care messages did not differ significantly from one another, indicating that they were both successfully manipulated.

Lastly, two paired sample *t*-test were calculated to compare the differences in perceived message novelty. The first paired sample *t*-test compared message novelty scores for the two loyalty messages. There was not a significant difference in novelty scores for the loyalty message one ($M = 2.91$, $SD = 1.18$) and loyalty message two ($M = 2.93$, $SD = 1.14$) conditions, ($t(87) = -0.17$, $p = .866$). Given that both mean scores are below three, the midpoint of the scale, the *loyalty* messages were not perceived as highly novel. The second paired sample *t*-test compared message novelty scores for the two care messages. There was a significant difference in novelty scores for care message one ($M = 2.51$, $SD = 1.22$) and care message two ($M = 2.27$, $SD = 1.04$) conditions, ($t(87) = 2.70$, $p = .008$). Although mean scores were low, the first care message was rated higher in perceived novelty than the second.

2.3.4.1 Summary

Since all messages were successfully manipulated, the messages chosen for the final experiment were based on the descriptive differences between mean scores. Since the first

loyalty message was descriptively rated higher in representing the loyalty moral foundation and lowest in perceived novelty, it was chosen for the final experiment (Table 2 or see Appendix A.2). Conversely, although the first care message was descriptively rated slightly higher in representing the care moral foundation than the second care message, the first care message was rated as more novel. Therefore, to ensure that the effects found in the final experiment were due to the moral frame and not perceived novelty, the second care message was chosen for the final experiment (Table 2). In Study Three, the first loyalty message, the second care message, and a control message (see Appendix A.2) were used in a cross-sectional experiment to investigate the impact of a morally matched message on active and passive resistance to message fatigue, as well as their overall perceived effectiveness.

3 Chapter 3: Study Three

3.1 Recruitment

Following approval from the University's Institutional Review Board, participants were recruited online via Qualtrics (www.qualtrics.com). Qualtrics software is an online platform that allows researchers to develop surveys and recruit participants based on the researcher's inclusion and exclusion criteria. Qualtrics partners with multiple panel providers to crowdsource individuals to participate in research for compensation. Participants are compensated according to the agreement that they have with their panel provider. In the current investigation, participants were offered between $3.00-4.00 to complete the online survey. Qualtrics offers access to hard-to-reach populations (Beymer et al., 2018) and has been previously validated as a tool to obtain online, self-report, convenience samples (Roulin, 2015).

Since the content of the experimental stimuli focused on wearing a mask in public places to prevent the spread of COVID-19, data were collected from states that had a statewide indoor mask mandate policy in place. Attitudes toward mask-wearing messages are likely to be less pertinent in states that have repealed the mask mandate; additionally, individuals in these states may have less fatigue towards COVID-19 mask messages. Data collection began February 15th in ten states with mask mandates (i.e., Illinois, Orogen, Washington D.C., New Mexico, California, New York, Nevada, Hawaii, and Connecticut). I continued to track the mask mandate requirements as data collection proceeded and began to exclude states once their mask mandate was lifted. Data collection ended on March 11th after the last two states (i.e., Oregon and Washington) lifted their mask mandate.

Participants were required to be 18 years of age or older and self-identify as either very conservative, conservative, liberal, or very liberal. Participants that identified as moderate or

leaning in either direction were directed to the end of the survey and were informed that they did not meet the criteria to participate. Recruiting based on political affiliation is a common procedure in moral framing research (see Feinberg & Willer, 2015) to obtain a natural fallout of morality scores for participants to score high on care and or loyalty foundations (Haidt et al., 2009).

3.2 Procedures

After providing consent, the Qualtrics survey asked participants their political affiliation and a series of questions to measure their care and loyal moral foundation scores (Graham et al., 2011). Participants who identified as moderate or leaning liberal/conservative were directed to the end of the survey and thanked for their time. In addition, participants who scored low on both the care and loyal moral foundation (i.e., a mean of 2.5 or below) were also directed to the end of the survey. A score of 2.5 or below indicates a minimal concern for the moral foundations (Haidt et al., 2009). To examine individuals' perceptions of a morally matched message, the screening criteria were pertinent to ensure a relatively equal sample of conservative and liberal participants that value the care and/or loyal foundations. Next, participants were asked questions regarding their pre-existing message fatigue towards COVID-19 mask-wearing, whether they viewed public health as a moral issue, and how often they currently wear a mask in public places. Subsequently, participants were randomly assigned to one of three COVID-19 health messages that urged individuals to wear a mask inside public places. As discussed in study two, one message highlighted the loyal moral foundation, one featured the care moral foundation, and the last message was a control with no moral frame. The control message included a black and white cartoon image of a mask and read "Please wear a mask in public places" (Appendix A.2). Following exposure to the stimuli, participants were asked how much attention they paid to the

message, their perceived level of threat, their level of reactance, and how effective they thought the message was. Lastly, participants were asked to fill out the remainder of the moral foundation questionnaire and demographic questionnaire.

3.3 Participants

A total of 345 participants, all residents of the U.S., completed the survey. After 24 hours of data collection, sampling was paused (N = 30) to examine completion time and adjust the screening criteria to ensure quality responses. The median completion time was nine minutes and 28 seconds; thus, a speeding check was added to terminate responses that finished sooner than or at half the medium completion time. Two attention checks were included in the survey; the first appeared after viewing the stimuli and stated "Carefully reading the questions is critical. Please choose Strongly Agree for this item." The second attention check appeared towards the end of the survey and was embedded in the final moral foundation question. As recommended by Graham et al. (2011), participants were asked to rate how much whether someone was good at math was relevant to their thinking when deciding if something is right or wrong. Participants who responded that this was somewhat, very, or extremely relevant were redirected to the end of the survey. Qualtrics panel services does not record partial responses nor participants that fail to meet any of the screening criteria (i.e., completion time, care/loyal moral foundation scores, political affliction, state) or attention checks. Ultimately, 345 participants met the screening criteria and passed both attention checks.

On average, these participants spent 34 seconds reading the care message (median = 29 seconds), 33 seconds reading the loyal message (median = 28 seconds) and 23 seconds reading the control message (median = 18 seconds). Detailed characteristics of the sample are provided in Table 4. Most participants were female (66.4%), Caucasian (77%), and currently residing in

the state of Washington (39.4%). Participants ranged in age from 18 to 90 with a mean age of 43 years (*SD* = 19.6). Additionally, 31% of participants identified as very liberal, 22% as liberal, 28% as conservative, and 19% as very conservative. For analyses, very liberal and liberal participants were combined (*n* = 182, 52.8%), as well as very conservative and conservative (*n* = 163, 47.2%) individuals. A majority of participants were from Washington (39.4%) and Oregon (31.9%), the two states that had the longest statewide mask mandate.

Table 4

Study Three Sample Characteristics (*N* = 345)

Characteristics	*n*	%
Gender		
Female	229	66
Male	103	30
Non-Binary	13	4
Ethnicity[a]		
White/Caucasian	294	77
Hispanic	26	6.8
African American	14	3.7
East Asian	13	3.4
Other	10	2.6
American Indian/Native American	9	2.4
South Asian	8	2.1
Multiracial	8	2.1
State of Residence		
Washington	136	39.4
Oregon	110	31.9
Illinois	46	13.3
Hawaii	21	6.1

New Mexico	13	3.8
California	8	2.3
New York	13	3.85
District of Columbia	3	.9
Nevada	2	.6
Connecticut	1	.3
Education		
High school diploma	118	34.2
Bachelor's degree	100	26
Associates degree	56	16.2
Master's degree	31	9
Trade school	23	6.7
Some high school	6	1.7
Ph.D. or higher	6	1.7
Prefer not to say	5	1.45

Note. [a] Participants could select more than one category

3.4 Measures

Unless otherwise indicated, all responses were measured on a 7-point Likert scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). See Table 5 for a zero-order correlation matrix, means, and standard deviations for all measured variables

Table 5

Zero-order Correlation Matrix, Means, and Standard Deviations

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Message Fatigue	-												
2. Freedom Threat	.76**	-											
3. Anger	.67**	.80**	-										
4. Negative Cognitions	.74**	.81**	.81**	-									
5. Reactance	.74**	.84**	.95**	.95**	-								
6. Inattention	.38**	.43**	.41**	.46**	.46**	-							
7. PME	-.58**	-.68**	-.66**	-.82**	-.78**	-.52**	-						
8. Moralization	-.60**	-.55**	-.50**	-.59**	-.57**	-.28**	.54**	-					
9. Loyal Message	-.07	.00	-.00	-.02	.01	-.17**	.03	.06	-				
10. Care Message	-.001	.01	.02	-.02	.00	.002	.06	-.04	-.52**	-			
11. Control Message	.08	-.01	-.02	.04	.01	.17**	-.09	-.02	-.50**	-.48**	-		
12. Liberal	-.68	-.62**	-.54**	-.59**	-.60**	-.22**	.46**	.50**	-.004	.02	-.02	-	
13. Conservative	.68	.62**	.54**	.59**	.60**	.22**	-.46**	-.50**	.004	-.02	.02	-1.00**	-
Mean	4.49	3.35	2.61	3.31	2.96	2.95	4.29	5.07	-	-	-	-	-
SD	1.79	1.97	2.14	2.20	2.07	1.27	2.03	1.78	-	-	-	-	-

Note. ** p <.01. Message Fatigue was computed by taking the average of the Overexposure, Redundancy, Exhaustion, and Tedium Scales, Reactance was computed by taking the average of the Anger and Negative Cognitions scales. PME = Perceived Message Effectiveness. Loyal Message, Care Message, Control Message, Liberal and Conservative were all coded such that 0 = no, 1 = yes.

3.4.1 Adherence

Participants' current mask-wearing behavior was assessed with one item, "How often do you currently wear a mask in an indoor public setting." Participants responded using a 7-point Likert scale ranging from: 1 (never), 2 (rarely, in less than 10 % of the chances I could have), 3 (occasionally, in about 30% of the chances I could have), 4 (sometimes, in about 50% of the chances when I could have), 5 (frequently, in about 70% of the chances when I could have), 6 (usually, in about 90% of the chances I could have), and 7 (every time; M = 5. 36, SD = 2.18).

3.4.2 Message Fatigue

Participants' pre-existing message fatigue towards COVID-19 mask-wearing health messages was assessed using So and colleagues' (2017) 17-item Likert scale comprising four dimensions: overexposure, redundancy, exhaustion, and tedium. Overexposure was measured with five items (e.g., "I have heard enough about how important it is to wear a mask in public places," α = .82, M = 4.59, SD = 1.63). Redundancy was measured using four items (e.g., "COVID-19 mask-related messages rarely provide new information," α = .91 M = 4.97, SD = 1.66). Exhaustion was assessed with four items (e.g., "I am tired of hearing about the importance of wearing a mask in public," α = .98, M = 4.14, SD = 1.77). Tedium was also measured with four items (e.g., "I find messages about wearing a mask in public places to be dull and monotonous," α = .97, M = 4.14, SD = 1.77). The four-factor scale performed reliably in

previous studies (α = .93; So et al., 2017). Reliability in the current study was .97 (M = 4.49, SD = 1.77). Higher values on this scale indicated more fatigue.

3.4.3 Moralization

The degree to which participants' attitudes towards public health and mask-wearing were moralized was measured using two items from Luttrell and Petty (2020). The items included: "To what extent are your views on wearing a face mask in public places connected to your core moral beliefs and convictions" and "To what extent do you think public health is a moral issue." Items were significantly correlated (r = .56, p < .001). The mean moralization score of the sample was 5.07 (SD = 1.78), with higher scores indicating greater moralization.

3.4.4 Inattention

Immediately after viewing one of three COVID-19 health messages, attention paid to the experimental stimuli was measured with four-items, responded to using a Likert scale, from Kim and So's (2018) study. Two items measured inattention and two measured attention; the latter were reversed-coded to capture inattention. The items were: "I rushed through the message without being really attentive to the information provided" (inattention); "I quickly browsed through the message rather than paying attention to the information provided" (inattention); "The message grabbed my attention" (attention reversed coded); and "I paid great attention to the information provided" (attention reversed coded). The scale performed reliably in previous studies (α = .82; Kim & So, 2018) and internal reliability in the current study was .71. Items were averaged into a composite score (M = 2.95, SD = 1.27). Higher scores indicate higher levels of inattention.

3.4.5 Perceived Freedom Threat

Following the inattention items, participants' freedom threat perceptions of the COVID-19 messages were assessed using Dillard and Shen's (2005) four-item Likert scale. Items included: "The message tried to make a decision for me," "The message tried to pressure me," "The message threated my freedom to choose," and "The message tried to manipulate me." The scale performed reliably in previous research (α = .83; Gardner & Leshner, 2016) and internal reliability in the current study was .94. Items were averaged into a composite score (*M* = 3.35, *SD* = 1.97), with higher scores indicating higher perceived freedom threat.

