Task 2 Report:
Guidance About Belief Change

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1. INTRODUCTION

Many of us -- as traffic safety stakeholders -- have the goal to reduce the number of traffic fatalities and serious injuries to zero. Because road user behavior is a common factor in traffic crashes, we must explore ways to encourage safer behaviors. Traffic safety culture recognizes that intentional behavior is influenced by the values, beliefs, and attitudes shared among a group of people. Therefore, to change behavior within a group, it is necessary to change beliefs. However, changing beliefs is difficult. To be successful, we need a better understanding of how beliefs are formed and changed so that we can develop more effective traffic safety culture strategies.

By better understanding the processes and conditions that form and change beliefs, traffic safety stakeholders can become more effective in developing and implementing strategies to change traffic safety culture. Growing a more positive traffic safety culture is necessary to achieve and sustain a vision of zero traffic fatalities and serious injuries.

The aims of this project are to:

1. Understand the processes and conditions that influence belief formation and change.
2. Guide traffic safety stakeholders in the design of effective strategies to change traffic safety culture.

In this report (Task 2), we provide guidance developed based on the narrative summary of the main conclusions supported by this literature review process presented in Task 1.

2. BACKGROUND

As shown in Figure 1, the Pooled Fund to date has focused on defining traffic safety culture – "the shared belief system of a group of people, which influences road user behaviors and stakeholder actions that impact traffic safety" (Ward et al., 2019) – including its measurement and relationship to road user behavior. In the next cycle of the Pooled Fund, it is necessary to shift to the next phase of the work, which focuses on growing a positive traffic safety culture.

Figure 1. Phases of work to understand and apply traffic safety culture.

3. MATERIALS AND METHODS

In Task 1, a literature review was conducted to provide a narrative synthesis (Juntunen & Lehenkari, 2021) of relevant information that answered several fundamental questions:

1. What are beliefs?
2. How are beliefs formed?
3. How do beliefs influence behavior?
4. Why do we change our beliefs?
5. How can we support belief change in others?

This review was used to identify 11 recommendations for improving the effectiveness of traffic safety culture strategies that seek to change people's behaviors by changing their beliefs. The recommendations were shifted to the following questions that stakeholders could apply to a specific traffic safety culture strategy:

1. How well does the strategy seek to change specific beliefs that are linked to specific behaviors?
2. How well does the strategy foster slow thinking (see page 10)?
3. How well does the strategy create cognitive dissonance (without shame) (see page 11)?
4. How well does the strategy grow perceived self-efficacy?
5. How is emotion used in the strategy?
6. How does the strategy use a narrative?
7. How vivid is the strategy?
8. How credible is the source?
9. To what degree might the strategy evoke psychological reactance (see page 17)?
10. To what degree does the strategy grow misperceptions of normative beliefs (see page 9) or behaviors?
11. To what degree does the strategy stigmatize certain people?

Information about each of the recommendations follows the questions. The information includes background, why the guidance matters, and examples/suggestions.

4. RESULTS

The following is the text of the guidance document. Appendix A includes the first few pages of the draft with initial formatting.

4.1 Introduction

4.1.1 What is this guidance?

This document provides guidance for traffic safety practitioners on ways to improve the effectiveness of strategies seeking to change people's beliefs and behaviors. Strategies may include countermeasures, training programs, media campaigns, and other activities that seek to change people's traffic safety-related behaviors.

This guidance specifically focuses on strategies that seek to address intentional behaviors (like distracted driving, not using a seat belt, driving after drinking, establishing family traffic-safety rules, etc.). These strategies often focus on growing beliefs that support safer behaviors.

Our beliefs are a core aspect of our identity; they define and shape our relationships with others (Boden et al., 2016). Changing beliefs can lead to changes in behaviors. Achieving zero deaths and serious injuries on our roads will require changing behaviors.

4.1.2 How This Guidance Can Help You

Changing beliefs and behaviors is complex. Some strategies, including media campaigns, are ineffective; some have even been harmful (Hornik et al., 2008; Erceg-Hurn, 2008). This guidance is to help traffic safety practitioners be more effective implementing strategies that change beliefs and behaviors.

