

Guidance on Messaging to Avoid Reactance and Address Moral Disengagement

Task 1 Report: Literature Review

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1 EXECUTIVE SUMMARY

Traffic safety is a significant public health issue. In 2016, over 37,000 people were killed on U.S. roadways. About half (48%) of passenger vehicle occupants killed were unrestrained (among those crashes with known restraint use). Fatalities in speeding-related crashes increased by 4.0 percent from 2015 (National Center for Statistics and Analysis 2017). Speeding is considered one form of aggressive driving. However, significant progress has been made in recent years, and fewer people are engaging in risky driving behaviors. In 2016, seat belt use reached an all-time high of 90.1 percent (National Center for Statistics and Analysis 2017). Nonetheless, a small portion of the population (i.e., about 10 percent) still do not wear a seat belt and regularly speed. Understanding certain characteristics of this small group may provide insights on how to change their behaviors and thereby improve traffic safety.

Two psychological phenomena, psychological reactance and moral disengagement, may influence the decisions of individuals in this smaller portion of the population who engage in risky behaviors. Psychological reactance is “an unpleasant motivational arousal that emerges when people experience a threat to or loss of their free behaviors” (Steindl et al. 2015, 205). Research has found that psychological reactance is often indicated as anger and counterarguing (Rains 2013, 47-73). Proneness to reactance has been measured (Reynolds 2006, 323-332) and shown to be associated with anger, negative feelings, and less intention to engage in protective behaviors (Dillard and Shen 2005, 144-168).

Some may perceive that being told to wear a seat belt is a threat to their freedom, and, because of psychological reactance, resist this request or are motivated to do the opposite. If psychological reactance is influencing those not wearing seat belts, then trying new approaches may be more effective in influencing this group’s behaviors. For example, messages which are based on strong enforcement may be more likely to arouse psychological reactance than other kinds of messages. Understanding what messages to avoid and what messages to use may result in better outcomes. Strategies to reduce reactance in messaging about smoking, impaired driving, high-risk drinking, and consuming soft drinks have been explored (Shen 2010, 397-422; Richards, Banas, and Magid 2017, 890–902); however, no similar studies applied to seat belt use were found.

Moral disengagement, originally proposed by Albert Bandura (Bandura et al. 1996, 364-374), occurs when “individuals detach themselves from their usual self-regulatory processes or morality in order to behave in ways that run counter to their normal moral standards” (Cleary, Lennon, and Swann 2016, 1-17). Mechanisms of moral disengagement include cognitively redefining the behavior, attributing blame to others, and reducing the negative impact of the behavior (e.g., “It is OK for me to speed because I won’t crash.”) (Bandura et al. 1996, 364-374). Research has revealed that moral disengagement may explain aspects of aggressive driving (i.e., following too closely, excessive passing, and speeding) (Swann, Lennon, and Cleary 2017, 124-136). A scale to measure moral disengagement in aggressive driving has been developed and undergone preliminary validation (Swann, Lennon, and Cleary 2017, 124-136). If some aggressive drivers are engaging in moral disengagement, messaging that overrides this justification process and reconnects the individuals with their existent, self-regulatory processes may be effective at reducing risky behavior.

The goal of this project, “*Guidance on Messaging to Avoid Reactance and Address Moral Disengagement*” is to better understand if two psychological phenomena (psychological reactance and moral disengagement) are more prevalent among individuals engaging in the risky behaviors of not wearing a seat belt and driving aggressively (following too closely, excessive passing, and speeding) and how messaging might be adjusted to mitigate these phenomena. Many agencies involved with traffic safety use messaging as a means of influencing traffic safety-related behaviors. This project will provide practical guidance on messaging to address psychological reactance and moral disengagement. Such guidance may make messaging more effective and improve traffic safety.

2 INTRODUCTION

Traffic safety professionals are tasked with the complexities of finding ways to change behavior. Not wearing a seat belt and driving aggressively are risky traffic behaviors where significant progress has been made and fewer people are engaging in these behaviors; however, a small portion of the population (i.e., about 10 percent) still do not wear a seat belt and regularly speed (one form of aggressive driving). To reach our toward zero deaths goals, novel approaches and strategies to engage the small group of people engaging in risky traffic behaviors and most resistant to change are needed. This project seeks to better understand if two psychological phenomena (psychological reactance and moral disengagement) are more prevalent among individuals engaging in the risky behaviors of not wearing a seat belt and aggressive driving and how messaging might be adjusted to mitigate these phenomena and thereby improve traffic safety.

This report summarizes Task 1 of this project. The purpose of Task 1 is to conduct a literature review of published research:

- To understand what is known about psychological reactance and moral disengagement in the context of traffic safety-related behaviors.
- To understand what scales have been used to measure psychological reactance and moral disengagement to inform the design of the surveys for this project.
- To better understand what components of messaging decrease reactance and overcome moral disengagement as many agencies involved with traffic safety use messaging as a means of influencing traffic safety-related behaviors.

3 METHODS

To obtain research articles for this review, a keyword search was conducted using the TRID database and Montana State University Library search engines “Academic Search Complete,” “EBSCO,” and “CatSearch.” Word search and phrase combinations included: “psychological reactance,” “moral disengagement,” “psychological reactance and traffic safety,” “moral disengagement and traffic safety,” “psychological reactance and seat belt use,” “moral disengagement and seat belt use,” “psychological reactance and aggressive driving,” “moral disengagement and aggressive driving,” “persuasive messaging and psychological reactance,” and “persuasive messaging and moral disengagement.” Once articles were reviewed for relevance, additional key words were used in combination to narrow the search on these two phenomena and their relevance to traffic safety. Additionally, the reference lists of relevant articles were also reviewed for other potentially relevant articles that may have been missed with the key word searches.

4 RESULTS

This literature review explores what is known about psychological reactance and moral disengagement in the context of traffic safety-related behaviors. Psychological reactance and moral disengagement are defined; background information to better understand how these phenomena may influence the decisions of individuals who engage in risky behaviors is provided; and specific research exploring these phenomena in the context of traffic safety-related behaviors is discussed.

Next, the literature review focuses on measuring psychological reactance and moral disengagement to inform the design of the surveys related to traffic safety for this project. Examples of questions and response formats from previous research to measure psychological reactance and moral disengagement are provided.

Finally, persuasive messaging and what has been found in the research regarding components of messaging that decrease reactance and overcome moral disengagement is explored. Messaging components including the message's style, structure, content, and delivery are reviewed.

4.1 Psychological Reactance in the Context of Traffic Safety

Slogans like American Express's "Don't Leave Home Without It," Subway's "Eat Fresh," L'Oréal's "Because You're Worth it," and Apple's "Think Different" are some of the messages created to persuade us to do or not do, feel or not feel, and think or not think. While many persuasive messages are successful and work as intended, some do not. Some persuasive attempts do not elicit the desired outcome; and worse, some have the opposite effect. These opposite outcomes have been called the boomerang effect (Quick, Shen, and Dillard 2013, 167-183). In traffic safety, one of the ways agencies seek to influence traffic safety-related behaviors is to implement persuasive traffic safety campaigns. These campaigns seek to increase protective behaviors like wearing a seat belt and following the posted speed limit and to reduce risky behaviors like texting while driving and driving after drinking alcohol. The phenomena of psychological reactance (Brehm and Brehm 1981, 1-432) can provide insight about why some persuasive attempts achieve their desired results and others fail, and this understanding may help traffic safety professionals create messaging that is more effective, especially with the small group of people engaging in risky traffic safety behaviors and most resistant to change. Strategies to reduce reactance in messaging about smoking, drunk driving, high-risk drinking, and consuming soft drinks have been explored (Shen 2010, 397-422; Richards, Banas, and Magid 2017, 890-902); however, no similar studies applied to seat belt use or aggressive driving were found.

4.1.1 Psychological Reactance Theory

Psychological reactance is "an unpleasant motivational arousal that emerges when people experience a threat to or loss of their free behaviors" (Steindl et al. 2015, 205). To understand how psychological reactance is initiated and how it influences a person's thoughts, feelings, attitudes, and actions, it can be helpful to understand psychological reactance theory. Psychological reactance theory assumes that individuals like to have choices and be able to choose among various options (Quick and Stephenson 2007, 131-138). When one's freedom to choose is threatened or lost, for example, by rules or restrictions, reactance is elicited, thereby motivating the individual to reestablish their freedom (Quick and Stephenson 2007, 131-138; Dillard and Shen 2005, 144-

168). Psychological reactance theory (Brehm and Brehm, 1981) explains “how individuals respond when a freedom has been threatened or lost” (Rains 2013, p. 48). There are four elements in psychological reactance theory: freedom, threat to freedom, reactance, and restoration of freedom (Dillard and Shen 2005, 144-168).

4.1.1.1 Freedom

Free behaviors include how one acts, feels, and thinks (Brehm and Brehm 1981, 1-432). Freedoms include an individual’s “beliefs about the ways in which one can behave” (Quick, Shen, and Dillard 2013, 167-183). Freedoms are defined subjectively which means that if a person perceives they have a particular freedom and believes they can exercise that freedom, then the freedom exists for that person (Brehm and Brehm 1981, 22). In other words, knowledge that a specific freedom exists and the belief that the person has the ability to exercise that free behavior are prerequisites to having a particular freedom (Brehm and Brehm 1981, 1-432; Quick, Shen, and Dillard 2013, 167-183; Shen 2015, 975-985). People’s beliefs about their existing freedoms are influenced by personal experiences, culture, and other social and environmental factors; thus, freedoms vary widely. In traffic safety, examples of free behaviors include individuals believing that they choose when to use their cell phones, when to wear a seat belt, or when to speed.