3.4.6 Reactance

Following Quick's (2012) recommendation, reactance towards the COVID-19 health message was operationalized as a combination of negative cognitions and anger. First, anger towards the message was assessed with Dillard and Shen's (2005) four-item measure, which asked participants to indicate the extent to which they felt angry, annoyed, irritated, and aggravated using a Likert scale ranging from 1 (*none of this feeling*) to 7 (*a great deal of this feeling*). Reliability for the current study was .97. The mean score for this sample was 2.61 (*SD* = 2.14), with higher scores indicating more anger towards the message. Next, negative cognitions were measured using Al-Ghaithi et al.'s (2019) three-item 7-point semantic differential, which asked participants to reflect on the thoughts they had while reading the COVID-19 health message (i.e., good/bad, favorable/unfavorable, positive/negative). Reliability for the current study was .97. Higher scores indicate more negative cognition (*M* = 3.31, *SD* = 2.19). The composite reactance score was calculated by averaging the scores on the anger and negative cognition scales (Dillard & Shen, 2005).

3.4.7 Perceived Message Effectiveness

Participants' perceptions of the message's effectiveness and persuasiveness were measured using three items from Luttrell and Petty (2020). Sample items include "Still thinking about the message you just read, how persuasive was the message to you?" and "How convincing do you think the message was?" Participants responded to each item using a scale ranging from 1 (*not at all persuasive/convincing)* to 7 (*extremely persuasive/convincing*). Reliability for the current study was .91. Items were averaged into a composite score with higher scores indicate more perceived message effectiveness (M = 4.29, SD = 2.03).

3.4.8 Moral Foundations

Participants' moral foundations were measured using Graham et al.'s (2011) 30-item scale, which has five factors: care, fairness, loyalty, authority, and purity. Each foundation is measured in two parts. The first section asks respondents to indicate how relevant each moral foundation is to them by rating how relevant different scenarios are on a scale from 0 (*not at all relevant)* to 6 (*extremely relevant*). Part two has respondents indicate how much they agree or disagree with a series of moral statements from 0 (*strongly disagree*) to 6 (*strongly agree*). The care foundation was measured using six items, although only five were retained (e.g., "When you decide whether something is right or wrong, to what extent is the following consideration relevant to your thinking: whether or not someone cared for someone weak or vulnerable," and "Compassion for those who are suffering is the most crucial virtue," α = .66, M = 3.94, SD = 0.71). The loyalty moral foundation was measured with six items (e.g., "When you decide whether something is right or wrong, to what extent is the following consideration relevant to your thinking: whether or not someone's action showed love for his or her country," and "I am proud of my country's history," α = .79, M = 2.26, SD = 1.09). The fairness foundation was

measured using six items, although only five were retained (e.g., "When you decide whether something is right or wrong, to what extent is the following consideration relevant to your thinking: whether or not someone acted unfairly," and "When the government makes laws, the number one principle should be ensuring that everyone is treated fairly," α = .63, *M* = 3.78, *SD* = 0.84). The authority foundation was measured with six items (e.g., "When you decide whether something is right or wrong, to what extent is the following consideration relevant to your thinking: whether or not someone showed a lack of respect for authority," and "Respect for authority is something all children need to learn," α = .76, *M* = 2.72, *SD* = 1.06). Last, purity was measured with six items (e.g., "When you decide whether something is right or wrong, to what extent is the following consideration relevant to your thinking: whether or not someone violated standards of purity and decency," and "Chastity is an important and valuable virtue," α = .80, *M* = 2.46, *SD* = 1.23). Composite scores for each moral foundation were computed, with higher scores indicating a stronger preference for each moral foundation.

3.5 Results

Prior to analyzing the hypotheses, data were screened for outliers and continuous variables were checked for normality assumptions. For hypothesis one, an analysis of variance (ANOVA) was used to examine whether there was a significant difference between perceived message effectiveness between the three COVID-19 health messages for conservatives (H1a) and liberals (H1b). Message exposure was the grouping variable (i.e., loyal, care, or control) and political affiliation was recoded such that *very conservative* and *conservative* were (1) and *very liberal* and *liberal* were (0). The select case function was used to examine the mean difference between message exposure for conservatives and then for liberals. H1(a) posited that conservatives would perceive the loyal message as more effective than the care and control

messages. Since the data did not violate the assumption of homogeneity of variance, Scheffe's post hoc comparison was used to examine differences among means. For conservatives, the results of the ANOVA revealed no significant differences in perceived message effectiveness depending on which message conservative participants saw, $F(2, 160) = .51$, $p > .05$, $R^2_{adj} = -.006$, $\eta_p^2 = .006$. A closer examination of the means indicated that the loyal message ($M = 3.50$, $SD = 2.17$) was rated slightly higher descriptively in message effectiveness than the care ($M = 3.31$, $SD = 1.09$) and control messages ($M = 3.11$, $SD = 1.89$). However, mean differences were not statistically significant. H1(b) posited that liberals would perceive the care message as more effective than the loyal or control message. Again, because the data did not violate the assumption of homogeneity of variance, a Scheffe post hoc comparison was used to examine differences among means. For liberals, the ANOVA results revealed no significant difference in perceived message effectiveness based on which message liberal participants saw, $F(2, 179) = 1.78$, $p > .05$, $R^2_{adj} = .008$, $\eta_p^2 = .019$. A closer examination of the means suggested that the care message ($M = 5.44$, $SD = 1.56$) was rated slightly higher descriptively than the loyal ($M = 5.15$, $SD = 1.75$) and control ($M = 4.89$, $SD = 1.38$) messages. However, mean differences were not statistically significant. Therefore, H1a and H1b were not supported.

H2 posited that moralization will moderate the effects of message type on perceived message effectiveness. Hayes (2018) PROCESS macro in SPSS model one was used to examine the interaction between the continuously measured variable of perceived message effectiveness and a three-level manipulated message type categorical variable. The models were conducted using percentile bootstrapped standard errors and 95% confidence intervals from 5,000 resamples (Hayes, 2018). Because the independent variable was multicategorical (i.e., containing at least three levels), the analysis was conducted following the guidelines provided by Hayes and

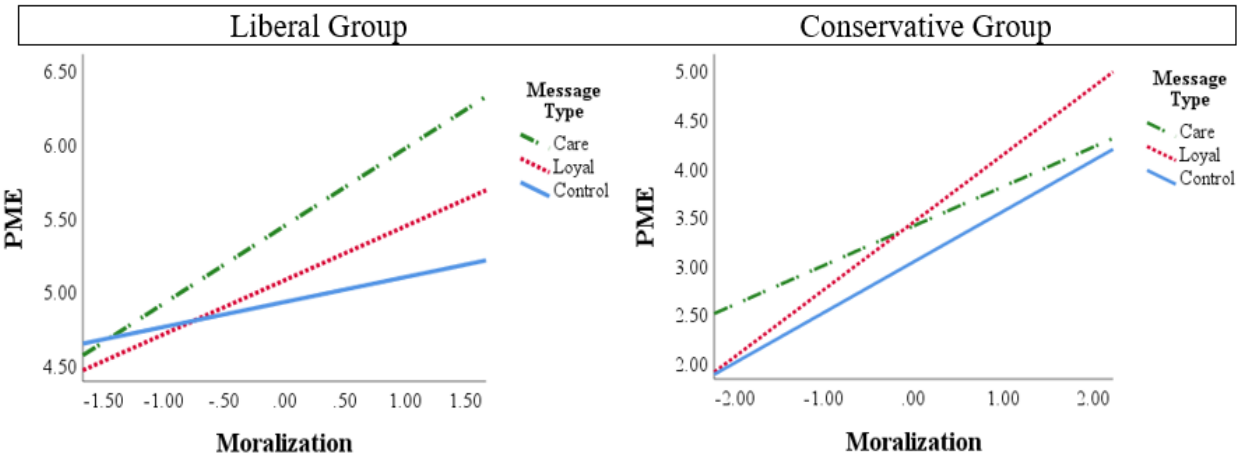
Preacher (2014). Specifically, indicator coding *k*-1 dummy variables were used, with the loyal message (D1) and the care message (D2) as independent variables and the control message as the referent category. Moralization was mean-centered to examine its interaction with the message type categorical variable. To examine the interaction effects for each political affiliation, SPSS select case function was used to run the model for conservatives and for liberals separately.

For conservatives, results revealed that the overall model was significant, $F(5, 157) = 9.65$, $p < .001$, $R^2 = .24$. However, examination of the interaction effects revealed that the two-way interaction between the loyal message (relative to the control message) and moralization on perceived message effectiveness was not statistically significant, $b = .17$, $SE = .19$, $t = 0.88$, $p > .05$, 95% CI [-0.21, 0.56]. The two-way interaction between the care message (relative to the control message) and moralization on perceived message effectiveness was also not statistically significant, $b = -.12$, $SE = .21$, $t = -0.56$, $p > .05$, 95% CI [-0.52, 0.29]. Although, results indicated a significant simple effect of moralization on perceived message effectiveness, $b = .52$, $SE = .14$, $t = 3.63$, $p < .05$, 95% CI [0.24, 0.80]. For liberals, the same process was repeated. Results revealed that the overall model was significant, $F(5, 176) = 4.89$, $p < .001$, $R^2 = .12$. However, examination of the interaction effects revealed that the two-way interaction between the loyal message (relative to the control message) and moralization on perceived message effectiveness was not statistically significant, $b = .19$, $SE = .21$, $t = 0.95$, $p > .05$, 95% CI [-0.21, 0.61]; and that the two-way interaction between the care message (relative to the control message) and moralization on perceived message effectiveness was also not statistically significant, $b = .36$, $SE = .19$, $t = 1.81$, $p > .05$, 95% CI [-0.03, 0.75]. In addition, contrary to the findings for conservatives, the simple effect of moralization on perceived message effectiveness

was not statistically significant for liberals, $b = .17$, $SE = .14$, $t = 1.24$, $p > .05$, 95% CI [-0.10, 0.44]. Thus, hypothesis two was not supported (see Figure 1).

Figure 1

Moralization and Message Type Interaction on Perceived Message Effectiveness



Note. Moralization is graphed -1SD below and +1SD above the mean. PME = Perceived message effectiveness.

H3 posited that following an exposure to a COVID-19 health message, preexisting message fatigue will be associated with increased inattention. A simple linear regression found that message fatigue significantly predicted inattention, $\beta = .38$, $t(343) = 7.56$, $p < .001$. Message fatigue also explained a significant proportion of the variance in inattention, $F(1, 343) = 57.19$, $p < .001$ $R^2_{adj} = .14$. Thus, hypothesis three was supported.

H4 posited that following exposure to a COVID-19 health message, inattention will be associated with decreased perceived message effectiveness. A simple linear regression demonstrated that inattention significantly predicated decreased perceived message effectiveness, $\beta = -.52$, $t(343) = -11.18$, $p < .001$. Inattention also explained a significant proportion of the variance in perceived message effectiveness, $F(1, 343) = 124.92$, $p <. 001$, $R^2_{adj} = .26$. Therefore, hypothesis four was supported.

H5 posited that moralization and exposure to a matched message will moderate the effects specified in H3 (i.e., that pre-existing message fatigue will predict increased inattention). Specifically, H5 predicted that a morally matched message and higher moralization will result in more attention paid (i.e., decrease inattention) to the message. Hayes (2018) PROCESS model 3, moderated moderation, was run to examine the three-way interaction effect of message fatigue, message condition, and moralization on inattention. Message fatigue was entered as the predictor variable, message type as the first moderator, moralization as the second continuous moderator, and perceived message effectiveness as the continuous outcome variable. For the message type condition, indicator coding *k*-1 dummy variables were used, with the loyal message (D1) and the care message (D2) as the independent variables and the control message as the referent category. Message fatigue and moralization were mean-centered to examine their interaction with the message type categorical variable. The select case function on SPSS was used to analyze this three-way interaction (message fatigue X message type X moralization) on inattention for liberals and then for conservatives.

For liberals, the results indicated that the overall model was significant, $F(11, 170) = 5.36$, $p < .001$, $R^2 = .26$. However, examination of the interaction effects revealed that the three-way interaction between message fatigue, the care message (relative to the control message), and moralization on inattention was not statistically significant, $b = .02$, $SE = .08$, $t = 0.21$, $p > .05$, 95% CI [-0.15, 0.18]. However, the results indicated a main effect and interaction on the loyal message (relative to the control message) on inattention. Specifically, for liberals, the loyal message led to a significant decrease in inattention, regardless of moralization, $b = -.69$, $SE = .19$, $t = -3.55$, $p < .05$, 95% CI [-1.07, -0.31]. For conservatives, results indicated that the overall model was significant, $F(11, 151) = 2.27$, $p < .05$, $R^2 = 0.14$. However, examination of the

interaction effects revealed that the three-way interaction between message fatigue, the loyal message (relative to the control message), and moralization on inattention was not statistically significant, $b = .05$, $SE = .12$, $t = 0.39$, $p > .05$, 95% CI [-0.17, 0.29]. Thus, hypothesis five was not supported.

H6 posited that following exposure to a COVID-19 health compliance message, preexisting message fatigue will positively predict freedom threat perceptions. A simple linear regression found that message fatigue predicted freedom threat perceptions, $\beta = .76$, $t(343) = 21.78$, $p < .001$. Message fatigue also explained a significant proportion of the variance in freedom threat perceptions, $F(1, 343) = 474.45$, $p < .001$, , $R^2_{adj} = .58$. Therefore, hypothesis six was supported.