This document can also inform the development of new strategies. However, creating strategies that are effective is complex. Therefore, we encourage seeking additional guidance about creating effective strategies.

4.1.3 How should this guidance be used?

The guidance includes a one-page assessment with criteria that can be used to review a particular strategy (e.g., countermeasure, training, intervention, campaign) with the goal of revealing opportunities to improve effectiveness. Explanations of each criterion follow the assessment.

The assessment can be completed by an individual or by a group. A group could complete the assessment individually first and then discuss each criterion and develop a better understanding of the strategy and identify ways to improve it.

While it is unlikely that any single strategy will meet all the criteria, keeping all the criteria in mind may lead to more effective strategies and better outcomes. These criteria may also help with selecting or planning future strategies.

Because deploying effective strategies to improve traffic safety is complex and research is always revealing new understanding and opportunities, we also encourage you to review other resources about traffic safety culture at:
https://www.mdt.mt.gov/research/projects/trafficsafety.shtml.

In particular, there is a resource to bolster evaluating traffic safety culture strategies that guides practitioners through ideas about evaluative thinking as a way to improve strategies over time (see https://www.mdt.mt.gov/other/webdata/external/research/docs/research_proj/tsc/EVALUATION/GUIDANCE.pdf).

4.2 Assessment

Instructions

- Consider one specific strategy (e.g., countermeasure, training, intervention, campaign). If working with a group, make sure the strategy is clearly defined so everyone is thinking about the same strategy.
- Rate how well the strategy meets each criterion. See the pages following this assessment for more information. It is okay to say, "I do not know." Briefly add some notes about why you gave it the rating. If in a group, work independently first so each person can come up with their own opinion before sharing as a group.
- As appropriate, identify ways to improve the strategy based on the guidance.

Assessment Questions

1. How well does the strategy seek to change specific beliefs that are linked to specific behaviors?
2. How well does the strategy foster slow thinking?
3. How well does the strategy create cognitive dissonance (without shame)?
4. How well does the strategy grow perceived self-efficacy?
5. How is emotion used in the strategy?
6. How does the strategy use a narrative?
7. How vivid is the strategy?
8. How credible is the source?
9. To what degree might the strategy evoke psychological reactance?
10. To what degree does the strategy grow misperceptions of normative beliefs or behaviors?
11. To what degree does the strategy stigmatize certain people?

4.3 Supportive Guidance

4.3.1 How well does the strategy seek to change specific beliefs that are linked to specific behaviors?

4.3.1.1 Background

Research has revealed a relationship between beliefs and deliberate behaviors (Fishbein & Ajzen, 2010; Gerrard et al., 2008; Oreg & Katz-Gerro, 2006). Various behavioral models have identified different kinds of beliefs including:

- Values

    - Ideals to which we aspire that define the goals for our behavioral choices and direct the formation of our belief systems (e.g., "I must protect my family," "I desire a life without stress").

- Behavioral Beliefs
    - Expectations about the physical and social consequences of a behavior (e.g., "If I speed, I will likely get an expensive fine," "If I drink and drive, my friends will exclude me," "If I text and drive, I may hit a vehicle or pedestrian").

- Normative Beliefs
    - Beliefs about what behaviors are most common in a group (e.g., "All my friends speed") and what important people in that group expect (e.g., "My family expects me to wear a seat belt").

- Control Beliefs
    - Beliefs about an individual's ability to engage or not engage in the behavior based on factors that are either internal or external to oneself (e.g., "Crashes are determined by fate," "I am comfortable not speeding even if everyone around me is," "I am comfortable asking someone else to use a seat belt").

4.3.1.2 Why This Matters

Strategies seeking to change behavior are more effective (and sustained) when they change specific beliefs associated with the behavior. Understanding what beliefs to change and then making sure the strategy addresses these beliefs increases outcomes.