4.1.1.2 Threat to Freedom

Anything that is perceived to make it more difficult for an individual to exercise their free behaviors is considered a threat (Dillard and Shen 2005, 144-168). A threat to freedom is typically induced when an individual’s autonomy is restricted or there is a perception that it could be restricted or lost. Threats to freedom can include social influences like a friend giving a disapproving opinion, a parent bribing their child to comply or punishing them for non-compliance, or a television or radio ad seeking to change behavior using a persuasive advertisement (Brehm and Brehm 1981, 30). Threats can also include influences like state laws that have been enacted, uncontrollable events like the weather, or behaviors of the individual who has the freedom (Brehm and Brehm 1981, 30). For example, when presented with two choices, selecting one choice and rejecting the other may restrict or threaten the individual’s freedom (Brehm and Brehm 1981, 30).

Examples of threats to freedom in traffic safety might include being prohibited from using a cell phone while driving, being required to wear a seat belt, being told how fast one can drive, or being stopped by an officer and fined for non-compliance. Being prohibited from or required to do something or feeling forced to feel or think a certain way can arouse reactance (Brehm and Brehm 1981).

4.1.1.3 Reactance

Reactance is a “counterforce motivating the person to reassert or restore the threatened or eliminated freedom” (Brehm and Brehm 1981, 37). Reactance was initially conceptualized as “a motivational state that cannot be measured directly (Brehm and Brehm 1981, 37). When psychological reactance was first conceptualized, it was viewed in terms of what it caused, or what effect it had (Quick, Shen, and Dillard 2013, 167-183). However, since its inception in the 1960’s, researchers have conceptualized reactance in ways that are more direct and measurable and can help us to understand “why and when persuasion fails” (Shen 2015, 975). Dillard and Shen (2005,

144-168) identified four ways to characterize reactance: as a cognitive process, as an emotion, as both emotion and cognition, and as emotion and cognition intertwined.

As a cognitive process, it is believed that a “persuasive message generates cognitions that can be in agreement or disagreement with the message” (Rains 2013, 49). From a cognitive frame, reactance is operationalized as counter-arguing (Dillard and Shen 2005, 144-168). Counter-arguing in traffic safety might look like disagreeing with traffic safety campaign messages, intentions to not engage in the traffic safety behavior being promoted, or intentions to engage in the risky traffic behavior being discouraged (Dillard and Shen 2005, 144-168).

Characterizing reactance as an emotion, reactance is operationalized as “varying degrees of anger (e.g., irritation, annoyance, and rage)” (Dillard and Shen 2005, 147). In traffic safety, emotion might look like honking the horn or making angry gestures.

The third and fourth characterizations of reactance view reactance as both emotion and cognition. While one characterization suggests the effects of cognition and emotion are separate and distinct, the other views reactance as an intertwining of both cognition and emotion where the effects cannot be separated (Dillard and Shen 2005, 144-168). In this way, reactance is a “cognitive and affective amalgam” (Dillard and Shen 2005, 162). Since conceptualizing reactance in these ways, several research studies have supported the intertwined conceptualization where reactance is counter-arguing and anger intertwined (Dillard and Shen 2005, 144-168; Rains 2013, 47-73; Shen 2015, 975-985; Quick and Stephenson 2007; Quick and Considine 2008).

Psychological reactance can be elicited when a person’s freedoms are threatened or lost, but a person can also experience vicarious reactance (Miron and Brehm 2006, 1-12; Sittenthaler, Jonas, and Traut-Mattausch 2016, 458-470). Vicarious reactance occurs when a person experiences reactance when witnessing someone else’s freedoms being threatened or lost even when the person’s own freedoms are not threatened (Miron and Brehm 2006, 1-12). In a study assessing vicarious reactance, Sittenthaler, Jonas, and Traut-Mattausch (2016, 458-470) concluded that “people do experience vicarious reactance when they observe other people’s restrictions and people show almost the same degree of reactance when observing other people’s restrictions as when they imagine being affected by the restriction themselves” (Sittenthaler, Jonas, and Traut-Mattausch 2016, 463). In traffic safety, vicarious reactance might be experienced when watching someone else be pulled over by law enforcement.

4.1.1.4 Restoration of Freedom

When a person’s freedoms are threatened or lost, they experience reactance, which in turn, prompts behaviors, thoughts, emotions, and attitudes that seek to reestablish or restore those freedoms (Dillard and Shen 2005, 144-168). In some situations, this may mean the individual does the opposite of what was advocated; this is called a “direct restoration” (Brehm and Brehm 1981, 1-432; Dillard and Shen 2005, 146). For example, in response to a traffic safety campaign that advocates for seat belt use, reactance may prompt an individual to refuse to wear a seat belt. Other, indirect attempts to restore freedom might look like downplaying the need for seat belts, discrediting the traffic safety agencies behind the campaign messages, or deciding to wear a seat belt but exercising the right to speed (or another freedom) to gain an alternative sense of control over something else (Brehm and Brehm 1981, 1-432; Dillard and Shen 2005, 144-168; Quick, Shen, and Dillard 2013, 167-183).

4.1.1.5 Individual Differences in Reactance Proneness

Psychological reactance has been conceptualized as a “situational response to a specific threat to freedom” (Miron and Brehm 2006, 7). However, researchers have also acknowledged that reactance is a trait and that some people are more prone to reactance than others (Hong and Faedda 1996, 173-182; Brehm and Brehm 1981, 1-432; Dowd, Milne, and Wise 1991, 541-545). Psychological reactance, conceptualized this way, is not situational but is an enduring characteristic of the individual. This line of research inquiry has been an especially prevalent focus in the psychology literature and in the counseling profession as a way to better understand oppositional behavior (Dowd, Milne, and Wise 1991, 541-545).

Researchers exploring psychological reactance proneness have studied reactance proneness and its association with other personality variables like locus of control and self-consciousness (Brehm and Brehm 1981, 1-432). Hong and Faedda (1996, 173-182) explored correlations between reactance and self-esteem, trait-anger, depression, life satisfaction, and religiosity. They found that “trait-anger and depression had the highest correlations with reactance, and locus of control and self-esteem had no correlation. An inverse relationship was found between reactance and life satisfaction and religiosity” (Hong and Faedda 1996, 173-182).

Emotional intelligence as an individual difference in one’s propensity for psychological reactance has also been studied. Middleton, Buboltz, and Sopon (2015, 542-549) found that males with lower behavioral reactance have significantly higher emotional intelligence scores (on subscales: well-being, self-control, and emotionality); however, for females, emotional intelligence was not a factor in their behavioral reactant responses (Middleton, Buboltz, and Sopon 2015, 547).

4.1.1.6 Situational Factors Influencing Reactance

When and how strong a person’s reactance is to a specific threat varies based on a number of situational factors. One situational factor proposed as a guiding principle by Brehm and Brehm (1981, 5) is that “one’s experience of reactance is a function of how firmly the individual believes that they have a particular freedom or control over an outcome.” In traffic safety, for example, when a person is told to follow a specific speeding law, the amount of reactance elicited by this law depends on how much the individual believes that they have the freedom to drive whatever speed they choose. Brehm and Brehm (1981, 5) suggested that “freedom is an expectancy and can be held with more or less certainty.”

Another situational factor likely to influence how strong a person’s reactance is in a given situation is the perceived importance of the freedom that is threatened (Brehm and Brehm 1981, 5). Essentially, more reactance is aroused when an individual perceives the freedom that is being threatened is important; that is, a freedom perceived to be the only freedom to satisfy a particular need (Brehm and Brehm 1981, 39). In contrast, lower reactance is aroused when a threatened freedom is perceived to be unimportant (Brehm and Brehm 1981, 5). For example, if a person believes that texting on a cell phone is a freedom that satisfies their need for connection and relationship, then messages like “Don’t Text and Drive” or laws that prohibit cell phone use while driving are potential threats to this freedom that could elicit reactance. And, greater reactance would be experienced by those who believe that texting is the only way to satisfy the need for connection and relationship to others (Brehm and Brehm 1981, 1-432).

A third situational factor associated with the amount of reactance that is elicited in a particular situation is related to the number of freedoms that are threatened (Brehm and Brehm 1981, 5). Essentially, something that threatens a single freedom should arouse less reactance than something that threatens multiple freedoms (Brehm and Brehm 1981, 5). For example, a person who is told not to ride their bicycle on the highway should experience less reactance than a person who is told they can never ride their bicycle on any roadways.

A fourth situational factor that is associated with how strong a person's reactance is in a situation depends on the implied threat that occurs (Brehm and Brehm 1981, 6). When an individual is told to do something, albeit, perform a certain behavior, follow a specific rule, etc., they may experience reactance, not because of the single threat to freedom but because the person might infer that future freedoms could be threatened (e.g., If they tell me I can't use my cell phone while driving, what's next?) (Brehm and Brehm 1981, 6). The implications for one's future freedoms can elicit increased reactance (Brehm and Brehm 1981, 6).

The magnitude of reactance that is elicited in a given situation is dependent on a variety of situational factors. The four factors discussed here may provide insight into why the small group of people engaging in risky behaviors like driving aggressively or not wearing a seat belt may be more reactive to current traffic safety intervention strategies than the large group of people who have responded positively to the current intervention strategies employed by traffic safety professionals. Perhaps these situational factors can be addressed more intentionally in the current traffic safety strategies and would make a difference in behavior.

4.2 Moral Disengagement in the Context of Traffic Safety

A person relies on a set of moral standards they have developed for what is right and wrong to guide and deter their behaviors in everyday life (Bandura 2002, 101-119). Normally, individuals behave in ways that are congruent with their set of moral standards (Bandura 2002, 101-119). They act in ways that are proactive and foster positive feelings of self-worth and wellbeing (Bandura et al. 1996 364-374; Bandura 2016, 1-446). In general, a person's moral standards guide good behavior choices. However, what has captured the attention of many researchers is behaving in ways that are incongruent to a person's moral standards. Why, when, and under what circumstances does this happen?