H7 posited that freedom threat perceptions will be associated with increased reactance. A simple linear regression found that perceived freedom threat predicted reactance, $\beta = .84$, $t(343) = 29.08$, $p < .001$. Freedom threat perceptions explained a significant proportion of the variance in reactance, $F(1, 343) = 845.82$, $p < .001$, $R^2_{adj} = .71$. Thus, hypothesis seven was supported.

H8 postulated that reactance will be associated with a decrease in perceived message effectiveness. A simple linear regression found that reactance significantly predicted perceived message effectiveness, $\beta = -.78$, $t(343) = -22.80$, $p < .001$. Reactance explained a significant proportion of the variance in perceived message effectiveness, $R^2_{adj} = 60$, $F(1, 343) = 519.96$, $p < .001$. Thus, hypothesis eight was supported.

H9 posited that a matched message and moralization will moderate the effects of H6, which postulates that preexisting message fatigue predicts freedom threat perceptions. In other words, exposure to a morally matched message for people who have moralized attitudes towards mask wearing will result in decreased perceptions of freedom threat. Hayes (2018) PROCESS

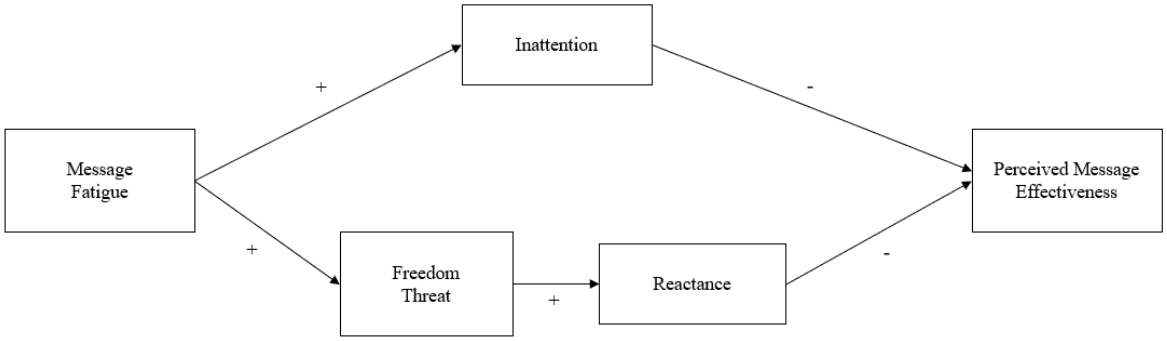
model 3, moderated moderation, was run to assess the three-way interaction effect of message fatigue, a morally matched message, and moralization on perceived freedom threat. Message fatigue was entered as the predictor variable, message type was entered as the first moderator, moralization was entered as the second moderator as a continuous variable, and freedom threat was the continuous outcome variable. Message fatigue and moralization were mean-centered to examine their interaction with the message type categorical variable. For the message type condition, indicator coding *k*-1 dummy variables were used, with the loyal message (D1) and the care message (D2) as the independent variables and the control message as the referent category. The select case function on SPSS was utilized to analyze this three-way interaction for liberals and then for conservatives.

For liberals, results indicated the overall model was significant, $F(11, 170) = 7.31$, $p < .05$, $R^2 = .32$. However, the three-way interaction between message fatigue, the care message (relative to the control message), and moralization on freedom threat perceptions was not statistically significant $b = -.11$, $SE = .09$, $t = -1.22$, $p > .05$, 95% CI [-0.28, 0.07]. Still, results indicated a significant main effect of the loyal message (relative to the control) on freedom threat perceptions. Specifically, results indicated a significant increase in perceptions of freedom threat upon exposure to the loyal message, $b = .46$, $SE = .21$, $t = 2.22$, $p < .05$, 95% CI [0.05, 0.87] for liberals only. For conservatives, the results indicate that the overall model was significant, $F(11, 151) = 15.71$, $p < .001$, $R^2 = .53$. However, examination of the three-way interaction between message fatigue, the care message (relative to the control message), and moralization on freedom threat perceptions was not statistically significant, $b = -.06$, $SE = .12$, $t = -0.05$, $p > .05$, 95% CI [-0.27, 0.26]. Thus, hypothesis nine was not supported.

Last, a path model with maximum likelihood estimation using Stata 17.0 was run to concurrently investigate the active (i.e., freedom threat to reactance) and passive (i.e., inattention) routes to decreased message effectiveness, as a result of preexisting message fatigue, as proposed by Kim and So (2018). The model contained seven observed variables: message fatigue, inattention, perceived freedom threat, reactance (comprised of negative cognitions and anger), and perceived message effectiveness (PME). No additional moderating paths (e.g., message type X moralization) were added to the model since no significant interactions were found in the initial analyses. Additionally, previous research suggests that political affiliation can impact perceived message fatigue and its impact on active resistance (Ball & Wozniak, 2021). To examine whether political affiliation impacts both active and passive resistance routes, affiliation was added to the model as supplementary analysis. To compare model fit between political affiliations, political ideology was treated as the grouping variable with liberals recoded as (1) and conservatives as (2). Model fit was evaluated using Hu and Bentler's (1995) criteria for acceptable fit. Criteria for good model fit include (1) low, ideally non-significant χ^2, (2) comparative fit index (CFI) > .90, (3) root mean square error of approximation (RMSEA) < .06, and (4) root mean squared residual (SRMR) < .08.

Figure 2

Hypothesized Path Model for Message Fatigues Active and Passive Routes of Resistance



3.5.1 Initial Model

The model was first run on the entire sample and did not yield an acceptable fit across indices, $\chi^2(5, N = 345) = 60.00$, χ^2/df (normed chi-square) = 12, $p < .001$, CFI = .95, RMSEA = .179 (90% CI = .140, .221), SRMR = .084. Specifically, the RMSEA score was > .06, meaning it falls above the desired criteria for acceptable fit (Hu & Bentler, 1995). However, it should be noted that some scholars state that the RMSEA indices should be interpreted with caution for models with small degrees of freedom (Kenny et al., 2015). Simulation studies find that models with small degrees of freedoms (≤ 5 *df*) have high rejection rates of correctly specified models, based on the RMSEA criteria, unless the model has a very large sample size (Kenny et al., 2015). Therefore, all paths in the model are still reported in addition to a supplementary analysis to improve model fit. All paths for the initial model were significant, specifically the path from message fatigue to inattention ($B = .27$, $SE = .04$, $\beta = .38$, $z = 7.58$, $p < .001$); inattention to perceived message effectiveness ($B = -.34$, $SE = .06$, $\beta = -.22$, $z = -5.82$, $p < .001$); message fatigue to perceived freedom threat ($B = .84$, $SE = .04$, $\beta = .76$, $z = 21.84$, $p < .001$); freedom threat to reactance ($B = .88$, $SE = .03$, $\beta = .84$, $z = 29.03$, $p < .001$); and reactance to perceived

message effectiveness (B = -.66, SE = .04, β = -.69, z = -17.93, p < .001). Although all paths were significant in the initial model, modification indices (MI) were used to improve overall model fit.

3.5.2 Revised Model

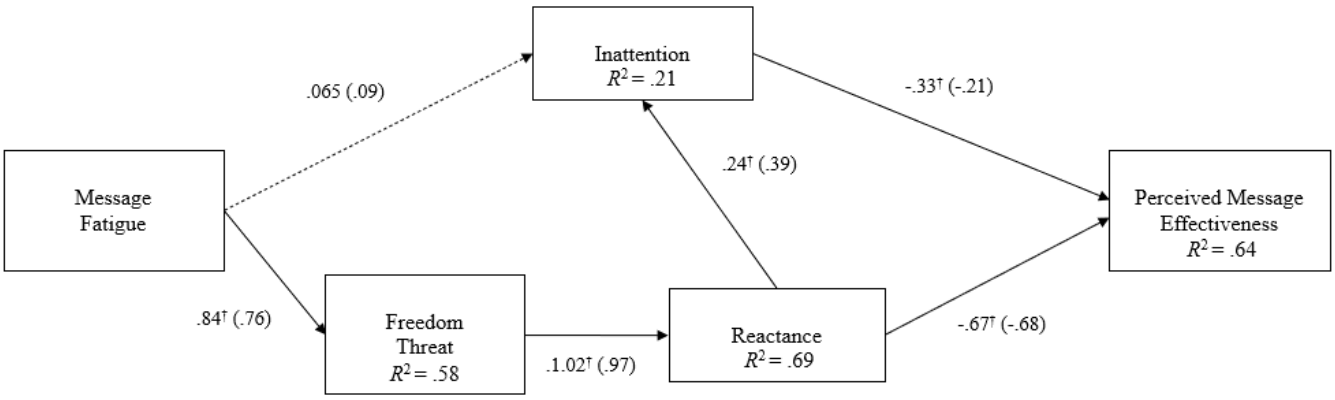
MI suggested that the error terms of freedom threat and reactance should be allowed to covary and yielded an expected χ2 change of 26.59. Correlating error terms is appropriate if there is probable cause for acquiescent response to attitudinal questions, if the correlated items are worded similarly, or if the questions relate to the same topic (Brown, 2015). The freedom threat items, as well as the items that make up reactance (i.e., anger and negative cognitions) both assess participants' attitude toward the message and are primarily negatively worded. Since these items relate to the same topic (i.e., attitude towards a mask message) and appeared directly after one another in the questionnaire, correlating these error terms is appropriate. However, correlating the perceived freedom threat and reactance error term still did not yield an acceptable model fit, $\chi^2(4, N = 345) = 32.33$, χ^2/df (normed chi-square) = 8.08, p < .001, CFI = .976, RMSEA = .143 (90% CI = .140, .221), SRMR = .084. Again, modification indices were used to improve the model's fit.

Modification indices suggested adding a direct path from reactance to inattention to yield an expected χ2 change of 27.48. Fit indices for this final model demonstrated good fit, $\chi^2(3, N = 345) = 3.67$, χ^2/df (normed chi-square) = 1.34, p = .254, CFI = .999, RMSEA = .026 (90% CI = .000, .098), SRMR = .011. The improvement of model fit was significant, $\chi^2_{change}(1) = 28.64$, p < .001 (See figure 3 for unstandardized path coefficients and standardized path coefficients). When the additional path from reactance to inattention was added, the path from message fatigue to inattention was no longer significant (B = .06, SE = .05, β = .10, z = 1.29, p = .19). In addition to

the effects reported in the model, indirect effects were examined using 95% confidence intervals. Confidence intervals that did not contain zero indicated significant mediation. Examination of the indirect effects indicate: (a) freedom threat mediated the relationship between message fatigue and reactance (95% CI .769, .933); (b) reactance mediated the relationship between freedom threat and inattention (95% CI .154, .332), as well as freedom threat and perceived message effectiveness (95% CI -.854, -.669); (c) inattention mediated the relationship between reactance and perceived message effectiveness (95% CI -.118, -.039); (d) freedom threat and reactance serially mediated the relationship between message fatigue and inattention (95% CI .128, .279); and (e) freedom threat, reactance, and inattention serially mediated the relationship between message fatigue and message effectiveness (95% CI -.743, -.575). Together, message fatigue, freedom threat, reactance, and inattention explain 61% of the variance in perceived message effectiveness.

Figure 3

Revised model



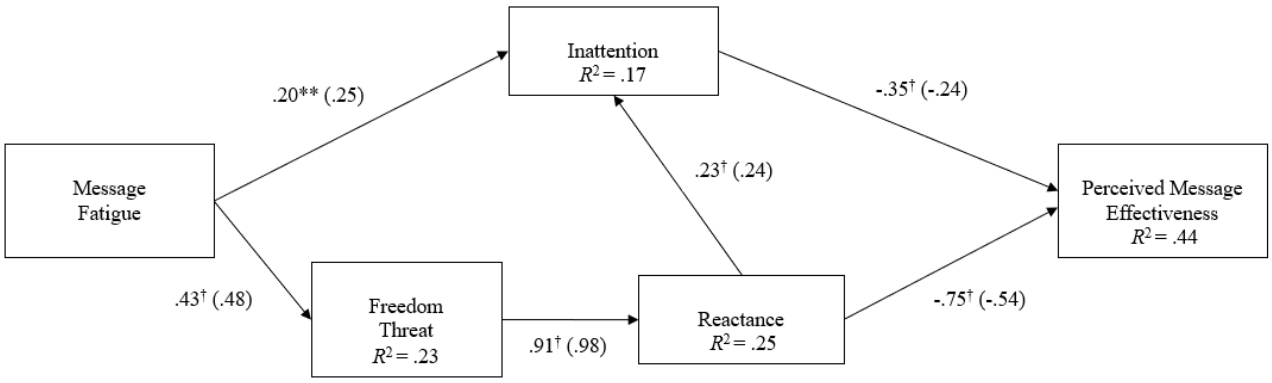
Note. Unstandardized estimates are listed first, followed by standardized estimates in paratheses. For model simplicity, error terms and covariances are not included in the figure. * $p < .05$, ** $p <$

.01, † $p < .001$. $\chi^2(3, N = 345) = 3.67$, $\chi^2/df = 1.34$, $p = .254$, CFI = .999, RMSEA = .026 (90% CI = .000, .098), SRMR = .011.