4.3.1.3 Suggestions / Examples

- High visibility enforcement seeks to reduce risky behaviors by increasing people's perceptions that they will get caught if they engage in the risky behavior. The perception of getting caught is a behavioral belief (i.e., a negative consequence from engaging in a behavior). It is critical to recognize that this is different than just trying to catch people who are engaging in the risky behavior. High visibility enforcement is about increasing the perception of getting caught among a large portion of the population – a much larger portion of the population than will actually be arrested or cited by the enforcement effort.

- Efforts to decrease distracted driving may seek to increase the perception that people who drive distracted are more likely to crash (a behavioral belief). Other beliefs that could be addressed include the perception of whether it is acceptable to drive distracted or that most people don't drive distracted (normative beliefs). Furthermore, strategies could seek to enhance people's sense of awareness to choose not to drive distracted – for example by clarifying that it is okay not to answer your cell phone while driving if a family member calls (control beliefs).

- For any strategy, ask the following questions:
    - What beliefs is this strategy trying to change?
    - How do we know that changing these beliefs will result in changes in behaviors?
    - How effective is this strategy at changing these beliefs?

4.3.2 How well does the strategy foster slow thinking?

4.3.2.1 Background

Humans process information from the environment using two distinct modes of thinking– sometimes referred to as "fast" and "slow" thinking (Grayot, 2020). These two modes differ in the amount of mental effort used and level of scrutiny applied to the processed information (Kahneman, 2011).

Fast thinking is characterized as "reactive, automatic, intuitive, heuristic, associative, and preconscious" (Grayot, 2020, p. 112). Fast thinking is fast because it uses little or no mental effort to quickly (in milliseconds) provide just an impression of the information. In some cases, this impression is based on the emotional content of the information or familiarity based on past experiences.

In contrast, slow thinking is characterized as "controlled, reflective, serial, rule-based, and conscious" (Grayot, 2020, p. 112). Slow thinking is slow because processing requires greater mental effort to provide a more detailed analysis of the information, which requires significantly more time than fast thinking.

Humans try to avoid mental effort. If possible, we rely on fast thinking, which may provide sufficiently accurate beliefs that are also emotionally satisfying (Grayot, 2020; Kahneman, 2011).

However, because of the low effort and superficial analysis of fast thinking, we can be misled or make mistakes (Boden et al., 2016; Cooper, 2019). Furthermore, fast thinking is occurring all the time and often without our awareness.

When fast thinking leads to unexpected or adverse outcomes, our awareness may shift us to slow thinking to review and revise our beliefs so that they more accurately represent reality (Grayot, 2020; Harmon-Jones et al., 2015).

People have to be motivated and have the ability to process information in order to shift into slow thinking and change their beliefs. Without motivation, people will not expend the effort to reflect on their beliefs. The ability to engage in slow thinking requires not being distracted by other thoughts, having enough existing knowledge to make meaning of the new information, and being able to comprehend whatever is seeking to cause the change (Petty & Cacioppo, 1986).

4.3.2.2 Why This Matters

Many strategies are designed to change people's beliefs as a way to change their behaviors. For example, a media campaign may seek to convince people that not using a seat belt increases the likelihood of being ejected from a vehicle in a crash and seriously injured or killed.

Changing existing beliefs requires slow thinking. In other words, people need to pause and reflect in order to change their existing beliefs.

Strategies that do not shift people into slow thinking may be less effective at changing beliefs.

4.3.2.3 Suggestions / Examples

- Strategies that foster conversations are more likely to shift people into slow thinking. These may be conversations that people have with others, but they also could be conversations that people have with themselves (i.e., reflecting internally). Conversations

could be triggered by questions or could be facilitated by the strategy itself. For example, strategies like workplace trainings can include opportunities for people to talk with others about a question focusing on important beliefs or to take a moment and reflect on their own beliefs and behaviors.

- Slow thinking takes time. Creating time for people to reflect is important.
- Changing beliefs may not happen quickly. Therefore, repetition over time is important.
- Strategies need to motivate people to engage in slow thinking. Motivation could include underlying values like wanting to be safe or caring about friends or family.
- Strategies that trigger psychological reactance may inhibit slow thinking about beliefs about the desired behavior, are less likely to result in belief change, and may make existing beliefs less likely to change and existing risky behaviors worse. See "Does the strategy evoke psychological reactance?" for more information (page 17).