Moral disengagement, originally proposed by Albert Bandura (Bandura et al. 1996, 364-374), occurs when "individuals detach themselves from their usual self-regulatory processes or morality in order to behave in ways that run counter to their normal moral standards" (Cleary, Lennon, and Swann 2016, 1-17). For traffic safety professionals, this psychological phenomenon may provide insight when seeking to change the behaviors of the small group of risky road users. In a review of the literature, there were no studies found addressing moral disengagement and seat belt use; however, there is some research suggesting that moral disengagement may explain aspects of aggressive driving (i.e., following too closely, excessive passing, and speeding) (Swann, Lennon, and Cleary 2017, 124-136). If some aggressive drivers are engaging in moral disengagement, messaging that overrides this justification process and reconnects the individuals with their existent, self-regulatory processes may be effective at reducing risky behavior.

4.2.1.1 Moral Disengagement

People regulate their thoughts and behaviors through a self-regulation process (Bandura et al. 1996, 364-374; Bandura 2016, 1-446). This self-regulation process consists of self-monitoring, evaluating behaviors and thoughts against a set of internal standards and the context in which the behaviors and thoughts occur, and self-reaction (Bandura 2002, 101-119; Bandura 2016, 1-446; Bandura et al. 1996, 364-374). Self-reactions can be positive or negative. Positive self-reactions are judged to be in alignment with a person's internal set of standards (Bandura et al. 1996, 364-374). In contrast, negative self-reactions occur when a person judges their behaviors and thoughts to be misaligned with their internal set of standards, and in these situations, a person will apply self-sanctions to regulate their behaviors (Bandura et al. 1996, 364-374). Self-sanctions for acting in incongruent ways seek to deter future transgressions by evoking feelings of "guilt, remorse, and self-criticism" and can provoke "attempts at restitution" (e.g., "I feel bad for acting this way and I will remember these feelings so I don't act this way again," or "I feel bad and will try to make things right") (Bandura 2016, 4).

Bandura (2002, 101-119) proposed that moral self-regulation is a process that can be selectively activated or disengaged. Activated self-regulation motivates moral conduct (Bandura, et al. 1996, 364-374). In contrast, through moral disengagement, "individuals are freed from the self-sanctions and the accompanying guilt that would ensue when behavior violates internal standards" thus allowing individuals to act in ways that are counter to their personal moral standards (Detert, Trevino, and Sweitzer 2008, 375). In other words, disengaging from one's self-regulatory process "permits different types of conduct with the same moral standards" (Bandura et al. 1996, 364). Moral disengagement explains how "good people can behave badly" (Gini, Pozzoli, and Hymel 2014, 57).

4.2.1.2 Mechanisms to Activate Moral Disengagement

People employ different mechanisms to disengage from their moral standards, behave poorly, and at the same time maintain their self-image and sense of moral agency (Bandura 2002, 101-119). These mechanisms include: moral justification, euphemistic labeling, advantageous comparison, displacement of responsibility, diffusion of responsibility, dehumanization, and attribution of blame (Bandura et al. 1996, 364-374; Bandura 2002, 101-119).

These disengagement mechanisms operate at four focus areas in the self-regulation process to weaken moral control: behavior (changing the acceptability of the behavior), agency (distorting or minimizing one's role in the harm), outcome (distorting the consequences of the behavior), and victim (reducing one's identification with the recipient of the harmful act) (Bandura 2016, 2; Bandura 2002, 101-119; Detert, Treviño, and Sweitzer 2008, 374-391; Gini, Pozzoli, and Hymel 2014, 56-68).

At the behavior focus, a person changes or restructures the acceptability of a behavior, turning it from a negative or harmful behavior into a positive or good behavior (Bandura 2016, 1-446; Bandura et al. 1996, 364-374; Detert, Treviño, and Sweitzer 2008, 374-391; Gini, Pozzoli, and Hymel 2014, 56-68). Mechanisms in this category include: moral justification, euphemistic labeling, and advantageous comparison (Gini, Pozzoli, and Hymel 2014, 56-68; Detert, Treviño, and Sweitzer 2008, 374-391). These mechanisms operate by justifying unacceptable behavior as socially or morally worthy (moral justification), comparing a negative behavior with an even worse behavior to make it appear less concerning (advantageous comparison), or using language that is

benign or neutral to diminish the negative behavior (euphemistic labeling) (Bandura et al. 1996, 364-374; Bandura 2002, 101-119; Gini, Pozzoli, and Hymel 2014, 56-68; Detert, Treviño, and Sweitzer 2008, 374-391). In traffic safety, moral justification might look like: “It’s OK for me to speed because I won’t crash”; advantageous comparison might look like “I might speed, but at least I don’t text and drive”; and euphemistic labeling might look like labeling a behavior such as tailgating as “hurrying them along” instead of “driving aggressively.”

At the agency focus, a person distorts their role in the harm of the negative behavior by displacing or diffusing responsibility (Bandura et al. 1996, 364-374; Bandura 2002, 101-119; Detert, Treviño, and Sweitzer 2008, 374-391; Gini, Pozzoli, and Hymel 2014, 56-68). Displacing responsibility happens when a person shifts the blame of their behavior to someone else. For example, “my boss made me do it” allows a person to avoid taking responsibility for the behavior (Detert, Treviño, and Sweitzer 2008, 374-391). In traffic safety, displacing responsibility might look like, “We don’t have a primary seat belt law, so I don’t have to wear my seat belt.”

In addition to displacing responsibility, a person can also activate moral disengagement by diffusing responsibility (Bandura et al. 1996, 364-374; Gini, Pozzoli, and Hymel 2014, 56-68). In a group, for example, individuals can blame the group and avoid personal responsibility for joint actions, i.e., “when everyone is responsible, no one really feels responsible” (Bandura et al. 1996, 365). In traffic safety, diffusing responsibility might look like: “Talking on a cell phone while driving isn’t that dangerous because everyone talks on their cell phones while driving.” Other attempts to avoid responsibility include: “creating systems of deniability, keeping themselves willfully uninformed about harmful activities...and enlisting proxies to distance themselves from transgressive practices” (Bandura 2016, 444).

At the outcome focus, a person seeks to minimize or disregard the consequences of the negative behavior (Bandura et al. 1996, 364-374; Detert, Treviño, and Sweitzer 2008, 374-391; Gini, Pozzoli, and Hymel 2014, 56-68). Selectively misrepresenting and minimizing the negative harm and consequences associated with a behavior while highlighting the positive impact of a behavior can weaken a person’s self-regulatory processes that censure their behavior (Bandura et al. 1996, 364-374; Gini, Pozzoli, and Hymel 2014, 56-68). In addition to misrepresenting or minimizing the negative consequences of behavior, a person may also seek to “discredit evidence of the harm they cause[d]” (Bandura et al. 1996, 366). In traffic safety, an example of minimizing consequences of behavior might be: “Honking the horn at another driver is acceptable because it doesn’t cause harm to anyone,” or “Not wearing my seat belt is okay because it doesn’t impact anyone else.”

At the victim focus, disengagement practices focus on the recipient of the negative or harmful behavior (Bandura et al. 1996, 364-374; Detert, Treviño, and Sweitzer 2008, 374-391; Gini, Pozzoli, and Hymel 2014, 56-68). Mechanisms in this category include: seeing the recipient as having non-human (dehumanization) qualities and viewing the recipient as someone who provoked the negative behavior (attribution of blame) (Bandura et al. 1996, 364-374; Gini, Pozzoli, and Hymel 2014, 56-68). Bandura (2002, 108) explained that a “person’s moral self-regulatory process and self-censure depends on how the person views the people they mistreat.” By turning people into subhuman animals without “feelings, hopes, and concerns” a person can more easily act in harsh ways and still maintain a sense of self-respect (Bandura 2016, 84). In traffic safety, dehumanization might look like: “Those animals deserve to be honked at.” Attribution of blame might look like: “People who drive too slow deserve to be tailgated.”

Activating these disengagement mechanisms is a gradual process that occurs over time (Bandura 2002, 101-119). Initially, a person starts with small transgressions. They act in ways that are slightly incongruent from their internal set of standards and experience mild self-sanctions that are a little uncomfortable but easy to overcome (Bandura 2002, 101-119). However, as a person repeatedly engages in negative behaviors that do not align with their set of standards, their self-regulation process is weakened, and bad behaviors become more easily initiated (Bandura 2002, 101-119).

4.2.1.3 Individual and Situational Factors Influencing Moral Disengagement

Researchers exploring moral disengagement have studied both individual and contextual factors. Individual factors associated with moral disengagement include: social and emotional competence, aggression, locus of control, trait cynicism, moral identity, guilt, and shame. Contextual factors such as the situational and social context have also been studied. These factors are included in this literature review because they influence moral disengagement and because they may be important areas of consideration as traffic safety professionals seek to create and disseminate messages that overcome moral disengagement.

Social and Emotional Competence

There is an extensive body of literature that suggests social and emotional competence is related to a number of positive outcomes (Jones and Doolittle 2017, 3-11). Having strong social and emotional skills is associated with fewer behavioral problems and associated with many positive outcomes like improved relationships and positive emotional wellbeing (Durlak et al. 2011, 405-432; Taylor et al. 2017, 1156-1171). Given the important role that strong social and emotional competencies play in one's life outcomes, it is plausible that these competencies may also be playing a role in the activation or disengagement of one's moral set of standards. Researchers have studied the relationship between social and emotional competency and moral disengagement.