A multigroup analysis based on the revised model was run to assess differences between conservative and liberal political affiliations. First, group-level fit statistics were conducted to examine model fit and variance for each group. Group-level fit analyses indicate a strong model fit for liberals ($N = 182$, SRMR = .023, $\chi^2/df = 1.11$) and for conservatives ($N = 163$, SRMR = .028, $\chi^2/df = 2.45$). Interestingly, for the liberal group, the path between message fatigue and inattention became significant ($B = .20$, $SE = .05$, $\beta = .25$, $z = 3.28$, $p < .05$; see figure 4 for unstandardized path coefficients and standardized path coefficients of the liberal group). However, this path remained nonsignificant for conservatives ($B = -.04$, $SE = .10$, $\beta = -.04$, $z = -.447$, $p > .05$; see figure 5 for unstandardized path coefficients and standardized path coefficients of the conservative group).

Figure 4

Path model for liberal participants

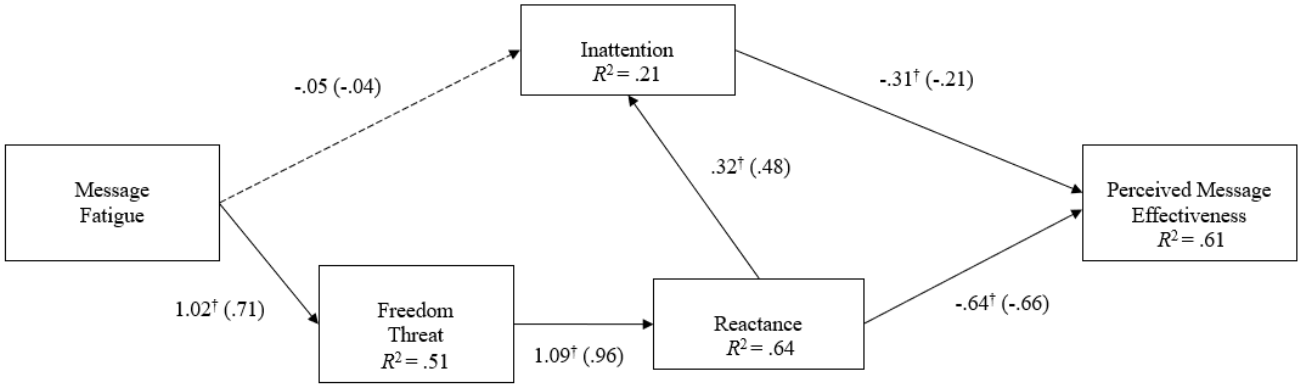


Note. Unstandardized estimates are listed first, followed by standardized estimates in paratheses. For model simplicity, error terms and covariances are not included in the figure. * $p < .05$, ** $p <$

.01, † $p < .001$. $\chi^2(6, N = 182) = 10.68$, $\chi^2/df = 1.78$, $p = .099$, CFI = .994, RMSEA = .067 (90% CI = .000, .132), SRMR = .025

Figure 5

Path model for conservative participants



Note. Unstandardized estimates are listed first, followed by standardized estimates in paratheses. For model simplicity, error terms and covariances are not included in the figure. * $p < .05$, ** $p < .01$, † $p < .001$. $\chi^2(6, N = 163) = 10.68$, $\chi^2/df = 1.78$, $p = .099$, CFI = .994, RMSEA = .067 (90% CI = .000, .132), SRMR = .025.

Additionally, the Wald test of invariance parameters across groups indicated that the path from message fatigue to freedom threat significantly varied between the two groups, χ^2 (1) = 35.84, p < .001. Specifically, pre-existing message fatigue led to greater freedom threat perceptions for conservatives ($B = 1.02$, $SE = .08$, $\beta = .71$, $z = 12.96$, $p < .001$) compared to liberals ($B = .43$, $SE = .06$, $\beta = .48$, $z = 7.32$, $p < .001$; see Table 6). For conservatives, message fatigue, freedom threat, reactance, and inattention explained 54% of the variance in perceived message effectiveness. For liberals, message fatigue, freedom threat, reactance, and inattention explained 33% of the variance in perceived message effectiveness. Table 7 presents the direct and indirect effects for liberals and conservatives.

Table 6

Wald Tests for Group Invariance of Parameters

	χ^2	*df*	*p*
Message Fatigue → Freedom Threat	35.84	1	.001†
Message fatigue → Inattention	4.24	1	.04*
Freedom Threat → Reactance	1.68	1	.19
Reactance → Inattention	0.89	1	.34
Reactance → Message Effectiveness	1.21	1	.27
Inattention → Message Effectiveness	.125	1	.72

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

Table 7

Direct and Indirect Effects for Liberals and Conservatives

	B	*SE*	*β*	*z*	*p*
Direct Effect					
Liberals					
Mess. Fatigue → Inattention	.20	.06	.25	3.28	< .001
Mess. Fatigue → FT	.43	.06	.48	7.32	< .001
Reactance → Inattention	.34	.07	.35	5.10	< .001
Inattention → PME	-.35	.07	-.24.	-4.10	< .001
Reactance → PME	-.75	.08	-.54	-9.11	< .001
Conservatives					
Mess. Fatigue → Inattention	-.05	.10	-.04	-0.45	> .05
Mess. Fatigue → FT	1.02	.08	.71	12.96	< .001
Reactance → Inattention	.30	.05	.45	6.50	< .001
Inattention → PME	-.31	.08	-.21	-3.86	< .001
Reactance → PME	-.64	.05	-.66	-12.10	< .001
Indirect Effect					
Liberals					

Mess. Fatigue → FT → Reactance → Inattention → PME	-.39	.06	-.34	-6.65	< .001
Mess. Fatigue → FT → Reactance → Inattention	.08	.03	.11	2.85	< .01
Mess. Fatigue → FT → Reactance	.39	.06	.47	7.12	< .001
FT → Reactance → Inattention → PME	-.75	.13	-.58	-5.91	< .001
FT → Reactance → Inattention	.21	.07	.23	2.86	< .01
Reactance → Inattention → PME	-.08	.03	-.06	-2.48	< .05
Conservatives					
Mess. Fatigue → FT→ Reactance → Inattention → PME	-.81	.09	-.51	-9.04	< .001
Mess. Fatigue → FT → Reactance → Inattention	.36	.08	.33	4.65	< .001
Mess. Fatigue → FT→ Reactance	1.12	.09	.68	12.00	< .001
FT → Reactance → Inattention → PME	-.81	.09	-.51	-9.04	< .001
FT → Reactance → Inattention	.36	.08	.33	4.65	< .001
Reactance → Inattention → PME	-.09	.03	-.102	-3.07	< .01

Note. FT = freedom threat and PME = perceived message effectiveness.

3.6 Post Hoc Analyses

To better understand why the message type manipulation was ineffective, the post hoc analyses examined mean differences between political ideology and mask adherence, message fatigue, each dimension of message fatigue, and the five moral foundations. First, if mask wearing adherence is high prior to message exposure for both political affiliations, then perceptions of the message's effectiveness may not alter, regardless of message type. Second, given the observed association between political ideology and message fatigue (see Table 5), a post hoc analysis was conducted between political affiliation, overall message fatigue, and each factor of message fatigue. First, differences in overall perceived message fatigue may clarify why the routes of active and passive resistance differed between political affiliations. Second, given the formative research in Study one, which indicated that the factors of message fatigue

(i.e., overexposure, redundancy, exhaustion, and tedium) may differ depending on political affiliation, each factor was investigated separately. Finally, to determine whether the previously discovered associations between political ideology and the five moral foundations held true for the present sample (Haidt & Graham, 2007) the last post hoc analysis examined the moral foundation scores of each political affiliation (i.e., very conservative, conservative, very liberal, and liberal). Implications of each post hoc and how they may have impacted the effectiveness of the moral frames are discussed further.

First, to examine if participants' mask-wearing behavior prior to the experiment differed between political ideologies, an independent samples *t*-test was conducted. Results indicated a significant difference in mask adherence between political ideologies, ($t(343) = -10.91$, $p < .001$). A closer examination of the means indicated that liberals wore their masks in public places more often ($M = 6.58$, $SD = 1.05$) than conservatives ($M = 4.48$, $SD = 2.34$). Furthermore, frequency distributions showed that 33% of conservatives reported wearing their masks every time while in public places, while 77% of liberals reported wearing their masks every time while in public places.[1]

Second, given the association between political ideology and message fatigue (see Table 5), a post hoc analysis was conducted to determine if pre-existing message fatigue differed significantly between liberal and conservative political ideology. The results of an independent samples *t-test* indicated that there was a significant difference in message fatigue between liberal and conservative political ideology ($t\ (343) = -16.95$, $p < 0.05$). A closer examination of the means indicated that liberal participants reported less pre-existing message fatigue ($N = 182$, $M = 3.35$, $SD = 1.36$) than conservative participants ($N = 163$, $M = 5.77$, $SD = 1.28$).

Third, a MANOVA was run to examine if participants differed in between the four factors of message fatigue. Political ideology served as the independent variable and overexposure, redundancy, exhaustion, and tedium served as the dependent variables. The MANOVA established that there was a statistically significant difference in message fatigue based on political ideology, $F(1, 343) = 80.108$, $p < 0.01$; Wilks' Lambda = 0.515, $\eta_p^2 = 0.49$, with significant univariate main effects for overexposure, $F(1, 343) = 223.29$, $p < 0.01$, $\eta_p^2 = 0.39$, redundancy, $F(1, 343) = 175.51$, $p < 0.01$, $\eta_p^2 = 0.39$, exhaustion, $F(3, 343) = 305.401$, $p < 0.01$, $\eta_p^2 = 0.47$, and tedium, $F(1, 343) = 196.23$, $p < 0.01$, $\eta_p^2 = 0.37$. The means and standard deviations for all the four groups are presented in table 8 below.

Table 8

MANOVA Examining the Relationship Between Political Ideology and Message Fatigue

	Conservative	Liberal
Variable	(n = 163)	(n = 182)
1.Overexposure	5.69 [a] (1.15)	3.62[b] (1.39)
2.Redundancy	5.99[a] (1.07)	4.06[b] (1.40)
3.Exhaustion	5.90[a] (1.56)	2.74[b] (1.74)
4.Tedium	5.49[a] (1.57)	2.96[b] (1.62)

Note: Means are reported, with standard deviations in parentheses. All super-scripts indicate differences significant at $p < .01$.

The last post hoc analysis was conducted to examine the relationship between political ideology and moral foundations. Specifically, a multivariate analysis of variance (MANOVA) was used to determine whether the moral foundations scores of the present sample were consistent with previous research (Haidt & Graham, 2007). To better understand why the morally matched messages were ineffective, the analysis separated each level of political

ideology to examine differences between people who identify as very conservative, conservative, very liberal, and liberal. Political ideology (i.e., very conservative, conservative, liberal, and very liberal) served as the independent variable and care, loyalty, fairness, authority, and purity served as the dependent variables. The MANOVA established that there was a statistically significant difference in moral foundations based on political ideology, F (15, 930) = 26.76, $p < 0.05$; Wilks Lambda = 0.37, $\eta_p^2 = 0.28$, with significant univariate main effects for care F (3, 341) = 14.71, $p < 0.05$, $\eta_p^2 = 0.12$, loyalty F (3, 341) = 66.60, $p < 0.05$, $\eta_p^2 = 0.37$, fairness F (3, 341) = 6.06, $p < 0.05$, $\eta_p^2 = 0.05$, authority F (3, 341) = 74.06, $p < 0.05$, $\eta_p^2 = 0.39$ and purity F (3, 341) = 76.21, $p < 0.05$, $\eta_p^2 = 0.40$. These findings mirror previous research on political ideology and moral foundations (Graham et al., 2009). The means and standard deviations for all the four groups are presented in Table 9 below.

Table 9

MANOVA Examining the Relationship Between Political Ideology and Moral Foundations

Variable	Very conservative (n = 66)	Conservative (n = 97)	Liberal (n = 76)	Very liberal (n = 106)
1. Care	3.71^{a} (0.79)	3.73^{a} (0.67)	4.06^{b} (0.65)	4.27^{c} (0.62)
2. Loyal	3.49^{a} (0.71)	3.02^{b} (0.87)	2.42^{c} (0.91)	1.72^{d} (0.94)
3. Fair	3.56^{a} (0.98)	3.68^{a} (0.78)	3.72^{a} (0.85)	4.05^{b} (0.72)
4. Auth	3.39^{a} (0.85)	3.30^{a} (0.70)	2.71^{b} (0.81)	1.79^{c} (0.95)
5. Purity	3.23^{a} (1.08)	3.23^{a} (0.84)	2.23^{b} (0.98)	1.45^{c} (0.97)

Note: Means are reported, with standard deviations in parentheses. Means with different subscripts differ at $p < .05$.