4.3.3 How well does the strategy create cognitive dissonance (without shame)?

4.3.3.1 Background

Often what leads to changes in beliefs is cognitive dissonance. Cognitive dissonance is a state of emotional discomfort resulting from our awareness that we have a belief that is inconsistent with other beliefs important to us or our behaviors (Cooper, 2019; Harmon-Jones et al., 2015).

Our awareness of this inconsistency may come as a result of an adverse outcome of a (freely chosen) behavior that was based on the belief. For example, a driver who values safety and believes they can drive safely while texting is involved in a crash while texting. They are upset because their belief that they can drive safely while texting is inconsistent with the experience of being in a crash. In such cases, we are motivated to change one or more beliefs to remove the perceived contradiction.

Inconsistency among beliefs may reduce our sense of being in control, which will result in cognitive dissonance. This dissonance motivates us to adjust our beliefs to become more internally consistent, especially in relation to our sense of being in control. We can do this by changing the inconsistent belief (in the previous example, the driver now believes texting while driving may be dangerous) or by adopting a belief that explains away the apparent contradiction (in the previous example, the driver believes the crash was just "bad luck").

For example, consider a person who has decided that it is dangerous to drive under the influence of alcohol. Now imagine this person is in a situation where they believe they have to make a short drive home after drinking at a restaurant. In this case, the belief that it is dangerous to drive under the influence of alcohol is inconsistent with the behavior of driving after drinking. After the fact, the behavior cannot be changed.

To reduce the apparent inconsistency, the person might change contradicting beliefs ("A small amount of alcohol is not enough to impair me") or might adopt new beliefs to reduce the contradiction ("There is very little danger from driving such a short distance on a route I know very well"). A safer response might be to reconnect with values about safety, avoid shameful thinking, and instead recommit to engaging in safer behaviors in the future (like planning alternative ways to get home that do not require driving or choosing not to drink when driving).

4.3.3.2 Why This Matters

Using a strategy to create cognitive dissonance may be an effective way to shift a person into slow thinking and facilitate changes in their beliefs.

However, raising cognitive dissonance has to be done carefully. Highlighting how certain behaviors contradict core values could elicit shame and trigger defensiveness or denial, which reduce the chances of belief change.

4.3.3.3 Suggestions / Examples

- Getting people to think about what matters to them (i.e., their values) while considering a risky behavior may generate cognitive dissonance. For example, getting people to think about their children and what it would be like for their family if they (themselves) were injured or killed may trigger cognitive dissonance as they reflect on not using a seat belt.
- Using questions can foster cognitive dissonance. For example, workplaces often consider safety as an important value. Asking a question like "How does this action, for which there are safety concerns, align with our organization's value of safety?" may foster important conversations and subsequent changes.

4.3.4 How well does the strategy grow perceived self-efficacy and an internal locus of control?

4.3.4.1 Background

Perceived self-efficacy includes people's beliefs about their skills, abilities, and capabilities to perform in specific situations. Research on self-efficacy suggests that what we think we can do (as opposed to what we are actually capable of) has important implications and influence on a wide range of behaviors (Bandura, 1982; Bauman et al., 2012; Gwaltney et al., 2009; Miao et al., 2017; Taubman – Ben-Ari, 2016). For example, if a person is confident that they can ask someone else to use a seat belt, they are more likely to intervene than if they lack confidence.

Information that strengthens an individual's perception of self-efficacy can influence behavior change (Bandura, 1982). For example, strategies that show people how to do a behavior by seeing others model the behavior can increase beliefs of efficacy (Bandura, 1982). Similarly, strategies that are encouraging (i.e., "You can do it," "I believe you are capable," etc.) can bolster beliefs of efficacy to engage in a behavior (Bandura, 1982, 1993).

Locus of control refers to people's beliefs about how much control they have over the outcomes they experience. Perceptions that one's own behavior and personal attributes drive outcomes are referred to as an internal locus of control. Perceptions that external conditions outside of oneself drive outcomes are referred to as an external locus of control (Galvin et al., 2018). People with an external locus of control often attribute outcomes to luck or powerful others (Jang & Baek, 2018).