Empathy and perspective taking are important skills in the development of social and emotional competence (CASEL 2019), and these skills have been found to reduce the activation of the moral disengagement process (Bandura et al. 1996, 364-374; Detert, Trevion, and Sweitzer 2008, 374-391; Bussey, Quinn, and Dobson 2015, 10-29). Bandura and colleagues (1996, 364-374) suggested that adhering to moral standards can be strengthened by fostering empathic concern for others. Detert, Trevino, and Sweitzer (2008, 374-391) found that empathy was negatively associated with moral disengagement suggesting that people who are increasingly able to empathize with others are less likely to morally disengage.

Similarly, Bussey, Quinn, and Dobson (2015, 10-29) found that lower levels of empathy and perspective taking were associated with higher levels of moral disengagement and overt aggression. Further, the researchers found that the more empathy and perspective taking participants had, the more difficult it was for them to morally disengage (Bussey, Quinn, and Dobson 2015, 10-29). Fernandez-Berrocal and Extremera (2005, 549) suggested that the “quality of moral decisions is very sensitive to emotions, and that emotional intelligence might determine decisions in different moral tasks.”

Aggressive Behavior

A large body of research has focused on the connections between moral disengagement and aggressive behavior. For example, Gini, Pozzoli, and Hymel (2014, 56-68) found moral

disengagement is significantly associated with aggressive behavior in a meta-analytic review that included 17,776 children and youth. Similarly, Killer, et al. (2019, 1-13) found a significant relationship between moral disengagement and bullying behavior.

Locus of Control

Locus of control is a term used to define “how individuals think about the events in their lives”; it is an orientation people have about their personal control or lack of control over life outcomes (Detert, Trevino, and Sweitzer 2008, 377). A person with an orientation toward a higher internal locus of control understands how their behaviors are connected to the outcomes they experience and have a sense of personal responsibility for those outcomes (Detert, Trevino, and Sweitzer 2008, 377). In contrast, a person with an orientation toward a higher external locus of control views life’s outcomes as fate or luck (chance locus of control) or controlled by the actions of others (powerful others’ locus of control) (Detert, Trevino, and Sweitzer 2008, 377).

Detert, Trevino, and Sweitzer (2008, 374-391) hypothesized that people with orientations that support higher internal locus of control would be less likely to morally disengage than those that have a higher external locus of control. However, results showed that internal locus of control and the powerful others’ locus of control were not related to moral disengagement, but chance locus of control was positively related to moral disengagement (Detert, Trevino, and Sweitzer 2008, 374- 391). Moral disengagement is more likely when a person believes that life’s outcomes are a result of fate or luck as opposed to seeing how their behaviors influence those outcomes (Detert, Trevino, and Sweitzer 2008, 374-391). Essentially, an orientation about the world that leaves outcomes to fate, luck, or chance possibly diminish a sense of personal responsibility and thus makes disengagement more likely (Detert, Trevino, and Sweitzer, 2008, 374-391). Bandura et al. (1996, 364-374) suggested that assuming personal responsibility for one’s actions and not minimizing the injurious effects of those actions can help a person to maintain alignment with their standards and can deter disengagement.

Trait Cynicism

Trait cynicism is viewed as an individual philosophy of human nature and defined as “a general attitude characterized by feelings of frustration and disillusionment as well as distrust of other persons, groups, ideologies, social conventions, and institutions” (Detert, Trevino, and Sweitzer 2008, 377). Cynicism has also been defined in TheFreeDictionary (2019) as “...a general distrust of the integrity or professed motives of others.” Detert, Trevino, and Sweitzer (2008, 374-391) explored the relationship between moral disengagement and trait cynicism. It was hypothesized that those with high trait cynicism (a general distrust of others and systems) would be more likely to use mechanisms of disengagement like displacing responsibility and attributing blame (Detert, Trevino, and Sweitzer 2008, 374-391). Results showed that trait cynicism was positively correlated with moral disengagement (Detert, Trevino, and Sweitzer 2008, 374-391). Vice (2011, 170-172) proposes cynicism is a “stance of disengagement” and further suggests that cynicism “harms our commitment to morality itself.”

Moral Identity

Moral identity “concerns how individuals think about themselves” (Detert, Trevino, and Sweitzer 2008, 377). Moral identity is considered a dispositional construct that “translates moral judgements, principles, or ideals into action” (Aquino et al. 2007, 386). Moral identity has been explored as a factor influencing moral disengagement (Aquino, et al. 2007, 385-392; Detert,

Trevino, and Sweitzer 2008, 377). Detert, Trevino, and Sweitzer (2008, 374-391) suggest that a strong moral identity inhibits moral disengagement. Aquino, et al. (2007, 388) found a well-established moral identity can “neutralize the effects of cognitive rationalizations that allow people to inflict harm upon others.”

Moral Emotions--Guilt and Shame

Guilt and shame are emotions that have been termed “self-conscious” moral emotions because these emotions focus inwardly on the self, versus emotions that focus on others, like anger. (Johnson and Connolly 2016, 184-189; Tangney, Stuewig, and Mashek 2006 345-372). These moral, self-conscious emotions act as feedback for a person’s behaviors. For example, when a person’s behaviors match their internal set of moral standards, they are likely to experience positive feelings like pride and self-approval; in contrast, acting in incongruent ways results in feelings of shame, guilt, and embarrassment (Tangney, Stuewig, and Mashek 2006, 347). These moral self-conscious emotions “function as an emotional moral barometer, providing immediate and salient feedback on our social and moral acceptability” (Tangney, Stuewig, and Mashek 2006, 347). While these self-conscious moral emotions can be situation specific, researchers have also studied the dispositional tendencies of people to experience these emotions (guilt-proneness and shame-proneness) across varied situations.

Guilt and shame are sometimes viewed synonymously; however, they are different moral self-conscious emotions (Tangney, Stuewig, and Mashek 2006, 345-372). Shame tends to focus on one’s evaluation of self (e.g., “I am bad”). Shame can be destructive, evoke a sense of worthlessness, and is associated with a variety of negative and risky behaviors (Tangney, Stuewig, and Mashek 2006, 345-372). Guilt tends to focus on one’s specific behavior (e.g., “I did a bad thing”). Guilt fosters empathy, encourages moral behavior, and motivates actions to repair the harm that has been caused by their behaviors (Tangney, Stuewig, and Mashek 2006, 345-372). Guilt can motivate a person to consider the effects of their behaviors on others and counter the negative influence of moral disengagement when making ethical decisions (Johnson and Connolly 2016, 184-189). Empirical research supports that “guilt proneness is inversely related to antisocial and risky behavior” (Tangney, Stuewig, and Mashek 2006, 354). In reviewing the impact and outcomes of these two self-conscious moral emotions, researchers have suggested “feelings of guilt represent the moral emotion of choice” (Johnson and Connolly 2016, 355).

Contextual Factors

In addition to individual factors, researchers have also studied situational and social factors to better understand when (i.e. what context) people are more likely to morally disengage. Moral disengagement is influenced by the situational and social context in which a person finds themselves (Hystad, Mearns, and Eid 2014, 138-145). White-Ajmani and Bursik (2014, 90-100) explored the role of situational pressures in moral disengagement and found that situational context moderated the relationship between moral disengagement and aggression. In other words, the situation a person finds themselves in plays an important role in the person’s ultimate behavior (White-Ajmani and Bursik 2014, 90-100). Pelton et al. (2004, 31- 39) studied the role of moral disengagement in the context of the parenting style and the subsequent behaviors of children. Results showed that “positive parenting (high warmth, high monitoring, and control) was related to lower levels of moral disengagement, which, in turn, positively correlated with aggressive and delinquent behavior” (Pelton et al. 2004, 38).

Research has suggested that moral standards are developed through a process of socialization, thus moral disengagement is influenced by the cultural norms to which one is accustomed (Bandura et al. 1996, 364-374). Culture can be defined as the “shared belief system of a group. Thus, culture is a collection of shared beliefs that influence the behaviors of individuals” (Ward, Otto, and Finley 2019, 12). Culture, as a contextual factor to better understand moral disengagement, has been studied. For example, Petitta, Probst, and Barbaranelli (2017, 489-504) found that safety cultures within organizations play an important role in activating moral disengagement among employees. In particular, the researchers studied five safety culture patterns and found that while some culture patterns discourage moral disengagement, others predict higher moral disengagement (Petitta, Probst, and Barbaranelli 2017, 489-504).

Zhao, Zhang, and Xu (2019, 93-101) found that perceived descriptive norms (a person’s beliefs about the prevalence of behaviors performed by others in a specific situation) influence moral disengagement. In a study of deviant behaviors (i.e., corruption) when the perceived prevalence of corrupt behaviors of others is high, people can more easily rationalize negative behaviors, disengage from their self-regulatory processes, and engage in the negative behaviors themselves (Zhao, Zhang, and Xu 2019, 93-101). It was suggested that interventions focused on changing belief systems may be an important focus area (Zhao, Zhang, and Xu 2019, 93-101). Similarly, other researchers have emphasized that in order to change behaviors (including those that stray from a person’s moral standards), efforts must focus on changing beliefs (Ward, Otto, and Finley 2019, 1-35).

4.2.1.4 Research Exploring Traffic Safety and Moral Disengagement

Moral disengagement has been studied to understand a variety of different behaviors including behaviors like: helping (Paciello, et al. 2013, 3-7) bullying, and (Gini, Pozzoli, and Hymel 2014, 56-68; Killer et al. 2019, 1-13), cheating (Shu, Gino, and Bazerman 2011, 330- 349). However, research exploring moral disengagement and traffic safety-related behaviors is limited. Very few studies were found addressing moral disengagement and traffic safety-related driving behaviors. One study found that driving moral disengagement was a significant predictor of driving aggression (Cleary, Lennon, and Swann 2016, 1-17). The authors concluded that one’s “tendency to disengage from one’s usual moral code or standard of behavior may be an important factor that influences driver decisions about whether to respond aggressively to their frustrations or anger in relation to other drivers’ behaviors” (Cleary, Lennon, and Swann 2016, 13).