4 Discussion

Guided by the message fatigue literature (So et al., 2017) and moral foundations theory (Haidt & Joseph, 2004), there were three main purposes of this dissertation. The first purpose was to identify health promotion message content contributing to perceived message fatigue in the context of COVID-19. The second purpose was to reframe this content using moral rhetoric and experimentally test the effects of morally framed health messages that match or mismatch an individual's moral foundation. The third purpose was to investigate the boundary conditions of moral frames on the message's perceived effectiveness. Toward addressing these purposes, three studies were conducted. In Study One, focus group participants shared their perspectives on the types of COVID-19 health compliance messages they perceived as fatiguing and the emotional and cognitive consequences of this exhaustion. In Study Two, four COVID-19 health messages promoting wearing a mask inside public places were constructed with two different moral frames. Out of the five moral foundations proposed by Haidt & Jospeh (2004), the loyalty and care moral foundations were chosen to frame the messages. These two foundations were chosen based on previous research linking conservative ideologies to the loyalty foundation and liberal ideologies to the care foundation (Graham et al., 2009). In Study Two, the messages were piloted, and the two that best represented each moral foundation were chosen for the experiment. In Study Three, participants were randomly assigned to read one out of three COVID-19 mask promotion messages that represented either the *care* moral foundation, the *loyalty* moral foundation, or a control condition. They were then asked a series of questions to explore the potential effects of moral matching on mitigating resistance from message fatigue. The collective results of these three studies are discussed below, followed by the theoretical and practical

implications of the findings, the limitations of each study, and suggestions for future research exploring message fatigue and moral rhetoric.

4.1 Review and Discussion of Findings

4.1.1 Boundary Conditions of Moral Matching

First, in the hope of shedding light on two parallel lines of persuasion research, hypothesis one and two investigated the boundary conditions of moral matching. In line with the moral reframing literature, Hypothesis (H1a) predicted that conservatives would perceive the COVID-19 health compliance message with the moral loyalty frame as more effective than the care framed message and control message. Hypothesis (H1b) predicted that liberals would perceive the care framed message as more effective than the loyalty and control messages. Although descriptive means indicated that both conservatives and liberals rated their morally matched message as slightly more effective than the unmatched and control messages, the difference was not significant. Therefore, hypothesis one was not supported. One explanation for these null findings may be the degree to which participants already support and adhere to mask wearing messages. Moral reframing studies to date have found no significant effects among participants who already agree with the issue advocated for in the message (Feinberg & Willer, 2015, 2019). Therefore, for liberal participants, they may have rated each message relatively high in effectiveness because they support wearing masks in public places, regardless of how it is framed. The post hoc analysis which examined behavioral adherence to mask wearing indicated that liberals were significantly more likely to wear their mask than conservatives, offering further support for null effects among those that already support the issue. Future research should measure participants initial support towards the issue prior to experimental conditions.

Additionally, for conservatives, the null effects of a morally matched message on perceived message effectiveness may be due to the moral frame (i.e., loyalty) chosen to reframe the issue. the effectiveness of a moral match will depend on which moral foundation(s) is highlighted in the message and whether the target audience deems it relevant to the context (Feinberg & Willer, 2019). Although research found that anti-mask wearing beliefs for conservatives were associated with ingroup loyalty and identification with America, conservatives also frequently expressed a desire not to wear a mask due to concerns about freedom of choice and individual rights (Kaplan et al., 2021). One explanation for this finding may come from previous literature by Iyer and colleagues (2012) who proposed a sixth foundation, liberty/oppression, which is concerned with feelings of resentment and reactance toward those who dominate them or limit their liberty.

Simply stated, although loyalty messages should significantly persuade conservatives, participants from this study may have resonated with a message framed around choice, individual rights, and liberty/oppression. This foundation has been linked to libertarian ideologies, yet additional research is needed to understand how it fits in with the primary foundations (Iyer et al., 2012). However, it is reasonable to assume that such ideologies are held in high regard by conservatives, particularly in the context of COVID-19. Given how important the moral foundation of liberty was to conservatives regarding mask wearing (Kaplan et al., 2021), this foundation may have been a more effective frame to highlight for conservatives. Consequently, future research will need additional formative research to investigate the target audiences' prior held attitudes and behaviors and formative research on which moral foundation might be the most relevant within the respective health context for individual demographics.

Furthermore, to investigate the boundary conditions of moral matching, the second hypothesis (H2) predicted that moralization (i.e., the degree to which someone views public health/mask-wearing as a moral issue) would strengthen the perceived effectiveness of a morally matched message. Although the regression model did not find a significant interaction, the simple slopes (see Figure 1) show that as moralization increased, so did the "matched" message's perceived effectiveness for conservative and liberal participants. These results indicate that moralization plays a role in how a message is perceived; however, the strength of the interaction (message type X moralization), may depend on how moralization is measured. In the current study, participants were asked how much they see public health and mask wearing as a moral issue. However, measuring the degree to which participants see their political affiliation connected to their core moral values may be a better indicator of the effects of moral frames. Given the associations between moral foundations and political affiliation (Haidt & Graham, 2007), a morally framed message, that represents one's ideology (i.e., loyal), may be more effective to the degree that they view their political ideology as connected to their morals, as opposed to the issue. Preliminary data by Luttrell (2022) supports the notion that political moralization moderates the effects of a morally matched message.

Additionally, although the interaction effect between moralization and message type was not significant, there was a significant simple effect of moralization on perceived message effectiveness for conservative participants (H2), This suggests that, for conservatives, as attitudes toward public health/mask-wearing become moralized, the overall perceived effectiveness of the messages significantly increases. Because moral convictions are intrinsically motivating and are a unique attitude strength indicator (Skitka et al., 2005), moralization may affect how a message is processed regardless of its frame. This means that the more conservatives believed wearing a

mask was a moral issue, the more effective they thought the messages were, regardless of their frame. This finding partially supports Luttrell and colleagues (2019; Lutrell & Petty, 2020) hypothesis that a message will be perceived as effective to the extent that one's attitudes are grounded in moral concerns. However, on the contrary, the current study failed to find a main effect of moralization on overall message effectiveness for liberal participants. Once again, a reason for this null effect may be because liberals already support and adhere to wearing a mask in public places. Therefore, whether their attitudes are moralized or not, has no effect on the overall perceived effectiveness of the messages. Alternatively, this null finding may be attributed to a ceiling effect for liberals. Since liberals overall perceived message effectiveness scores approach the upper limit of the scale (M = 5.17, Median = 5.33, SD = 1.59), as well as their moralization scores (M = 5.91, Median = 6.5, SD = 1.35), there may not have been enough variance for a meaningful analysis.

4.1.2 Fatigue and Moral Matching on Passive Resistance

Hypotheses three through five examined the passive route of message resistance (i.e., inattention) from pre-existing message fatigue and the moderating effects of a morally matched message and attitude moralization on reducing inattention. The third and fourth hypotheses were supported indicating that pre-existing message fatigue predicts inattention towards subsequent messages (H3), and inattention towards a COVID-19 message significantly decreased perceived message effectiveness (H4). These results yield support for disengagement as an explanatory mechanism for message avoidance, which may reduce the efficacy of subsequent public health messages (Kim & So, 2018). Indeed, these findings substantiate previous research, which found that passive resistance disrupts message processing and the perceived effectiveness of subsequent health campaign messages (Kim & So, 2018; Martinez-Gonzalez et al., 2021).

Moreover, the fifth hypothesis (H5) predicted that a morally matched message and attitude moralization would improve message processing by decreasing inattention. Results did not find support for an interaction effect between a morally matched message and moralization on decreasing inattention. Despite prior research indicating that individuals are more likely to engage with content that aligns with their morals (Brady et al., 2020; Hahn & Tamborini, 2020), as well as preliminary evidence from study one suggesting that liberals gravitated toward the morally aligned message, the results contradicted the hypothesized effect. Specifically, liberals were more likely to pay attention to the loyalty framed message, but no effect was found for the care message. The unexpectedness of this finding might be explained by persuasion research on message scrutiny and novelty.

First, Clark and Wegener's (2013) Discrepancy Motives Model (DMM) argues that encountering a counter-attitudinal message can increase message processing. That is, a message not in line with one's initial attitude will motivate individuals to elaborate on the message to either defend or bolster their beliefs (Clark & Wegener, 2013). Although the COVID-19 mask-wearing message may not have been inherently counter to liberal participants' beliefs, the moral frame used to promote mask-wearing behaviors could have been. A post hoc analysis indicated that liberals scored significantly lower on the loyal moral foundation compared to conservatives (see Table 9). The discrepancy between the message receiver's core moral foundations and the message's moral frame may have motivated information processing, similar to a novelty effect (Petty & Cacioppo, 1986). Indeed, although Study Two did not indicate that the loyal message was perceived as highly novel, findings from a content analyses of the CDC's media communication find that their messages encouraged compliance to health measures with frames that align with the care moral foundation (e.g., protecting others; Kandzer et al., 2022).

Therefore, advocating for compliance through nationalistic language and appealing to one's patriotic duty may have been novel to liberal participant, and therefore leading to greater attention paid toward the message.

Additionally, the discrepancy between these findings and the focus group data from Study One, which found that the sample care message "grabbed their [liberals] attention," may be attributed to how the messages were presented. First, focus group participants were shown all sample messages simultaneously and then asked to discuss each. In this context, when presented with several messages (i.e., two with no moral frames, a loyal frame, and a care frame), liberals may have gravitated towards the message that supported their moral foundation because it was in direct comparison with the other messages, particularly the loyalty message. Brady et al.'s (2020) Model of Moral Contagion (MAD) posits that when one's in-group values are threatened, they will be motivated to affirm their values through outward expression. Therefore, liberal participants may have expressed their affinity for the care message as a direct response to the perceived threat of the loyalty message. As indicated by the results of hypothesis nine (H9), liberals perceived the COVID-19 loyalty framed message as highly threatening. Therefore, in the context of the focus groups, they may have been motivated to openly reaffirm their values by acknowledging the moral language used in the care message. Conversely, as discussed above, when presented with either a care or loyal message, as in study three's experiment, liberals may have been more motivated to process the threatening message (Clark & Wegener, 2013).

4.1.3 Fatigue and Moral Matching on Active Resistance

Hypotheses six through nine examined the active route of message resistance (i.e., freedom threat and reactance) from pre-existing message fatigue and the moderating effects of a morally matched message and attitude moralization on reducing perceived freedom threat. As

hypothesized, pre-existing message fatigue predicted greater perceived freedom threat (H6). Results also indicated that as freedom threat increases, reactance (i.e., anger and negative cognitions) also increases (H7). In addition, the findings showed that increased reactance to a COVID-19 health message was associated with lower perceptions of a message's effectiveness (H8). These results contribute to previous research linking pre-existing message fatigue to the reactance process (Kim & So, 2018; So et al., 2017). Notably, Kim and So's (2018) original conceptualization and operationalization of message fatigue as a motivation to resist subsequent messages did not initially explore the role of freedom threat. However, previous research has extended Kim and So's (2018) work by modeling reactance as a two-step process and found that message fatigue did elicit freedom threat perceptions (Ball & Wozniak, 2021; Martinez-Gonzalez et al., 2021; Reynolds-Tylus et al., 2020). Further contributing to this line of research, the current results show that increased message fatigue triggers freedom threat perceptions towards subsequent messages regardless of the type of message. In other words, results of hypothesis nine (H9) did not find a significant decrease in freedom threat upon exposure to a morally matched message. Additionally, there was not a significant interaction between a morally matched message and attitude moralization on freedom threat perceptions. Therefore, a morally matched message and moralization did not significantly decrease freedom threat perceptions stemming from message fatigue. Still, this finding holds implications for the role message fatigue plays in active resistance. Specifically, it supports previous findings that message fatigue is an antecedent to perceived freedom threat (Ball & Wozniak, 2021; Martinez-Gonzalez et al., 2021; Reynolds-Tylus et al., 2020)

So and colleagues (2017) theorized that reactance is a likely response from fatigued audiences to unwanted message exposure. Drawing from cognitive appraisal theory (Lazarus,

1991), So et al. (2017) argue that when fatigued audiences are subjected to additional messages on a related topic, they will perceive the exposure as interfering with their goals, likely leading to active resistance (Kim & So, 2018). In other words, unsolicited exposure to a message that an individual has grown tired of hearing may impede their perceived freedom to choose whether or not to withstand exposure, however, little research has examined the role message fatigue plays in perceiving and responding to different health message frames (Kim & So, 2018). The present results did not find an interaction effect between fatigue and message type, however results indicated that additional exposure to a health message did lead to perceptions of freedom threat for liberals, depending on the message.

Specifically, results for hypothesis nine (H9) found a significant main effect of exposure to the loyalty message on increased freedom threat perceptions for liberals. This message frame may have been perceived as forceful by liberals (Rosenberg & Siegel 2018; Shen, 2015), who, once again, typically do not support the loyalty foundation (Graham et al., 2009). Forceful language (e.g., “must,” “ought”) has received a substantial amount of empirical support as a determinant of increasing freedom threat perceptions (Quick, 2012). The loyal message contained dogmatic language, such as "it is our patriotic duty” and “fight for our way of life.” These phrases may have been perceived as forceful with a clear intent to persuade, particularly to individuals who do not subscribe to those values (Shen, 2015). Furthermore, the bright red graphic used in the loyalty frame may have exacerbated freedom threat perceptions for the liberal participants. Previous research has shown that conveying a threating health message in red (compared to gray or green) can amplify the degree to which freedom threating language elicits perceived freedom threat (Armstrong et al., 2019). As a result, perceptions of the message's

forcefulness, in conjunction with the red graphic, may explain the main effect of increased freedom threat perceptions among liberal participants.