Locus of control should be considered when strategies seek to influence beliefs related to behavior (Kong & Shen, 2011). Strategies that provide specific skills and knowledge may enhance an internal locus of control (Jang & Baek, 2018) and increase an individual's sense of responsibility. Likewise, strategies that emphasize individual autonomy and individual responsibility ("It's up to you") may result in more favorable attitudes toward the strategy among

those with an internal locus of control (Jang & Baek, 2018; Kong & Shen, 2011; Williams-Piehota et al., 2007).

Traffic safety strategies that emphasize personal autonomy and grow skills about how to engage in a specific traffic safety behavior may be more suited to those with an internal locus of control. Strategies that offer advice, make recommendations, or encourage a specific behavior from well-known messengers may influence those with a more external locus of control (Jang & Baek, 2018; Williams-Piehota et al., 2007).

Strategies that invoke a sense of social-responsibility (like engaging in a behavior for the sake of others) may produce more favorable attitudes among individuals with an external locus of control (Kong & Shen, 2011).

4.3.4.2 Why This Matters

Growing perceived self-efficacy and an internal locus of control increases the likelihood that individuals will engage in behaviors to improve traffic safety.

We need to grow many different behaviors to achieve zero deaths and serious injuries on our roads. Examples include planning to avoid driving after drinking, establishing family rules about safe driving, establishing workplace policies and conducting training on those policies, and many more. Growing these kinds of behaviors may benefit from growing perceived self-efficacy and an internal locus of control.

4.3.4.3 Suggestions / Examples

- Strategies can take steps to grow perceived self-efficacy and an internal locus of control. Even messages in media campaigns can influence perceived self-efficacy by showing examples and modeling desired behaviors.
- Using language that seeks to empower people like “We can do this” or “It’s up to you” can help bolster perceived self-efficacy and an internal locus of control.
- Consider whether the strategy includes guidance on how to do something (not just why or what to do).
- While sometimes awkward, practicing makes a big difference in whether people actually engage in a behavior. Strategies that create time for people to practice a new behavior (even in simulated environment like a training room) will increase people’s perceived self-efficacy (and the likelihood that they will engage in the behavior in the future).
- People learn from seeing other people engage in certain behaviors. Consider ways to encourage modeling even after a specific strategy. For example, having supervisors model desired behaviors like intervening to ask others to use a seat belt or not drive distracted will increase the chances that other employees will engage in the same behaviors.

4.3.5 How is emotion used in the strategy?

4.3.5.1 Background

Emotions vary by pleasantness or unpleasantness. For example, happiness is a pleasant and desirable emotion; fear is unpleasant and undesirable.

The emotional state of the person receiving information can influence how that information is processed (Petty & Briñol, 2015). Sometimes, people will associate an emotion with the information. The emotion can then influence how the information is perceived and if it is accepted. For example, a person who is currently fearful may automatically feel disagreeable toward the information and reject it.

4.3.5.2 Why This Matters

Understanding the role of emotions in belief change is important. Some strategies used to change beliefs evoke fear by portraying the negative consequences of the behavior. This may negatively impact the effectiveness of the strategy.

Fear-based messages can have several undesired effects including denial of the issue communicated by the message (Simpson, 2017). Traffic safety researchers have stated that "while fear arousal appears important for attracting attention, its contribution to behavior change appears less critical than other factors, such as perceptions of vulnerability and effective coping strategies" (Lewis et al., 2007a, p. 203). Thus, it is important to explore the use of emotions like hope and joy in messaging strategies to change beliefs (Lewis et al., 2007b).

Strategies can evoke more than one emotion. For example, strategies could evoke a sense of concern and a sense of confidence (or perceived self-efficacy) to take steps to alleviate the sense of concern.