Another study revealed that moral disengagement may explain aspects of aggressive driving (i.e., following too closely, excessive passing, and speeding) (Swann, Lennon, and Cleary 2017, 124-136). Swann, Lennon, and Clearly (2017, 124-136) developed a new research instrument called the Driving Moral Disengagement Scale (DMDS). In this study using the new DMDS, Swann, Lennon, and Cleary (2017, 124-136) found that driving moral disengagement was the strongest significant predictor of driving aggression. More research to understand the role of moral disengagement in traffic safety-related behaviors is warranted.

4.3 Measuring Psychological Reactance and Moral Disengagement

To inform the design of the surveys for this project, a review of how other researchers have measured psychological reactance and moral disengagement was conducted. Examples of questions and response formats from previous research are provided.

4.3.1 Measuring Psychological Reactance

4.3.1.1 Measuring Freedom Threat

To assess perceived threats to freedom, a common four-item scale has been used (Dillard and Shen, 2005; Cho and Sands 2011, 308-317; Shen 2015, 975-985; Miller et al. 2007, 219-240). The items of this scale are found in Table 1.

Table 1. Examples of Items to Measure Perceived Threat to Freedom

Measurement Constructs	Response Formats	Source
The message threatened my freedom to choose	Four-point scales ranging from (1) strongly disagree to strongly agree (7).	Dillard and Shen 2005, 144-168; Cho and Sands 2011, 308-317; Shen 2015, 975-985; Miller et al. 2007, 219-240
The message tried to make a decision for me		
The message tried to manipulate me		
The message tried to pressure me		

4.3.1.2 Message Framing Manipulation

How a message is framed can influence the message itself. Researchers have conducted an induction check to test the message framing manipulation using semantic differential items (Shen 2015, 975-985) (See Table 2). Semantic differential items generally include asking participants to make a judgement based on a set of opposing word pairs like good/bad, positive/negative, etc.

Table 2. Examples of Items to Measure Message Framing Manipulation

Measurement Constructs	Response Formats	Source
The participants were asked to make a judgment about the emphasis of the end state presented in the message on the following word pairs: Cost/benefits; Loss/gain; Advantages/disadvantages; Negative/positive outcomes.	Five-point semantic differential items	Shen 2015, 975-985

4.3.1.3 Measuring Cognition

A common way to measure counterarguing is to have respondents complete a thought-listing procedure (Dillard and Shen 2005, 144-168; Rains 2013, 47-73; Quick and Stephenson 2007, 131-138; Quick and Considine 2008, 483-491). One example of this procedure to measure cognition was done by Quick and Stephenson (2007, 131-138). In this study, respondents were given 90 seconds to list whatever thoughts came to mind after reading/hearing a specific message. Once those cognitive responses were gathered, they were categorized as favorable (in agreement with the message), unfavorable (not in agreement with the message), or neutral. The total number of unfavorable thoughts was used as the cognitive component of state of reactance (Quick and Stephenson 2007, 131-138). Counterarguments are commonly “operationalized as the number of negative thoughts listed in response to the freedom-threatening message” (Rains 2013, 58).

4.3.1.4 Measuring Emotion

In a meta-analysis, Rains (2013, 47-73) found self-report and/or thought-listing procedures to measure anger were common. A common four-item, self-report measure (see Table 3) has been used in many research studies to measure anger (Quick and Stephenson 2007, 131-138; Quick and Considine 2008, 483-491; Miller et al. 2007, 219-240; Dillard and Shen 2005, 144-168).

Table 3. Examples of Items to Measure Anger

Measurement Constructs	Response Formats	Source
To what extent did the message that you just read make you feel...	Four-point scale ranging from (0) none of this feeling to (4) a great deal of this feeling	Dillard and Shen 2005, 144-168
Angry/irritated/annoyed/aggravated		

4.3.1.5 Measuring Attitude

Given that one's attitude plays an important role in behavior, how persuasive messages influence attitude have been an important line of inquiry for researchers (Dillard and Shen 2005, 144-168; Richards, Banas, and Magid 2017, 890–902; Miller et al. 2007, 219-240). Rains (2013, 59) indicated that "attitude toward a product or behavior evaluates the impact of the freedom threat on one's evaluation of a behavior or product." Many researchers use semantic differential scales to assess attitude. Cho and Sands (2011, 308-317) measured attitudes toward sunscreen behavior with a semantic differential scale comprising three pairs of bipolar adjectives including "bad=good," "negative=positive," and "unfavorable=favorable." The response scale ranged from -3 to +3. Miller et al. (2007, 219-240) used the seven-item semantic differential attitude scale that was proposed by Dillard and Shen (2005, 229) asking how positive/negative, desirable/undesirable, necessary/unnecessary, and beneficial/unbeneficial the participant felt the activity of physical exercise to be and how bad/good, foolish/wise, and unfavorable/favorable.

Taking a slightly different approach, Shen (2015, 975-985) measured attitude as a result of a persuasive outcome by assessing advocacy for the message. Attitude toward advocacy of the message was measured by four 5-point Likert items: "I agree with what the message recommends," "I support what the message advocates," "I am in favor of the position in the message," and "I endorse the claims made in the message" (Shen 2015, 979).

4.3.1.6 Measuring Perceived Effectiveness and Strength

To assess how persuasive the message is, Quick and Considine (2008, 483-491) used a two-item scale: "I felt this (weightlifting or group exercise) message was __." The response choices were on a 7-point continuum ranging from 1 (not at all persuasive) to 7 (very persuasive) and 1 (not at all convincing) to 7 (very convincing). Shen (2015, 975-985) measured perceived effectiveness using seven 5-point semantic differential items. The items were the following words and their antonyms: convincing, believable, sensible, biased, distorted, fair, and balanced. Others have used a measure to assess the perceived message strength (Gollust and Cappella 2014, 493-510; Zhao et al. 2011, 48-75) (See Table 4).

Table 4. Examples of Items to Measure Perceived Strength

Measurement Constructs	Response Formats	Source
1. The statement is a reason for _____ that is believable.	Fill in the blanks with the target behavior for the persuasive argument. Use a 5-point Likert scale (strongly disagree to strongly agree) to score items 1–8. Use a 5-point Likert type scale (very weak to very strong) to score item 9.	Zhao et al. 2011, 48-75
2. The statement is a reason for _____ that is convincing.	Subtract item 7) from item 6) to create a single thought favorability item and then convert the new item to a 5-point scale by dividing it by 2 and then adding a constant of 3.	
3. The statement gives a reason for _____ that is important to me.		
4. The statement helped me feel confident about how best to _____.		
5. The statement would help my friends _____.		
6. The statement put thoughts in my mind about wanting to _____.		
7. The statement put thoughts in my mind about not wanting to _____.		
8. Overall, how much do you agree or disagree with the statement?		
9. Is the reason the statement gave for _____ a strong or weak reason?		
“This paragraph about health is believable.”	Reported on a 5-Point Likert Scale ranging from 1 (not at all believable) to 5 (very believable); ranging from 1 (not at all convincing) to 5 (very convincing); ranging from 1 (strongly disagree) to 5 (strongly agree); and ranging from 1 (very weak) to 5 (very strong)	Gollust and Cappella 2014, 493-510
“This paragraph about health is convincing.”		
“How much do you agree overall with the paragraph?”		
“Does this paragraph present a strong or weak argument?”		

4.3.1.7 Measuring Behavioral Intention

Dillard and Shen (2005, 144-168) measured behavioral intention using a 100-point, single-item estimate of the likelihood that participants would engage in a behavior or would limit a behavior. Miller et al. (2007, 229-230) modified this scale and used a percentage. “Respondents were requested to report on a scale of 0–100 (with 0 = definitely will not and 100 = definitely will) the likelihood they would exercise within the following week” (Miller et al. 2007, 229-230).

4.3.1.8 Measuring Reactance Restoration

The Reactance Restoration Scale (RRS) was developed by Quick and Stephenson (2007, 131-138) to measure reactance restoration (See Table 5).

Table 5. Examples of Items to Reactance Restoration

Measurement Constructs	Response Formats	Source
Right now, I am ____ to (exercise/use sunscreen/etc.).	Seven-point scale using scales with the following anchor points: motivated-unmotivated, determined-not determined, encouraged-not encouraged, and inspired-not inspired	Quick and Stephenson, 2007, 134
Right now, I am ____ to be around others who (exercise/use sunscreen/etc.).		
Right now, I am ____ to do something totally unhealthy.		

4.3.1.9 Measuring Reactance as a Trait

Various researchers have sought to measure reactance proneness. Hong and Page (1989, pp.1323- 1326) created the Hong Psychological Reactance Scale (HPRS). Dowd, Milne, and Wise (1991,544) created the Therapeutic Reactance Scale (TRS) and found results that suggested psychological reactance is “relatively stable over time and across situations”; however, they also suggested that “reactance is only partly a trait-like variable.” Table 6 provides items and response formats for both the HPRS and TRS.