4.1.4 Revisiting the Dual Routes of Message Resistance

The final analysis aimed to replicate previous research on message fatigue as a barrier to persuasion by concurrently leading to active and passive routes of resistance. Previous research has found support for So et al.'s (2017) initial conjecture that inattention and the reactance processes work as dual mechanisms leading to ineffective persuasive outcomes (Guan et al., 2022; Martinez-Gonzalez et al., 2021; Reynolds-Tylus et al., 2020; So, 2021). Unlike the previous research that found support for message fatigue simultaneously leading to these two routes of resistance, the path model for the present investigation revealed that inattention was not a significant mediator of fatigue to decreased perceived message effectiveness (see Figure 3). Rather, it was discovered that inattention acted as a mediator between reactance and perceived message effectiveness. This finding may be understood by considering the various freedom restoration behaviors individuals might enact to restore their sense of autonomy (Brehm, 1966).

When individuals perceive that their freedom has been threatened, they tend to act on their negative cognitions and anger (i.e., reactance) directly or indirectly (Burgoon et al., 2002; Rosenberg & Siegel 2018). Disparaging the message is an indirect freedom restoration behavior that entails giving the message a negative or unfavorable evaluation (Quick & Stephenson, 2007a). Disengagement (i.e., inattention) may be an additional freedom restoration behavior akin to disparaging the message. Meaning, participants' assessments of the message's ineffectiveness at capturing their attention may have been motivated by a desire to denigrate the message. Alternatively, when reactance was triggered upon exposure to an unwanted or freedom-threatening message, participants may have disengaged entirely from the message (i.e.,

inattention). Overall, this may have led to a decrease in the message's effectiveness as the participants were no longer scrutinizing the message.

These findings add nuance to the current debate in the literature, which holds that either inattention (So & Kim, 2018) or the reactance process (Reynolds-Tylus et al., 2020) is a more significant barrier to effective health communication. It may be that the context and demographic factors need to be assessed to determine how the audience chooses to resist unwanted messages (i.e., passively or actively). For example, results indicated that when political ideology was added to the path model, the path from message fatigue to inattention remained insignificant for conservative participants only (see Figure 5). For liberals, message fatigue remained a significant determinant of inattention, which mediated the relationship to decreased message effectiveness (see Figure 4). A closer examination of the individual components of message fatigue may shed light on these findings and add clarity to the ongoing debate about its effects.

Message fatigue is operationalized as a third-order single factor model comprised of the message environment (i.e., overexposure and redundancy), and audience response (i.e., exhaustion and tedium; So et al., 2017). Overexposure and redundancy refer to the environmental factors that induce fatigue, while exhaustion and tedium refer to an audiences' "subjective perceptions of those environmental factors" (So et al., 2017, p. 9). In other words, the message environment assesses how frequently the audience is exposed to similar types of messages and how redundant the messages and their content are. The audience response assesses individuals' emotional state in response to the environment. The extent to which message fatigue leads to active or passive routes to resistance (or both) may be determined by either the audiences' response and/or the message environment. For instance, increased exhaustion and tedium may lead to heightened perceived freedom threat when exposed to an unwanted message;

while increased overexposure and redundancy may lead to disengagement, and possibly reactance if the subsequent message threatens their freedom. Post hoc analyses and preliminary evidence from Study One suggests that the way message fatigue manifests and is acted upon may differ depending on individuals' perceptions of the message environment and their emotional response towards the environment.

Specifically, for conservatives, a post hoc analysis indicated that conservatives scored significantly higher on the environmental (i.e., overexposure and redundancy) and audience response (i.e., exhaustion and tedium) factors of message fatigue than liberals (see Table 8). Additionally, in Study One, a conservative/leaning conservative participant stated, "everyone was like trying to force it [health compliance measures] on me, and that was like kind of irritating and like pushed me away…when it is very repetitive, like do this, wear your mask, get vaccinated, it almost makes me not want to more." Moreover, conservatives in Study One also reported feeling frustrated towards inconsistent messaging, leading to increased frustration and active resistance towards subsequent messages (see Table 1). When one is highly fatigued because of the message environment (i.e., overexposure, redundancy, inconsistent messages) and are significantly emotionally exhausted, exposure to additionally health messages may solely trigger reactance, particularly if one's initial attitudes are counter to the messages appeal. Again, conservatives' low adherence to mask wearing suggests that their initial support for mask wearing was low. Together, these findings support the results of the path model for conservatives indicating that the constant exposure to redundant COVID-19 messages primarily motivated active resistance (see Figure 5).

Additionally, for liberal participants, the post hoc analysis shows that across all four factors of message fatigue, they scored the lowest on the audience response dimensions,

suggesting that they are significantly less emotionally exhausted by COVID-19 mask messages than conservatives (see Table 8). Additionally, focus group findings from Study One indicated that liberals felt desensitized, yet also reassured, towards repeated COVID-19 messages. One participant stated, “I think, like, for me it was less fatigue, and it was almost more reassuring to see that constantly… it was kind of like reassuring that people are still taking it seriously and are still considering others’ health.” According to social psychology research on attitude strength, the more important an individual's attitude toward an issue is, the more stable, durable, and impactful that attitude becomes over time (Luttrell & Sawicki, 2020). As a result, because their initial positive attitudes and prior behavioral compliance toward the messaging were strong, liberal participants may experience less fatigue, particularly emotional exhaustion, from repeated exposure to COVID-19 health messages. Thus, if an individual initially supports the message and their fatigue is primarily motivated by the message environment, active and passive resistance may be contingent on the content of the subsequent message. The path model results for liberals (see Figure4) and conservatives (see Figure5), as well as data from the focus groups (see Table1), suggests that prior attitudes, behavior, and demographics of the audiences can influence the type and direction of resistance on decreasing the message's effectiveness.

4.2 Theoretical Implications

The results of this dissertation contribute to the existing literature on moral rhetoric and message fatigue in two important ways. First, this dissertation extends previous research on moral framing and moralization as it conceptualizes a "moral match" as a moral message that aligns with an individuals preferred moral foundation when their attitudes toward the issues are moralized. This conceptualization bridges two large bodies of persuasion research, moral reframing (Feinberg & Willer, 2015, 2019) and moral matching (Luttrell et al., 2019; Luttrell &

Petty, 2020). Although no statistically significant effects were found for the message type X moralization interaction on perceived message effectiveness, descriptive results (see Figure 1) suggest that moralization and message type may have some effect on how a message is perceived. Meaning, that a morally matched message will be effective to the degree that one's attitudes are moralized. Therefore, as conceptualized here, moral matching is worthy of further examination. As mentioned previously, future research should explore if political moralization is a more appropriate measure to determine the effects of a morally matched message (Lutrell, 2020).

Furthermore, the finding that liberal participants were significantly more attentive and threatened by the loyal message has theoretical implications for the unintended effects of moral rhetoric. To date, the literature on moral reframing maintains that framing a persuasive message with a moral foundation an individual does not endorse (e.g., liberals receiving a loyalty framed message) should have no adverse effect on the persuasion process if the recipient already supports the issue (Feinberg & Willer, 2019). As a result, the widespread use of moral frames has been strongly advocated, such that "if the type of messaging has no effect on the untargeted group [those who already support the issue], but morally reframed messages positively influence the targeted group [those that do that], then speakers in these situations should rely on morally reframed message" (Feinberg & Willer, 2019, p. 6). However, the current investigation found that a morally mismatched message *can* have unintended effects on the untargeted group by increasing their resistance to persuasion. Indeed, although liberals are more likely than conservatives to agree with mask mandates (Doherty et al., 2020), the loyalty frame message significantly increased active resistance for liberals only. This finding contributes to a recent line of research cautioning against the use of moral frames, suggesting that they can further polarize

individuals (Kodapanakkal et al., 2022). This research also indicates that moral frames can further moralize (i.e., cementing how important an issue is to their morals) people by strengthening their attitudes and making them more unwilling to compromise with others (Kodapanakkal et al., 2022). Reactance may play a role in the moral frames' ability to polarize individuals further. Demonstrated in the current findings, the reactance process can be triggered by encountering a persuasive message framed with moral values that one does not endorse, which may lead individuals to dissociate from those who do support such values (Kodapanakkal et al., 2022).

The second theoretical contribution of this dissertation is the reconceptualization of message fatigue's active and passive resistance routes. Although previous research supports message fatigue as motivating both disengagement and reactance, the effects of these routes on persuasion outcomes have been inconsistent. For example, So and Kim (2018) found that passive resistance (i.e., inattention) decreased behavioral intentions toward health recommendations, while reactance did not. Likewise, Martinez-Gonzalez et al. (2018) discovered that only inattention reduced the perceived effectiveness of unwanted health messages. Conversely, Reynolds-Tylus and colleagues (2020) found that reactance reduced the perceived effectiveness of additional health messages, but inattention did not. Although the specific health context under investigation may play a role in these inconsistent findings, this dissertation offers an alternative explanation. Message fatigue may lead to active or passive resistance depending on whether the audience response and/or message environment play a more significant role in an individual's experience of fatigue, as well as the content of the subsequent message exposure.

For example, if the primary antecedent to one's fatigue is message saturation from one's environment (e.g., extensive media coverage; Kinnick et al., 1996), the resultant fatigue may

motivate passive resistance due to cognitive habituation (So et al., 2017). However, if the primary antecedent to one's fatigue is feelings of burnout, the "exhaustive state one experiences upon being fatigued by a host of messages" may trigger active resistance (So et al., 2017, p. 9). The results of study one and three support the notion that active resistance may be triggered by the emotional exhaustion of excessive exposure to redundant messages, inconsistencies in COVID–19 messaging, and unwanted exposure.

Furthermore, the content of the additional message a fatigued individual is exposed to may likely influence which route to resistance is triggered. For example, if excessive messaging leads to message avoidance due to habitation, a reframed message can "energize them to attend to and elaborate on the message" (So et al., 2017, p. 25). This elaboration may break the path of passive resistance. However, it may also spark active resistance if the message content is disagreeable, as suggested by the present investigation's finding that liberals paid more attention to but were also more threatened by the loyal message. Together, these results contribute to the literature on message fatigue and reactance by offering an explanation as to why passive and/or active resistance may play a more prominent role in ineffective messaging.

4.3 Practical Implications

Beyond the theoretical implications, these results hold practical implications for communication during long-term public health campaigns. First, results from focus group participants in Study One reveal that inconsistent messaging was partly responsible for heightening their experience of fatigue and reactance, particularly for conservative participants. In novel public health crises like COVID-19, information will change as more knowledge about the disease state and preventive measures are uncovered. On the other hand, inconsistent information can create uncertainty, prompting people to seek out their own information from

various sources (Reynolds & Seeger, 2005; Sauer et al., 2021). Therefore, it is critical to be transparent about how and why these changes occurred when communicating evolving information, rather than "shielding the public from information because of fears of panic or embarrassment" (Sauer et al., 2021, p. 69). As a result, to effectively disseminate accurate information, risk communication must first recognize the inconstancies in the changing information and provide a comprehensive explanation to the public. This may help reduce fatigue and active resistance, particularly among audiences that have a low level of support for mandated public health measures (Christensen et al., 2020).

Second, the statistically significant finding for the loyalty message, relative to care message, in increasing perceived freedom threat for liberals should caution practitioners intending to use moral rhetoric to increase compliance in public health campaigns. The use of moral rhetoric may contribute to increased levels of polarization, particularly when used to persuade others on a highly controversial or polarizing issue (Kodapanakkal et al., 2022). This is not to suggest that health campaigns should retire using moral frames altogether, as they have proved successful in the past (Hansen et al., 2018; Luttrell & Petty, 2020), but rather these results should underscore the importance of conducting formative research to understand what components of the moral message may lead to unintended consequences. Collaboration across communication and moral psychology disciplines would be highly beneficial in this line of work in order to better understand the boundary conditions and unintended consequences of moral rhetoric in the persuasion process. Moral psychology, in particular, provides an explanation of the cognitive and emotional mechanisms that drive the effects of moral frames (Skitka, 2014; Skitka & Bauman, 2008), whereas communication scholars provide insight into how messages

may be designed as well as how participants' decoding of the message may influence the persuasion process (Dillard & Pfau, 2002)

Lastly, this dissertation offers further evidence of the adverse effects of fatigue on message processing. Although reducing the number of messages may not be a viable option (Sutton et al., 2020), practitioners must be aware that both environmental factors and the audience's response play a role in fatigue and decrease the efficacy of long-term public health campaigns (So et al., 2017). Therefore, it may be beneficial to assess the target audiences' level of fatigue at different points throughout the campaign. With this information, public health officials can alter their message strategy or content to address the perceived overexposure/redundancy or the audience's emotional state. Indeed, different message strategies may be required whether the fatigue is leading to passive or active resistance. Research on diverse messaging strategies (Kocielnik & Hsieh, 2017) and reactance (Rosenberg & Seigel, 2018) can be useful to guide practitioners in altering their messages depending on the type of resistance they aim to overcome.