4.3.5.3 Suggestions / Examples

- Ask a variety of people what emotions a strategy evokes; be aware that emotions may vary with different people.
- If the strategy does not evoke any emotions, consider what could be done to evoke emotion. Strategies that do not evoke any emotions may not engage people.
- Strategies can evoke emotions by raising concern and connecting that concern to people's values. For example, most people value their safety and the safety of others. Connecting with these values and then discussing certain behaviors that challenge these values can evoke emotions of concern.
- Be careful about going too far. Some people will push back against strong emotional appeals as they may feel they are being manipulated.
- Evoking overwhelming sadness can be too traumatic for some people and can cause harm.

4.3.6 How does the strategy use a narrative?

4.3.6.1 Background

A narrative is a form of story that immerses us in an experience and gives context to information that may include facts or arguments to support belief change (Shen et al., 2015).

Examples of narratives include personal stories, anecdotes, testimonials, and contextual accounts of events. Narratives are a typical form of communication among people in groups and may therefore feel natural to both the teller and the listener.

4.3.6.2 Why This Matters

Using narratives in public health strategies to change beliefs and behaviors has a "small but significant effect" (Shen et al., 2015, p. 108). The effectiveness of narratives is greater when delivered by audio or video than by text, as aural and visual communication are more likely to elicit emotions connected to the narrative.

Narratives may be more effective for increasing protective behaviors than reducing harmful behaviors.

4.3.6.3 Suggestions / Examples

- Not all strategies can use narratives, but many can. Consider ways to include a story or something personal that makes the information more relevant and about the people participating in the strategy.
- For example, workplace training can be introduced by a leader who tells a personal story about why safety is important or how they have engaged in certain behaviors to improve safety.
- Media messages can use local voices telling personal stories that particularly resonate with a community.
- Strategies can encourage participants to share stories. For example, parents can talk to their children about their own experiences involving traffic safety and why they have decided to take protective steps like using a seat belt.
- Be cautious about using stories of individuals who engaged in a risky behavior and wished they had made different choices. These stories can inadvertently normalize engaging in risky behaviors.

4.3.7 How vivid is the strategy?

4.3.7.1 Background

Vividness has been defined as a quality of communicated information that attracts attention, evokes emotions, and provokes imagination.

Vividness increases the recall of memories that can help make meaning of a message but only when the form of vividness creates positive emotions that elicit positive thoughts. For example, a narrative based on a "concrete" testimonial is more vivid than an "abstract" story (Blondé & Girandola, 2016).

4.3.7.2 Why This Matters

Strategies to change beliefs need to attract attention and provoke thinking (i.e., shift to slow thinking). Increasing the vividness of strategies can increase effectiveness in changing beliefs (Blondé & Girandola, 2016).

4.3.7.3 Suggestions / Examples

- Consider ways to make strategies more vivid.
    - Connect to important values like safety or caring for others
    - Use beautiful images or powerful voices in media
    - Use stories to create an image in people's minds
    - Create situations where people can really focus by removing other distractions (this might be asking people to put away their phones during a training)
- Avoid going too far and using too much emotion or trying too hard to attract attention as this may have the opposite effect and turn people away.
- Avoid sacrificing clarity or focus on critical beliefs for beauty. For example, an advertisement that is beautiful but people have no idea what it is about is not effective.

4.3.8 How credible is the source?

4.3.8.1 Background

Credibility of the source of the strategy is influenced by the trustworthiness of the source, the perceived expertise (in the topic area) of the source, and whether the source is viewed as similar to the audience (i.e., shares attitudes, values, preferences, and demographic characteristics) (Ismagilova et al., 2020; Metzger et al., 2003).

Factors associated with the source of the information and the information itself influence credibility (Metzger et al., 2003). Sources considered highly credible are likely to be more persuasive than sources that are perceived to be of low credibility (Pornpitakpan, 2004).

Credibility is also influenced by factors associated with the information itself. The structure, content, and delivery of the information influence perceptions of credibility (Metzger et al., 2003). For example, how information is conveyed, organized, and whether it flows logically affect perceptions of credibility (Metzger et al., 2003).

Further, the content of the information, how interesting it is to the audience, and its perceived validity influence credibility (Metzger et al., 2003). Using opinionated language decreases credibility compared to information that uses less intense language (Metzger et al., 2003).