Table 6. Examples of Items to Measure Reactance as a Trait

Measurement Constructs	Response Formats	Source
<i>Hong's Psychological Reactance Scale (HPRS)</i>		
<ul style="list-style-type: none"> - I become frustrated when I am unable to make free and independent decisions. - I become angry when my freedom of choice is restricted. - It irritates me when someone points out things which are obvious to me. - The thought of being dependent on others aggravates me. - Regulations trigger a sense of resistance in me. - I find contradicting others stimulating. - When something is prohibited, I usually think “that's exactly what I am going to do.” - I resist the attempts of others to influence me. - It makes me angry when another person is held up as a model for me to follow. - When someone forces me to do something, I feel like doing the opposite. - It disappoints me to see others submitting to a society's standards and rules. - I am content only when I am acting of my own free will. 	5-point Likert Scale (1)=strongly disagree, (3)=neither agree nor disagree, and (5)=strongly agree.	Hong and Page 1989, 1323-1326

Measurement Constructs	Response Formats	Source
<ul style="list-style-type: none"> - I consider advice from others to be an intrusion. - Advice and recommendations induce me to do just the opposite. 		
<p><i>Therapeutic Reactance Scale (TRS)</i></p> <p>1. If I receive a lukewarm dish at a restaurant, I make an attempt to let that be known. 2. I resent authority figures who try to tell me what to do. 3. I find that I often have to question authority. 4. I enjoy seeing someone else do something that neither of us is supposed to do. 5. I have a strong desire to maintain my personal freedom. 6. I enjoy playing “devil’s advocate” whenever I can. 7. In discussions, I am easily persuaded by others. (R) 8. Nothing turns me on as much as a good argument! 9. It would be better to have more freedom to do what I want on a job. 10. If I am told what to do, I often do the opposite. 11. I am sometimes afraid to disagree with others. (R) 12. It really bothers me when police officers tell people what to do. 13. It does not upset me to change my plans because someone in the group wants to do something else. (R) 14. I don’t mind other people telling me what to do. (R) 15. I enjoy debates with other people. 16. If someone asks a favor of me, I will think twice about what this person is really after. 17. I am not very tolerant of others’ attempts to persuade me. 18. I often follow the suggestions of others. (R) 19. I am relatively opinionated. 20. It is important to me to be in a powerful position relative to others. 21. I am very open to solutions to my problems from others. (R) 22. I enjoy “showing up” people who think they are right. 23. I consider myself more competitive than cooperative. 24. I don’t mind doing something for someone even when I don’t know why I’m doing it. (R) 25. I usually go along with others’ advice. (R) 26. I feel it is better to stand up for what I believe than to be silent. 27. I am very stubborn and set in my ways. 28. It is very important for me to get along well with the people I work with. (R)</p>	<p>4-point Likert Scale (1)=strongly disagree, (2)=disagree, (3)=agree, (4)=strongly agree</p> <p>(R)=reverse code</p>	<p>Dowd, Milne, and Wise 1991, 541-545</p>

4.3.2 Measuring Moral Disengagement

4.3.2.1 Measuring Moral Disengagement

Many researchers have sought to measure moral disengagement by focusing on the eight mechanisms of moral disengagement. For example, Bandura, et al. (1996, 363-374) created a Mechanisms of Moral Disengagement Scale (MMDS) to measure the disengagement mechanisms to

assess the proneness to moral disengagement. Included in this scale were eight mechanisms of moral disengagement and each mechanism had a subset of four items in the scale. Detert, Trevino, and Sweitzer (2008, 374-391) adapted Bandura et al.'s original moral disengagement scale to focus on adults instead of children. Table provides examples of items and response formats to measure moral disengagement.

Table 7. Examples of Items to Measure Moral Disengagement

Measurement Constructs	Response Formats	Source
MMDS		
1. It is alright to fight to protect your friends.	3-Point Likert	Bandura, et al.
2. Slapping and shoving someone is just a way of joking.	Scale their degree of acceptance of moral exonerations	1996, 364–
3. Damaging some property is no big deal when you consider that others are beating people up.	for such conduct on a an agree-disagree continuum.	374.
4. A kid in a gang should not be blamed for the trouble the gang causes.		
5. If kids are living under bad conditions they cannot be blamed for behaving aggressively.		
6. It is okay to tell small lies because they don't really do any harm.	<i>Note.</i> The following items correspond to the various mechanisms of moral disengagement.	
7. Some people deserve to be treated like animals.		
8. If kids fight and misbehave in school it is their teacher's fault.		
9. It is alright to beat someone who bad mouths your family.		
10. To hit obnoxious classmates is just giving them "a lesson."		
11. Stealing some money is not too serious compared to those who steal a lot of money.	<i>Moral justification:</i> 1,9, 17,25.	
12. A kid who only suggests breaking rules should not be blamed if other kids go ahead and do it.	<i>Euphemistic language:</i> 2,10, 18,26.	
13. If kids are not disciplined they should not be blamed for misbehaving.	<i>Advantageous comparison:</i> 3,11, 19,27.	
14. Children do not mind being teased because it shows interest in them.		
15. It is okay to treat badly somebody who behaved like a "worm."	<i>Displacement of responsibility:</i> 5, 13,21,29. <i>Diffusion of responsibility:</i> 4, 12, 20,28.	
16. If people are careless where they leave their things it is their own fault if they get stolen.		
17. It is alright to fight when your group's honour is threatened.	<i>Distorting consequences:</i> 6, 14,22,30.	
18. Taking someone's bicycle without their permission is just "borrowing it."		
19. It is okay to insult a classmate because beating him/her is worse.	<i>Attribution of blame:</i> 8, 16, 24, 32.	
20. If a group decides together to do something harmful it is unfair to blame any kid in the group for it.	<i>Dehumanization:</i> 7, 15,23,31.	
21. Kids cannot be blamed for using bad words when all their friends do it.		
22. Teasing someone does not really hurt them.		
23. Someone who is obnoxious does not deserve to be treated like a human being.		
24. Kids who get mistreated usually do things that deserve it.		

- 25. It is alright to lie to keep your friends out of trouble.
- 26. It is not a bad thing to "get high" once in a while.
- 27. Compared to the illegal things people do, taking some things from a store without paying for them is not very serious.
- 28. It is unfair to blame a child who had only a small part in the harm caused by a group.
- 29. Kids cannot be blamed for misbehaving if their friends pressured them to do it.
- 30. Insults among children do not hurt anyone.
- 31. Some people have to be treated roughly because they lack feelings that can be hurt.
- 32. Children are not at fault for misbehaving if their parents force them too much.

Items in bold compose the 24-item scale used in the study.

Items not in bold represent items dropped based on factor analysis.

MJ _ moral justification; EL _ euphemistic labeling;
AC _ advantageous comparison; DISR_displacement of responsibility;
DIFR_diffusion of responsibility;
DC _ distortion of consequences; AB _attribution of blame;
DEH _ dehumanization.

The items were assessed on a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree).

Detert, Trevino, and Sweitzer 2008, 374-391

- 1. It is alright to fight to protect your friends. [MJ]**
- 2. It's ok to steal to take care of your family's needs. [MJ]**
- 3. It's ok to attack someone who threatens your family's honor. [MJ]**
- 4. It is alright to lie to keep your friends out of trouble. [MJ]
- 5. Sharing test questions is just a way of helping your friends. [EL]**
- 6. Talking about people behind their backs is just part of the game. [EL]**
- 7. Looking at a friend's homework without permission is just "borrowing it." [EL]**
- 8. It is not bad to "get high" once in a while. [EL]
- 9. Damaging some property is no big deal when you consider that others are beating up people. [AC]**
- 10. Stealing some money is not too serious compared to those who steal a lot of money. [AC]**
- 11. Not working very hard in school is really no big deal when you consider that other people are probably cheating. [AC]
- 12. Compared to other illegal things people do, taking**

some things from a store without paying for them is not very serious. [AC]

- 13. If people are living under bad conditions, they cannot be blamed for behaving aggressively. [DISR]**
14. If the professor doesn't discipline cheaters, students should not be blamed for cheating. [DISR]
- 15. If someone is pressured into doing something, they shouldn't be blamed for it. [DISR]**
- 16. People cannot be blamed for misbehaving if their friends pressured them to do it. [DISR]**
- 17. A member of a group or team should not be blamed for the trouble the team caused. [DIFR]**
18. A student who only suggests breaking the rules should not be blamed if other students go ahead and do it. [DIFR]
- 19. If a group decides together to do something harmful, it is unfair to blame any one member of the group for it. [DIFR]**
- 20. You can't blame a person who plays only a small part in the harm caused by a group. [DIFR]**
21. It is ok to tell small lies because they don't really do any harm. [DC]
- 22. People don't mind being teased because it shows interest in them. [DC]**
- 23. Teasing someone does not really hurt them. [DC]**
- 24. Insults don't really hurt anyone. [DC]**
25. If students misbehave in class, it's their teacher's fault. [AB]
- 26. If someone leaves something lying around, it's their own fault if it gets stolen. [AB]**
- 27. People who are mistreated have usually done things to deserve it. [AB]**
- 28. People are not at fault for misbehaving at work if their managers mistreat them. [AB]**
29. Some people deserve to be treated like animals. [DEH]
- 30. It is ok to treat badly someone who behaved like a "worm." [DEH]**
- 31. Someone who is obnoxious does not deserve to be treated like a human being. [DEH]**
32. Some people have to be treated roughly because they lack feelings that can be hurt. [DEH]

4.3.2.2 Measuring Moral Disengagement in a Driving Context

Researchers have adapted previous scales to measure moral disengagement in a driving context. For example, Cleary, Lennon, and Swann (2016, 7) adapted Detert, Trevino, and Sweitzer's (2008, 374-391) scale of moral disengagement to fit within a driving context. Examples of some of the scale items include: "honking the horn loudly is just a way of letting off frustration (euphemistic labeling)"; "overly cautious drivers are a risk to everyone on the road (attribution of blame)." The Driving Moral Disengagement Scale (DMDS) was created to measure moral disengagement in aggressive driving and has undergone preliminary validation (Swann, Lennon, and Cleary 2017, 124-136) (See Table).