4.4 Limitations

Despite the theoretical and practical implications of the current findings, this research was not without limitations. First, the formative research conducted in Study One and Study Two was collected from a relatively homogenous sample of college students enrolled in an introductory communication course. As a result, it is possible that the messages chosen for the final experiment, which were based on data gathered in these samples, did not translate to a larger population. Indeed, moral matching will not be effective if "the association with that moral foundation is not emphasized strongly enough to resonate with the target, because the argument made does not make a compelling case for viewing the policy [issue] as promoting the moral

foundation" (Feinberg & Willer, 2019, p. 5). Therefore, manipulation checks should not only measure whether the moral foundation is salient in the message, but also whether the target audience perceivers the moral foundation as being relevant to the context. For example, as mentioned previously a morally framed message highlighting liberty and freedom may have been more effective among the conservative participants (Kaplan et al., 2021). Similarly, the efficacy of a moral frame may depend on the emotional response it elicits from the target audience (Feinberg & Willer. 2013). For example, a care frame is persuasive to the degree it evokes feelings of compassion, and for a loyalty frame, the feelings of group pride (Haidt, 2012). The present investigation did not examine the degree to which each moral frame elicited the corresponding emotions. Therefore, it is possible that message conditions were ineffective if they did not elicit the appropriate emotional response. Finally, as outlined in the overview of the experimental stimuli, the loyal message used a red and blue color scheme to highlight Patriotisms. These bright colors may have grabbed the liberal participants attention as well as increased reactance since it reinforces American nationalism. Therefore, manipulation checks should also consider the impact of additional message features, such as color and design, on the degree to which they influence message processing (Armstrong et al., 2019).

Another limitation was the sample population in Study Three. Since data collection was restricted to states with mask mandates, this study falls short of being able to forward a representative sample. For example, a majority of participants were female (n = 229), White/Caucasians (n = 294), and from the State of Washington (n = 136). According to recent research, females report higher compliance to wearing a face mask than males (Chan, 2021), which may have influenced the results. Additionally, participants who identified as very conservative/conservative and very liberal/liberal were allowed to participate. Since the

emphasis placed on each moral foundation are greater among individuals who self-identify as 'very' or strongly' liberal/conservative (Graham et al., 2009; Haidt et al., 2009), restricting the inclusion criteria to those two categories, instead of four, may have yielded more hypotheses confirming results. As indicated by the post hoc analysis (see Table 9) there was a significant difference between the loyal moral foundation between conservative (M = 3.02, SD = 0.87), and very conservative (M = 3.71, SD = 0.71). Additionally, there was significant difference between the care moral foundation between liberal (M = 4.06, SD = 0.65) and very liberal (M = 4.27, SD = 0.62). Therefore, the efficacy of the moral frames (i.e., care and loyal) may have been impacted by the degree to which the target audience endorsed the foundation. Due to the small sample size for very conservative (n = 66) and very liberal (n = 106) participants, the current study was unable to run the analyses on these groups. Indeed, a major limitation of Study Three was the small sample size, which may have resulted in insufficient power to draw conclusions when examining two and three-way interactions for conservatives (N = 163) and liberals (N = 183; Brysbaert, 2019). A post hoc power analysis conducted on G*Power recommended a sample size of 395 for a two-way interaction and a sample size of 550 for a three-way interaction (alpha = .05, power = .80, f^2 = .02).

4.5 Future Directions

The findings of this dissertation lend themselves to several directions for future research. First, scholars should continue to explore the boundary conditions of moral matching, and the role moralization plays in the persuasion process. Specifically, how and under what conditions do moral arguments and moralization enhance or weaken an appeals efficacy on persuasion outcomes? As it stands, current research suggests that moral attitudes can strengthen the effects of a moral appeal (Feinberg & Willer, 2019; Luttrell & Petty, 2020). However, further

exploration is needed to understand the mechanisms underlying the effects of moral matching. First, the valence and strength of an individual's initial attitude toward an issue may influence the degree to which a morally matched message results in persuasive outcomes. For example, ambivalent attitudes (having both positive and negative reactions to an issue/message) may be particularly influenced by a morally matched message by increasing an individual's positive evaluation of the issue (Luttrell & Sawicki, 2020). Additional mechanisms concerning message features, such as how credible and trustworthy the message is perceived by the audience, should also be investigated. One study, for example, discovered that when conservatives were presented with a morally matched environmental appeal, they were persuaded to the extent that they perceived the message as coming from a conservative source, increasing the message's credibility and trustworthiness (Wolsko et al., 2016). Taken together, attitudinal and message characteristics should be further investigated to gain a better understanding of the boundary conditions for moral matching

Moreover, moral framing studies have primarily measured the effectiveness of moral arguments and the role of moralization on traditional persuasion outcomes (i.e., attitude/support, behavior, message effectiveness). Until now, there is little research on additional persuasion and message processing outcomes, such as active and passive resistance. The findings in this dissertation suggest that moral framing impacts the resistance process for some individuals; however, not in the desired direction. Future research should continue to investigate the effects of moral appeals on persuasion resistance and how they affect the strength or direction of various persuasion outcomes, such as behavioral intentions (as opposed to perceived message effectiveness).

Second, scholars should also continue to investigate additional factors that impact the dual routes of resistance from message fatigue (So & Kim, 2018). Specifically, as indicated by the findings of the current study, contextual factors (i.e., COVID-19, message type) and demographic characteristics (i.e., political affiliation) will impact the extent to which participants experience active or passive resistance. As such, the degree to which someone views the message/issue as important to them will impact how much fatigue they feel (Ball & Wozniak, 2021). Likewise, the third-order single factor message fatigue scale should be re-examined and tested to see if the message environment (i.e., overexposure and redundancy) and audience response (i.e., exhaustion and tedium) have independent effects on the active and passive routes to persuasion.

Lastly, as suggested by the results of Study One, research should explore the possibility of positive outcomes from message fatigue, such as reassurance and comfort. Additional exposure to a repeated message may not lead to increased active and/or passive resistance if an individual feels comforted or encouraged by the message. Future research should examine the moderating effects of comfort and reassurance towards a subsequent message on fatigues active and passive routes to resistance. Additional research on the mechanisms contributing to increased or decreased fatigue and its subsequent outcomes will aid public health officials in communicating risk information longitudinal.

5 Conclusion

One major challenge public health officials' face is communicating health risk information that resonates with a large, diverse audience over an extended period of time (Sutton et al., 2020). The collective results of this dissertation reinforce the difficulty of this task. Across three studies, this dissertation explored the possibility of moral matching as a message framing

strategy to overcome these barriers. Each study added clarity as well as generated new questions for future scholars. First, results from Study One indicate that message fatigue may not always lead to inherently negative outcomes. In fact, some may find comfort in excess exposure to a health message they deem as necessary. Results from Study Three indicate that moral matching plays a role in the active and passive routes to resistance and that more research is needed to fully understand its effects. Importantly, this dissertation highlights how message fatigue can lead to various routes of resistance and offers two alternative hypotheses to how disengagement and the reactance process may be impacted by an individual's level of pre-existing fatigue as well as additional campaign message features. Message fatigue and a certain degree of resistance are inventible consequences of long-term public health campaigns. This dissertation advances our understanding of how these variables influence the persuasion process. And as is the case with all worthwhile research, it raised as many questions as it attempted to answer.

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NOTES

[1]Since the post hoc analysis between political affiliation and adherence to mask wearing was statistically significant, hypotheses one through nine were re-ran controlling for prior adherence. However, prior adherence did not significantly influence any of the interaction effects on the outcome variables (i.e., inattention, freedom threat, and perceived message effectiveness).

Appendix A. Study One Focus Group Script & Interview Schedule

Three focus groups will be conducted with three to eight participants in each. Each focus group will take approximately 1 to 1.5 hours to complete. Participants my participate in person or via zoom. Each group will be audio recorded only (as by the permission of the participants in the consent form) to be transcribed and coded. As participants enter the Zoom meeting, I will ask them to write down their contact information if they want to receive a copy of the results.

Approximately 5 minutes after the focus group start time, the primary investigator will start the introductory remarks:

Introduction:
Welcome and thank you for taking the time to join my discussion on message fatigue and resistance. My name is Tess Buckley and I work and am a PhD student at Chapman University. I am conducting research on COVID-19 health messages. ***Specifically, I want to hear how the constant COIVD- 19 virus health messages you are exposed to make you feel****. For example, people may feel as though they have been overexposed to a redundant message that leaves them feeling exhausted, annoyed, and angry. Or maybe you do not feel like there has been too much COVID-19 health messages.* ***I want to better understand what types of COVID-19 health messages (CDC guidelines, COVID case numbers, or vaccine promotion) is the most and least draining, frustrating, or upsetting to you at the present time.***

There are no wrong answers, and we expect that you will have differing viewpoints. Please feel free to share your perspective even if it differs from what others have said. As a reminder, we are recording this session because we do not want to miss any of your comments. No names will be included in any reports and your comments will be kept confidential. The consent form you signed ensures your confidentiality and that you may stop participating in the focus group at any time without penalty.

We are here to ask questions, listen, and make sure everyone has a chance to share. If you need clarification on any questions, please do not hesitate to ask. We are interested in hearing from each of you, so we ask that you take turns and do not interrupt anyone else who is speaking. Because the dynamic of group discussions is a bit different for those joining on zoom, we ask that you either speak up directly, or raise your hand (emoji or your actual hand) to indicate that you would like to speak next. If you have a cell phone, we ask you to put it on silent mode, or mute your mic if you need to use it or are in a noisy environment.

For those joining on zoom, we ask that you please have your camera on so we can create an environment that resembles as much as possible a f2f group discussion.
Any questions?

Let us go ahead and get started. We will begin by going one by one to answer the first question.

Icebreaker:
Before we dive into the questions, let us go around and introduce ourselves. To do so, go ahead and state your name, your grade level, your major, and one thing you are looking forward to this year.

Questions:
Next, begin thinking about some COVID-19 health messages you have seen or heard. Try to think of the content of these messages as well as where you heard or saw them. For example, health guidelines (e.g., wear a mask, social distance, wash your hands, vaccine promotion), and some of the places (e.g., billboards, shopping) or channels (e.g., social media, TV, friends / family).

1. Tell me about some of the COVID-19 messages you see most often.
    a. Tell me about some COVID-19 messages that grab your attention.
2. Tell me about what type of COVID-19 messages you think are most redundant?
    a. *Exp*: COVID-19 guidelines from the CDC (weak a mask, wash your hands, social distance); COVID-19 infection rate, vaccine rate, vaccine promotion, Delta variant information.
3. What type of COVID messages do you find yourself ignoring?
    a. Why do you think that is?
    b. What would make you pay attention to them more?
4. How does being exposed to those redundant COVID-19 messages make you feel?
    a. Exhausted? Annoyed? Angry?
5. Thinking about COVID-19 messages that make you feel the most exhausted, what sources did they come from?
    a. Friends, family, the news? Social media? All?
6. What is it about those messages that you think causes you to feel fatigue?
    a. What are some ways you think public health officials can lessen message fatigue?
7. What messages make you feel angry, and why?
8. Thinking about COVID-19 messages that make you feel the most angry, what sources did they come from?
    a. Friends, family, the news? Social media? All?
9. I am going to show you pictures of four health messages. Please rank them from best to worst in terms of how persuasive you think they are.
    a. What did you like most/least about that particular message?
    b. What would you change about each of these messages?
10. Looking at these again, please rank them from best to worst in grabbing your attention.
    a. What did you like most/least about that particular message?
    b. What would you change about each of these messages?

Approximately 10min before the end of the focus group, the primary investigator will start debriefing remarks:

Closing:
Before we close, are there any closing statements you would like to make? Anything we did not ask that we should have? Or are there any questions we can answer for you? The purpose of this group was to collect your perception on your experience of message fatigue and resistance towards COVI-19 health messages. Your contribution will help guide my research. We would like

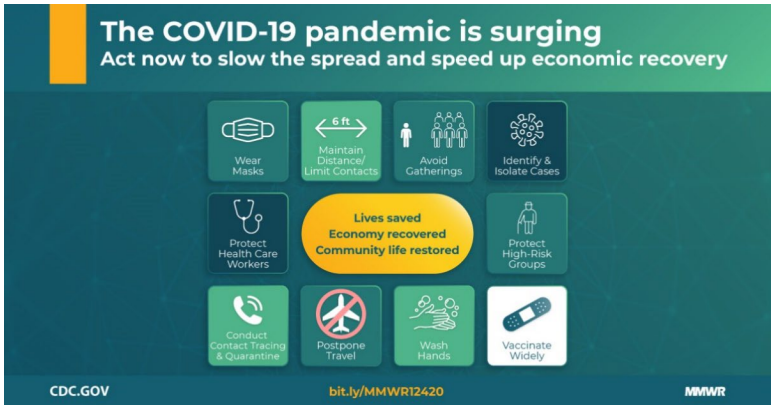
to reiterate that all the information you provided is completely confidential. If you have any additional questions or comments about this study, please feel free to contact me at tbuckley@chapman.edu *Thank you for your time.*

A.1 Study One Sample COVID-19 Messages

Please rank them following health compliance message from best to worst in terms of how persuasive or interesting you think they are.

1.

2.



3.

"Show your love for **humanity** and help **care** for others that are vulnerable. Demonstrate your **compassion** and help **prevent** the **suffering** of others and reduce the harm caused by COVID-19 by following the guidelines."