Information that is familiar, closely aligned, or that supports the views of the audience is more credible than information that has discrepancies (Metzger et al., 2003).

Finally, the way in which information is delivered, including how hesitant or assertive the communication style, influences perceptions of credibility (Metzger et al., 2003).

4.3.8.2 Why This Matters

Perceptions about credibility have important implications for changing beliefs and influencing behavior (Ismagilova et al., 2020). Strategies with low credibility are less effective than strategies with high credibility.

4.3.8.3 Suggestions / Examples

- Perceived credibility of sources may vary with different audiences. You may need to test which sources are considered most credible among the audiences you are trying to reach.
- Sometimes, those leading health and safety efforts spend time establishing their credibility first before trying to change people's beliefs or behaviors.
- Communicating about shared values and the "why" behind the strategy can help bolster credibility. If people perceive that someone is trying to get them to change their beliefs or behaviors just to exert power or control or for other reasons not associated with health and safety, they may not trust the source and reject the effort. For example, explicitly talking about the value of safety and why safety is important at the beginning can connect with shared values and bolster a sense of trust.
- Sometimes, using local people or people in certain roles can increase perceived credibility. For example, many people trust their local healthcare provider for health-related information more than they would trust an advertisement or something they hear in the news.

4.3.9 To what degree might the strategy evoke psychological reactance?

4.3.9.1 Background

When people perceive that being persuaded to do something (e.g., through a message) threatens their freedom, they may experience psychological reactance. 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, p. 205). Psychological reactance often shows up as anger or counterarguing (Rains, 2013).

The use of strong, directive, or controlling language like "you must" or "you should" can increase psychological reactance (Miller et al., 2007; Shen, 2015).

4.3.9.2 Why This Matters

When strategies elicit psychological reactance, they may motivate the person to do the opposite of what the strategy intended (Brehm & Brehm, 1981). For example, a strong statement like "You must always use a seat belt" may cause some people to refuse to use one.

Further, language framed as a loss can elicit stronger psychological reactance than messages using a gain frame (Shen, 2015). For example, "You must always use a seat belt, or you will lose the right to drive" may elicit even more reactance.

4.3.9.3 Suggestions / Examples

- Some people are more prone to psychological reactance than others. Language that you feel is not threatening may be received very differently by others. Therefore, it is important to ask people about their reactions to a strategy.

- Using questions rather than statements can quiet psychological reactance. For example, instead of saying, "You must always use a seat belt," one could ask "Who in your life would want you to use a seat belt?"
- Certain sources may evoke more psychological reactance than others. For example, using law enforcement officers to promote traffic safety may evoke more psychological reactance than using healthcare providers.
- Learn more about navigating psychological reactance by taking training on Motivational Interviewing. Motivational Interviewing is a technique whereby you seek to identify what motivates someone else to change (instead of assuming what motivates them). It is specifically designed to reduce psychological reactance.
- See "Guidance on Messaging to Avoid Reactance and Address Moral Disengagement" for more about messaging to minimize psychological reactance in relation to seat belt use and aggressive driving at: https://www.mdt.mt.gov/research/projects/trafficsafety-reactance.shtml

4.3.10 To what degree does the strategy grow misperceptions of normative beliefs or behaviors?

4.3.10.1 Background

Extensive studies have explored the relationship between normative beliefs and behavior. Normative beliefs include perceptions about what behaviors are most common in a group (e.g., "All my friends speed") and what important people in that group expect (e.g., "My family expects me to wear a seat belt").

People typically want to behave in ways that are considered normal and acceptable (Rhodes et al., 2020). However, people often misperceive the norms of their peers, and these misperceptions can lead people to align their behaviors with the misperceived norms (Amialchuk et al., 2019). For example, if a person thinks most people speed, they may be more likely to speed themselves. Or, if a person believes their supervisor thinks it is okay to use a cell phone while driving, they may be more likely to use a cell phone while driving.

4.3.10.2 Why This Matters

Strategies to prevent risky behaviors (like speeding or using a cell phone while driving) can inadvertently increase the perception that such behaviors are common. Increasing the perception that risky behaviors are common (or acceptable) can increase their prevalence.