Table 8. Examples of Items and Response Formats to Moral Disengagement in Driving

Measurement Constructs	Response Formats	Source
DMDS		
Moral justification		
1. It's alright to deliberately hold someone up by going slow if it's for their own good	The following statements refer to your thoughts and beliefs about different driving situations. Indicate how much you agree or disagree with each statement.'	Swann, Lennon, and Cleary 2017, 124-136
7. It's ok to tailgate if it gets people to realise they are doing the wrong thing		
14. It's ok to yell at other drivers who put the lives of your passengers at risk		
Euphemistic labelling		
2. Honking the horn loudly is just a way of letting off frustration		
8. Preventing others from passing is just part of the game		
15. Following too closely or cutting someone off, is just a way of teaching someone a lesson they need		
Advantageous comparison		
3. Tailgating is no big deal when you consider other people are deliberately running red lights		
9. Yelling at other drivers is pretty tame when compared to people that attack other drivers		
20. Speeding a little over the limit is not too serious compared to those that speed a lot over the limit		
Displacement of responsibility		
10. If a driver is pushed into being rude to other drivers they shouldn't be blamed for it		
21. People can't be blamed for intimidating another driver if their friend pressured them into it		
Diffusion of responsibility		
4. You can't blame a single driver for going through an amber		

light if a whole group does it

5. It's ok to go over the speed limit if it means you are keeping up with the rest of the traffic

16. It's unfair to blame a driver for driving in the bus lane if everyone is doing it

Distortion of consequences

11. Drivers don't mind being honked at because they know it just means 'hurry up'

17. Flashing headlights to get someone to move over, doesn't really hurt anyone

22. Tailgating other vehicles when the traffic is heavy isn't really dangerous

Attribution of blame

13. If you are getting honked at while driving you probably deserve it

19 Overly cautious drivers who are tailgated, deserve it because they are a risk to everyone on the road

23. People who don't know how to drive, provoke bad driving in others

Dehumanization

6. It's alright to abuse drivers who are behaving like "knobs"

12. A driver who is inconsiderate doesn't deserve to be treated like a normal person

18. Some drivers deserve to be treated like the idiots they are

4.4 Messaging, Psychological Reactance, and Moral Disengagement

Understanding psychological reactance and moral disengagement in the context of traffic safety has important implications for how traffic safety professionals can seek to adjust traffic-safety messaging to mitigate these phenomena and influence the small group of people engaging in risky traffic behaviors. Many agencies involved with traffic safety use messaging as a means of influencing traffic safety-related behaviors. This section explores persuasive messaging and what has been found in the research regarding components of messaging that decrease psychological reactance and overcome moral disengagement. Exploring "message strategies that make possible directives for behavior that achieve an optimal balance of maximizing behavior change and minimizing reactance" (Rains 2013, 69) could ultimately improve traffic safety especially for the small portion of the population (i.e., about 10 percent) who still do not wear a seat belt. Further, helping people to avoid disengaging from their self-regulatory processes while driving could influence those who drive aggressively and regularly speed.

Researchers have proposed a conceptual framework to help traffic safety professionals design and evaluate messages intended to persuade (Lewis, Watson, and White 2016, 309-314). The

“Step approach to Message Design and Testing” (SatMDT) framework includes four steps which provide guidance on the design, dissemination, and evaluation of persuasive traffic safety messages (Lewis, Watson, and White 2016, 309-314). In addition to this conceptual framework, it is also important to consider what has been learned about messaging to reduce reactance and overcome moral disengagement with a variety of health and risk behaviors. Messaging components including the message’s style, structure, content, and delivery are reviewed and can be a useful starting place for creating traffic safety messages that are purposefully designed to reduce psychological reactance and overcome moral disengagement.

4.4.1 Message Style

4.4.1.1 Use of Language

Many researchers have highlighted the importance of language choice in persuasive messaging (Dillard and Shen 2005, 144-168; Shen 2015, 975-985; Miller et al. 2007, 219-240; Shen 2015, 975-985; Quick and Considine 2008, 483-491; Grandpre et al. 2003, 349-366). Research has suggested that strong, controlling, forceful, rigid, and explicit language may threaten freedom and elicit psychological reactance (Miller et al. 2007, 219-240; Shen 2015, 975-985; Quick and Considine 2008, 483-491). Examples of such language include: “‘you must,’ ‘it is impossible to deny,’ ‘you have to,’ ‘do it,’ and ‘any reasonable person has to agree’” (Rains 2013, 67).

Shen (2015, 975-985), for example, found that strong and rigid language increases threat to freedom and thus increases reactance in messages about sunscreen. Quick and Considine (2008, 483-491) found that forceful language in persuasive exercise messages for adults increases threat to freedom and thus reactance. Similarly, in a study of young adults, Miller et al. (2007, 223) found that controlling language like “ought” and “must” in health promotion messages increases perceived threat to freedom and reactance. Language that appears to infringe upon a person’s freedoms by directing, commanding, or controlling a person’s behaviors can arouse psychological reactance and ultimately have effects that are counter to what is intended.

In contrast, language that is suggestive, fosters choice, and uses “mild and tentative language with less explicit intent to persuade” has been found in the research to reduce a person’s perceived threats to freedom and thus reduces reactance (Shen 2015, 978). Language like: “there is evidence,” and “you might want to consider doing...” have been used in persuasive messaging to reduce reactance (Shen 2015, 975-985). Other words that are suggestive and convey a person has a choice include: “possibly,” “maybe,” (Miller et al. 2007, 223) “could,” “may,” and “if you like” (Moller, Ryan, and Deci 2006, 109).

Grandpre et al. (2003, 349-366) found that implicit language emphasizing freedom of choice results in less reactance than using explicit language that is more directive and overt. Specifically, in tobacco messaging, Grandpre et al. (2003, 349-366) suggested creating implicit messages that do not limit the range of possible options which could lead to the desired outcomes. Messages designed to allow more choice regarding healthy behaviors, perhaps by “stimulating thought about what it means to be healthy, attractive, accepted, and independent” could be beneficial (Grandpre et al. 2003, 364).

4.4.1.1 Use of Narrative

Storytelling as a message delivery strategy generally includes components like: “cause-and-effect,

sequential unfolding of events, connectivity among story elements, and the presence of one or more characters" (Gardner and Leshner 2016, 739). Testimonials seeking to engage individuals cognitively and emotionally are a common narrative strategy (Gardner and Leshner 2016, 738-751). It has been proposed that using a narrative message to deliver information can reduce counterarguing and may be helpful to reduce psychological reactance (Rains 2013, 47-73; Gardner and Leshner 2016, 738-751; Sukalla, Wagner, and Rackow 2017, 5027-5047).

Gardner and Leshner (2016, 738-751) found that using narrative stories to provide recommendations to adults with diabetes lowered perceived threat to choose, lessened anger and counterarguing, and lessened negative cognitive responses (Gardner and Leshner 2016, 744). Further, narrative messages led to more positive attitudes toward the messages and the recommendations (Gardner and Leshner 2016, 745). Sukalla, Wagner, and Rackow (2017, 5027-5047) found that narratives reduce ambivalence and reactance in messages about organ donation.

Narratives have also been used to promote prosocial behaviors and inhibit moral disengagement. In a communication campaign to increase intergroup tolerance and moral engagement, McAlister et al. (2000, 363-373) used peer modeling in narratives to promote prosocial behaviors and moral engagement.

4.4.1.2 Use of Inoculation Messages

A potential way to reduce psychological reactance is to forewarn people about the potential for reactance before reactance occurs. Inoculation messages have been studied by researchers as a way to reduce psychological reactance and increase message acceptance (Richard and Banas 2015, 451-460). Richards and Banas (2015, 451-460) found support for forewarning people about the possibility of reactance regarding messages aimed to reduce excessive alcohol use. Specifically, people who were exposed to an inoculation message were less threatened and experienced less reactance compared to those who were not exposed to an inoculation message (Richard and Banas 2015, 451). The inoculation message in this study "specifically mentioned that participants might feel like their freedom would be threatened by the impending message (i.e., the forewarning of threat), as well as giving information that suggested why they should not feel threatened (i.e., refutational preemption)" (Richard and Banas 2015, 455).

4.4.2 Message Structure

4.4.2.1 Consider the Message Frame

Framing a message is generally done in two ways (gain or loss) and there is research suggesting that how a message is framed can influence psychological reactance and moral disengagement. A gain message frame focuses on the positive outcomes and benefits of complying with the message (Shen 2015, 975-985). In contrast, a loss message frame focuses on the costs and negative losses one might experience by not complying (Shen 2015, 975-985). Regarding the influence of message framing on psychological reactance, Shen (2015, 981) found that for skin cancer messages, a loss frame leads to stronger psychological reactance than a gain frame. Cho and Sands (2011, 308-317) concluded that loss message frames are viewed more threatening than gain message frames. Reinhart et al. (2007, 229-255) found that gain frame messages about organ donation produced more positive reactions and lowered psychological reactance than loss frame messages.

Given that loss frames are more threatening and focus on incurring negative costs, it is possible

that these frames may heighten feelings of personal distress. Paciello et al. (2013, 3-7) found that personal distress affects moral disengagement. Seeking to frame traffic safety messages using a gain versus loss frame may be important both to reduce psychological reactance and moral disengagement.

4.4.3 Message Content

4.4.3.1 Offer Behavioral Choices

To mitigate reactance, research suggests that offering choices can reduce psychological reactance (Shen 2015, 975-985; Miller et al. 2007, 219-240; Gollust and Cappella 2014, 493-510). Shen (2015, 975-985) found in a study of skin cancer that providing alternative behavioral options reduces psychological reactance. Miller et al. (2007, 219-240) found that providing a short postscript message at the end of the main persuasive message that emphasized participants have a choice in how they behave can act as a form of restoration and reduce the perceived threat to freedom posed by the message. In this study of health promotion messaging, postscript messages included such things as: “The choice is yours,” and “You’re free to decide for yourself” (Miller et al. 2007, 240). Bessarabova, Fink, and Turner (2013, 339-364) followed up the work of Miller et al. and found that restorative postscripts decreased reactance effects when high threat messages were used but not low threat.