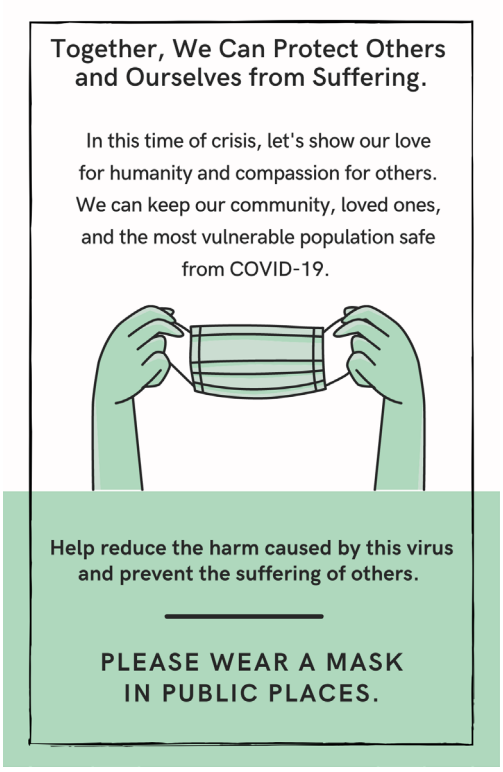
4.

A.2 Study Two and Three COVID-19 Health Compliance Messages

Care Message #1:

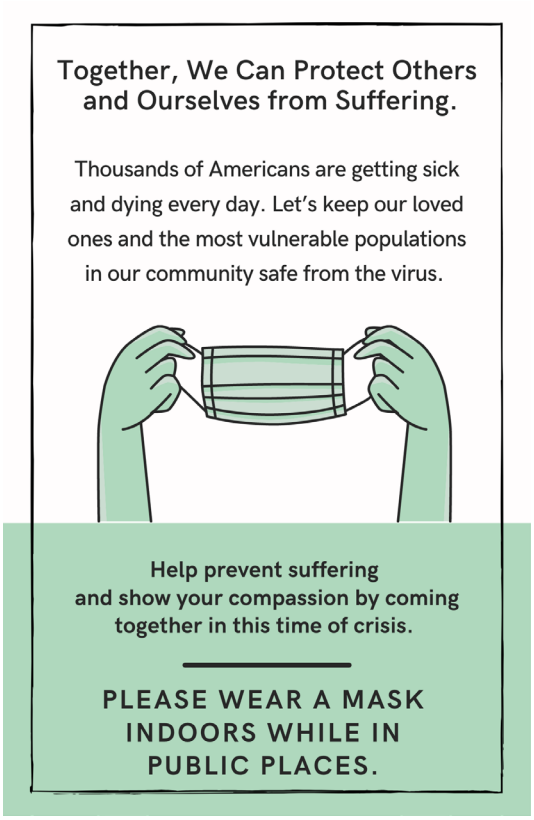
The Care Moral Foundation

(Selected for Study Three)



Care Message #2: The Care

Moral Foundation



Loyal Message #1: The Loyalty Moral Foundation

(Selected for Study Three)

Loyal Message #2: The Loyalty Moral Foundation

Control Message

(Used in Study Three)

Appendix B. Study Two and Three Survey Questionnaires

B.1 Study One Survey Questionnaire for Manipulation Check

1. Informed Consent

2. Instructions:

Please read the following instructions carefully:

In the following pages, you will be presented with four (4) short public health messages.

We are interested in your ratings of whether these messages reflect certain moral orientations.

Specifically, we are interested in how much you think each message reflects an ingroup, fairness, authority, purity, or harm and care orientation.

Please review the orientation definitions below:

An ingroup orientation focuses on loyalty to one's group. It values patriotism, self-sacrifice, putting the group first, and love for one's country.

A fairness orientation focuses on the importance of fairness, justice, and equality.

An authority orientation focuses on showing respect for authority and higher powers

A purity orientation focuses on disgust for contamination and the desire to live in an elevated and noble way.

A harm and care orientation focuses on the importance of caring for others and preventing harm. It is based on ideas of kindness, gentleness, and nurturance.

The messages in this survey may or may not reflect these orientations.
You will be asked to rate how much you think each of these themes are reflected in the messages.

Randomly shown 1 of 4 messages and responded to the questions below [repeated until they saw each message]

Loyalty A loyalty orientation focuses on loyalty to one's group. It values patriotism, self-sacrifice, putting the group first, and love for one's country.

Please indicate how much the message you just read reflects an ingroup orientation:
None at all 1, 2, 3, 4, Very much 5

Authority An authority orientation focuses on showing respect for authority, higher powers, and tradition.

Please indicate how much the message you just read reflects an authority orientation:
None at all 1, 2, 3, 4, Very much 5

Purity A purity orientation focuses on disgust for contamination and the desire to live in an elevated and noble way.

Please indicate how much the message you just read reflects an authority orientation:
None at all 1, 2, 3, 4, Very much 5

A harm and care orientation focuses on the importance of caring for others and preventing harm. It is based on ideas of kindness, gentleness, and nurturance.

Please indicate how much the message you just read reflects an authority orientation:
None at all 1, 2, 3, 4, Very much 5

Fair A fairness orientation focuses on the importance of fairness, justice, and equality.
Please indicate how much the message you just read reflects an authority orientation:
None at all 1, 2, 3, 4, Very much 5

Novel Still thinking about the public health message you just read, please indicate how **novel** (i.e., new or original) the message was to you.
None at all 1, 2, 3, 4, Very much 5

Unique Still thinking about the public health message you just read, please indicate how **unique** the message was to you.
None at all 1, 2, 3, 4, Very much 5

1. Demographic questions:
    a. What is your age?
    b. What is your sex?
    c. What is your ethnicity?
    d. How would you describe yourself politically?
        i. Extremely conservative
        ii. Conservative
        iii. Leaning conservative
        iv. Moderate
        v. Leaning Moderate
        vi. Liberal
        vii. Extremely Liberal

B.2 Study Three Survey Questionnaire for Cross-Sectional Experiment

1. Consent
2. Prescreen #1:
    a. How would you describe yourself politically?
        viii. Very conservative
        ix. Conservative
        x. Leaning conservative
        xi. Moderate
        xii. Leaning Moderate
        xiii. Liberal
        xiv. Very Liberal

3. Prescreen #2: First two moral foundations (care & loyal)

Part 1. When you decide whether something is right or wrong, to what extent are the following considerations relevant to your thinking? Please rate each statement using this scale:

[0] = not at all relevant (This consideration has nothing to do with my judgments of right and wrong)
[1] = not very relevant
[2] = slightly relevant
[3] = somewhat relevant
[4] = very relevant
[5] = extremely relevant (This is one of the most important factors when I judge right and wrong)

_____Whether or not someone suffered emotionally
_____Whether or not someone cared for someone weak or vulnerable
_____Whether or not someone was cruel
_____Whether or not someone's action showed love for his or her country
_____Whether or not someone did something to betray his or her group
_____Whether or not someone showed a lack of loyalty

Part 2. Please read the following sentences and indicate your agreement or disagreement:

[0]	[1]	[2]	[3]	[4]	[5]
Strongly diagree	Moderately disagree	Slightly disagree	Slightly agree	Moderately agree	Strongly agree

_____Compassion for those who are suffering is the most crucial virtue.
_____One of the worst things a person could do is hurt a defenseless animal.
_____It can never be right to kill a human being.
_____I am proud of my country's history.

_____People should be loyal to their family members, even when they have done something wrong.

_____ It is more important to be a team player than to express oneself.

4.Independvent Variables:

Message Fatigue (Strong disagree 1 - Strongly agree 7)

Message environment

Overexposure

1. I have lost track of the number of times I have heard that not wearing a mask in public places because of COVID-19 is a serious problem.
2. At this point, I've heard about problems related to not wearing a mask because of COVID-19 more than I ever needed to.
3. I have heard enough about how important it is to wear a mask in public places.
4. There are simply too many health messages about mask wearing because of COVID-19 nowadays.
5. The importance of wearing a mask in public places is overtaught.

Redundancy

6. COVID-19 face mask related messages rarely provide new information
7. After hearing them for years, messages about wearing a mask because of COVID-19 seem repetitive.
8. Messages about wearing a mask in public places are all beginning to sound the same to me.
9. I can predict what a message about wearing a mask in public is going to say

Audience response

Exhaustion

10. I am burned out from hearing that not wearing a mask in public is a serious problem.
11. I am sick of hearing about consequences of not wearing a mask in public.
12. I am tired of hearing about the importance of wearing a mask in public
13. COVID-19 face mask related messages make me want to sigh

Tedium

14. Health messages about wearing a mask are boring.
15. Messages to wear a mask because of COVID-19 make me want to yawn.
16. I find messages about wearing masks in public places to be dull and monotonous.
17. COVID-19 mask related messages are tedious

Adherence

How often do you currently wear a face mask in a public setting?

1. Never
2. Rarely, in less than 10% of the chances when I could have

3. Occasionally, in about 30% of the chances when I could have
4. Sometimes, in about 50% of the chances when I could have
5. Frequently, in about 70% of the chances when I could have
6. Usually, in about 90% of the chances I could have
7. Every time

Moralization

1. To what extent are your views on wearing a face mask in public places connected to your core moral beliefs and convictions?
    1. Not at all, 2, 3, Moderately, 5, 6, Extremely
2. To what extent do you think that public health is a "moral issue"?
    1. Not at all, 2, 3, Moderately, 5, 6, Extremely

[MESSAGE TYPE BLOCK – SHOW ONE OF THREE MESSAGES]

5. Dependent Variables:

Inattention (Strong disagree 1 - Strongly agree 7)

Thinking about the message you just read, please respond to the following statements.

1. I rushed through the message without being really attentive to the information provided.
2. I quickly browsed through the message rather than paying attention to the information provided.
3. The message grabbed my attention (reverse coded).
4. I paid great attention to the information provided (reverse coded).

Freedom Threat Measure (Strong disagree 1 - Strongly agree 7)

Still thinking about the message you just read, please mark how much you disagree or agree with each statement:

1. The message tried to make a decision for me.
2. The message tried to pressure me.
3. The message threatened my freedom to choose.
4. The message tried to manipulate me.

Anger Measure (None of this feeling 1 – A great deal of this feeling 7)

Still thinking about the message you just read, please Indicate the extent to which each statement represents your current feelings.

1. angry
2. annoyed
3. irritated
4. aggravated

Negative Cognitions

"The thoughts you had while reading this message were____"

1. Favorable 1 2 3 4 5 6 7 Unfavorable
2. Positive 1 2 3 4 5 6 7 Negative
3. Good 1 2 3 4 5 6 7 Bad

Perceived Message Effectiveness

Still thinking about the message you just read, please respond to the following questions:

1. How persuasive is this message to you?
   Not persuasive at all, 2, 3, Somewhat persuasive, 5, 6, Extremely persuasive
2. How convincing do you think this message is?
   Not convincing at all, 2, 3, Somewhat convincing, 5, 6, Extremely convincing
3. How effectively do you think this message makes its point?
   Not effectively at all, 2, 3, Somewhat effectively, 5, 6, Extremely effective

[ATTENTION CHECK: Carefully reading the question is critical. Please choose STRONGLY AGREE for this item]

Moral Foundations continued (purity, authority, fairness)

Part 1. When you decide whether something is right or wrong, to what extent are the following considerations relevant to your thinking? Please rate each statement using this scale:

[0] = not at all relevant (This consideration has nothing to do with my judgments of right and wrong)

[1] = not very relevant

[2] = slightly relevant

[3] = somewhat relevant

[4] = very relevant

[5] = extremely relevant (This is one of the most important factors when I judge right and wrong)

_____Whether or not some people were treated differently than others
_____Whether or not someone showed a lack of respect for authority
_____Whether or not someone violated standards of purity and decency
_____Whether or not someone was good at math **(CONTROL)**
_____Whether or not someone acted unfairly
_____Whether or not someone conformed to the traditions of society
_____Whether or not someone did something disgusting
_____Whether or not someone was denied his or her rights
_____Whether or not an action caused chaos or disorder

_____Whether or not someone acted in a way that God would approve of

Part 2. Please read the following sentences and indicate your agreement or disagreement:

[0]	[1]	[2]	[3]	[4]	[5]
Strongly disagree	Moderately disagree	Slightly disagree	Slightly agree	Moderately agree	Strongly agree

_____When the government makes laws, the number one principle should be ensuring that everyone is treated fairly.

_____Respect for authority is something all children need to learn.
_____People should not do things that are disgusting, even if no one is harmed.
_____Justice is the most important requirement for a society.
_____Men and women each have different roles to play in society.
_____I would call some acts wrong on the grounds that they are unnatural.
_____ I think it's morally wrong that rich children inherit a lot of money while poor children inherit nothing.
_____ If I were a soldier and disagreed with my commanding officer's orders, I would obey anyway because that is my duty.
_____ Chastity is an important and valuable virtue.

6.Demographic Questions:

1. What is your sex?
    a. Male/ Female/ Nonbinary/ Third gender / prefer not to say / prefer to self-describe
2. What is your race/ethnicity? Check all that apply
3. Which geographical area of eh US do you currently reside in?
    a. Midwest, Northeast, South, West, Other U.S. territory
4. What is your highest degree or level of education?
    a. Some High school, High school, Associates degree, Bachelor's degree, Masters, PhD or higher, Trade school, prefer not to say