4.4.3.2 Promote Critical Thinking and Social Regulation

Research on moral disengagement shows that individuals high in moral disengagement are more likely to make unethical choices and act in disruptive ways (Detert, Trevino, and Sweitzer 2008, 374-391; Fida et al. 2016, 547-564; Bandura et al. 1996, 364-374). Interventions focused on critical thinking (i.e., “skills that make it possible to question beliefs or justifications that make it easy for people to resort to the moral disengagement process”) and social regulation (i.e., “identify and make visible moral disengagement processes among others and to exert social pressure to stop those processes”) may reduce moral justifications and disengagement (Bustamante and Chaux 2014, 52-63). Social pressure in the form of moral norms may also decrease disengagement. In a study of texting while driving among young drivers, Kim (2018, 21) suggested that perceived moral norms are an important leverage point for discouraging this risky behavior and suggested that “campaigns focused on not texting while driving should emphasize the moral obligation associated with this behavior.”

4.4.3.3 Emphasize Empathy and Prosocial Behaviors

Research has studied the role of empathy in reducing psychological reactance and moral disengagement. Shen (2010, 397-422) found that empathy-inducing antidrug messages bolstered persuasion by decreasing reactance and improving attitudes toward the message advocacy. Shen (2011, 404-415) found that empathy inhibits a reactant response in anti-smoking public service announcements.

Similarly, empathy is protective against moral disengagement (Bandura 2016, 1-446). Promoting the commonalities shared among drivers can evoke empathy and thus is protective against moral disengagement (Bandura 2016, 1-446). Detert, Trevino, and Sweitzer (2008, 374-391) found that people who are increasingly able to empathize with others are less likely to morally disengage.

Bussey, Quinn, and Dobson (2015, 22) similarly found that the more students were able to develop an empathic connection with others, “the more difficult it was for them to invoke moral disengagement strategies to weaken the restraints of aggressive behavior.” Paciello et al. (2013, 3-7) found that people who feel high levels of empathy toward others are more likely to engage in prosocial moral reasoning, are less likely to morally disengage, and are more likely to help even when there is a personal cost associated with helping someone else. One way to evoke empathy is to humanize others (Bandura 2016, 1-446). Bandura (2016, 446) suggested “people cannot persuade themselves to behave cruelly toward humanized others despite strong social pressure to do so.” Essentially, helping people to see others like themselves reduces moral disengagement.

Given these findings, messaging that heightens emotional capacity to be concerned for others may be a promising strategy to reduce psychological reactance, reduce moral disengagement, and foster prosocial helping behaviors. There is a small but promising body of research that has suggested promoting prosocial citizenship behaviors may be an important strategy to improve traffic safety, especially with the small group of road users engaging in risky behaviors (Otto, Finley, and Ward, 2016, 96).

4.4.3.4 Accentuate Perspective Taking

Trying to imagine the world from another person’s point of view, also known as perspective taking, has been shown to reduce reactance (Steindl and Jonas 2012, 1153-1160) and has been found to play a role in a person’s propensity for moral disengagement (Bussey, Quinn, and Dobson 2015, 10-29). Thus, traffic safety professionals may want to consider ways of leveraging and promoting perspective taking to reduce psychological reactance and moral disengagement and the negative consequences associated with these phenomena in traffic safety.

Steindl and Jonas (2012, 1153-1160) found that when people take the perspective of another person, they experience less psychological reactance than when they do not. Bussey, Quinn, and Dobson (2015, 10-29) found that lower levels of perspective taking were associated with higher levels of moral disengagement and overt aggression. In a driving context, Swann, Lennon, and Cleary (2017, 134) suggested that campaigns emphasizing the “direct impact [one’s behavior has] on others with whom they might identify, may minimize driving moral disengagement and thus reduce the potential for driving aggression.”

Bandura (2016, 1-446) suggested strategies that promote “shared relational experiences that link one’s own well-being to the well-being of others” can reduce moral disengagement (Bandura, 2016, 446). Promoting a sense of shared responsibility for the safety of all road users may prove to be a beneficial approach to promote moral agency and reduce disengagement.

4.4.3.5 Strengthen Self-Regulatory Mechanisms

Various researchers have suggested that connecting people with their internal set of moral standards is a strategy to reduce moral disengagement (Fida, et al. 2016, 547-564; Swann, Lennon, and Cleary, 2017, 124-136; Cleary, Lennon, and Swann 2016, 1-17). Swann, Lennon, and Cleary (2017, 134) suggested that “strengthening drivers’ self-regulatory mechanisms may be an effective strategy to keep moral agency activated while driving.” They suggested “emphasizing mechanisms like ‘self-pride, self-blame, and anticipated regret’ in traffic safety messaging” should be considered (Swann, Lennon, and Cleary 2017, 134). Cleary, Lennon, and Swann (2016, 13) suggested that “effective interventions should aim to either keep drivers aware of their usual values

or morals in relation to other drivers or attempt to prevent the activation of cognitions that lead to disengagement from one's values/morals while driving." They suggested that "mass education campaigns could thus aim to remind drivers that the driving context is simply one of many everyday contexts, and not somehow exempt from decisions with a value or moral basis" (Cleary, Lennon, and Swann 2016, 13).

4.4.4 Message Delivery

In seeking to reduce reactance to persuasive messages considering who delivers the message is an important consideration (Song, McComas, and Schuler 2018, 591-620). In a study to investigate how modifying the message source enhances or diminishes psychological reactance, it was found that "the more similar and trustworthy participants perceived the source, the less likely the source was to induce freedom threat or reactance" (Song, McComas, and Schuler 2018, 591). Research has found that "recruiting a source that the audience considers similar to them and trustworthy can help diminish possible reactance response" (Song, McComas, and Schuler 2018, 611). The authors suggested that

...even when government agencies are the official party first announcing a new policy measure, they do not necessarily need to be the source who carries the message to the relevant audience. By working with organizations representing interests of the key audience and obtaining their cooperation to spread the news about new policies, governmental agencies may see better reception of policy measures that key audiences would otherwise consider controlling or freedom threatening. (Song, McComas, and Schuler 2018, 611)

5 CONCLUSIONS

A literature review of published research was the focus of this Task 1 Report. The literature review sought to understand what is known about psychological reactance and moral disengagement in the context of traffic safety-related behaviors. The phenomena of psychological reactance (Brehm and Brehm 1981, 1-432) can provide insight about why some persuasive attempts achieve their desired results and others fail, and this understanding may help traffic safety professionals create messaging that is more effective, especially with the small group of people engaging in risky traffic safety behaviors. There are four elements in psychological reactance theory: freedom, threat to freedom, reactance, and restoration of freedom (Dillard and Shen 2005, 144-168). Psychological reactance has been conceptualized as both a situational response (Miron and Brehm 2006, 7) and a trait where some people are more prone to reactance than others (Hong and Faedda 1996, 173-182; Brehm and Brehm 1981, 1-432; Dowd, Milne, and Wise 1991, 541-545). “Resistance lies at the very heart of human change” (Miller and Rollnick 2002, 110); thus, finding ways to reduce psychological reactance can ultimately have an impact on traffic safety.

Moral disengagement explains how “good people can behave badly” (Gini, Pozzoli, and Hymel 2014, 57). Moral disengagement provides insight into why people engage in behaviors that are misaligned with their internal set of moral standards without experiencing emotions like guilt and shame that would deter these negative behaviors from occurring in the future (Bandura 2016, 1-446; Bandura 2002, 101-119; Bandura, et al. 1996, 364-374). People use a variety of mechanisms to disengage from their moral standards including: moral justification, euphemistic labeling, advantageous comparison, displacement of responsibility, diffusion of responsibility, dehumanization, and attribution of blame (Bandura et al. 1996, 364-374; Bandura 2002, 101-119). Research suggests a variety of individual factors like: social and emotional competence, aggression, locus of control, trait cynicism, moral identity, guilt, shame, and contextual factors like the situational context and social context influence moral disengagement.

A review of the literature produced no studies that explored psychological reactance with seat belt use or aggressive driving, no studies that explored moral disengagement and seat belt use, and only a few studies that explored moral disengagement as a psychological phenomenon to explain aspects of aggressive driving (i.e., following too closely, excessive passing, and speeding) (Swann, Lennon, and Cleary 2017, 124-136). Given the limited body of empirical research regarding psychological reactance and moral disengagement in traffic safety, this Task 1 Report gathered relevant research on other health and risky behaviors to provide a foundation for traffic safety professionals as they seek to understand these two phenomena, their implications for traffic safety, and how they have been measured to inform the design of the survey for this project.

The literature review also sought to better understand what components of messaging decrease reactance and overcome moral disengagement as many agencies involved with traffic safety use messaging as a means of influencing traffic safety-related behaviors. Researchers have studied ways to reduce reactance and overcome moral disengagement in messaging about a variety of health behaviors (Shen 2010, 397-422; Richards, Banas, and Magid 2017, 890-902) and through this exploration, they have generated a number of different messaging recommendations to reduce psychological reactance and moral disengagement. Messaging components including the message’s style, structure, content, and delivery were explored and can serve as a starting place for traffic safety professionals seeking to reduce reactance and overcome moral disengagement.

Significant progress has been made to improve traffic safety, and yet, there is more work to be done. Traffic safety professionals continue to seek ways to change the behaviors of those engaged in risky traffic behaviors like not wearing a seat belt and driving aggressively. This Task 1 report provides a foundation for understanding two psychological phenomena: psychological reactance and moral disengagement and provides insight into how messaging might be adjusted to mitigate these phenomena and thereby improve traffic safety.

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