4.3.10.3 Suggestions / Examples

- Check strategies to see if they may inadvertently create the perception that a risky behavior is more common than it is.
- Add language to strategies that clarifies existing positive, healthy norms while still raising concern. For example, instead of saying, "We have a culture in our community that people do not care about traffic safety and don't use seat belts," say, "While the majority of people in our community use seat belts, we still have too many people who are not."

- Stating existing positive, healthy norms can bolster the sense of perceived self-efficacy and give people hope that the issue can be addressed. For example, "Many workplaces in our community are establishing policies that do not allow use of cell phones while driving for work. If you would like information about how your workplace can join the effort, please contact…"
- During a heightened enforcement effort, law enforcement leaders can say, "While most drivers in our community never drive after drinking, we still experience too many alcohol-related crashes. We are taking extra steps this weekend to stop drinking and driving."

4.3.11 To what degree does the strategy stigmatize certain people?

4.3.11.1 Background

Stigma is defined as "a strong feeling of disapproval that most people in a society have about something" (Cambridge University Press, 2021). Stigma includes a collection of attitudes, beliefs, behaviors, and structures that interact at different levels of society, at the individual level, in groups, in organizations, and various public systems (National Academies of Sciences, Engineering, and Medicine, 2016). Stigma is associated with a variety of negative social and health outcomes (National Academies of Sciences, Engineering, and Medicine, 2016; Livingston & Body, 2010; Pattyn et al., 2014).

For example, it is widely known that alcohol-impaired driving is unacceptable. There is strong societal disapproval (stigma) associated with engaging in this risky driving behavior and as a result, a person who is arrested for alcohol-impaired driving may feel stigmatized.

Research suggests that there is a connection between impaired driving and having a substance use disorder (Roberts et al., 2019). Getting adequate treatment for a substance use disorder can lead to reductions in impaired driving behavior (Cheng et al., 2021). However, because of stigma, people may be reluctant to ask for help or get the help they need (Pattyn et al., 2014).

4.3.11.2 Why This Matters

Understanding what stigma is and how it shows up is important in efforts to change beliefs. Stigma can ultimately make behavior change less likely to occur. Some strategies may highlight the strong disapproval of risky driving behaviors by portraying a person who has engaged in such behaviors as bad, immoral, or unworthy.

However, the unintended consequences of such strategies may elicit shame and guilt, reduce self-efficacy, and reduce hope that behavior change can occur. Stigma can inhibit the change that is needed to improve traffic safety.

4.3.11.3 Suggestions / Examples

- The language we use to describe people and their behaviors is important and can reduce stigma or inadvertently increase stigma (SAMHSA, 2017). Consider focusing on behaviors instead of people.
- The national advocacy group MADD changed their name several years ago from "Mothers Against Drunk Drivers" to "Mothers Against Drunk Driving." Their intention was to focus on the behavior.

- Consider questions such as
    - "How might stigma inadvertently be promoted in this strategy?"
    - "How could the language be more inclusive and less stigmatizing?" (Finley et al., 2019, p. 324).

5. CONCLUSIONS

In this report (Task 2), we identified 11 recommendations for improving the effectiveness of traffic safety culture strategies that seek to change people's behaviors by changing their beliefs. The recommendations were shifted to the following questions that stakeholders could apply to a specific traffic safety culture strategy:

1. How well does the strategy seek to change specific beliefs that are linked to specific behaviors?
2. How well does the strategy foster slow thinking (see page 10)?
3. How well does the strategy create cognitive dissonance (without shame) (see page 11)?
4. How well does the strategy grow perceived self-efficacy?
5. How is emotion used in the strategy?
6. How does the strategy use a narrative?
7. How vivid is the strategy?
8. How credible is the source?
9. To what degree might the strategy evoke psychological reactance (see page 17)?
10. To what degree does the strategy grow misperceptions of normative beliefs (see page 9) or behaviors?
11. To what degree does the strategy stigmatize certain people?

Information about each of the recommendations was developed. The information includes background, why the guidance matters, and examples/suggestions. An example of formatting for the final guidance document also was developed.

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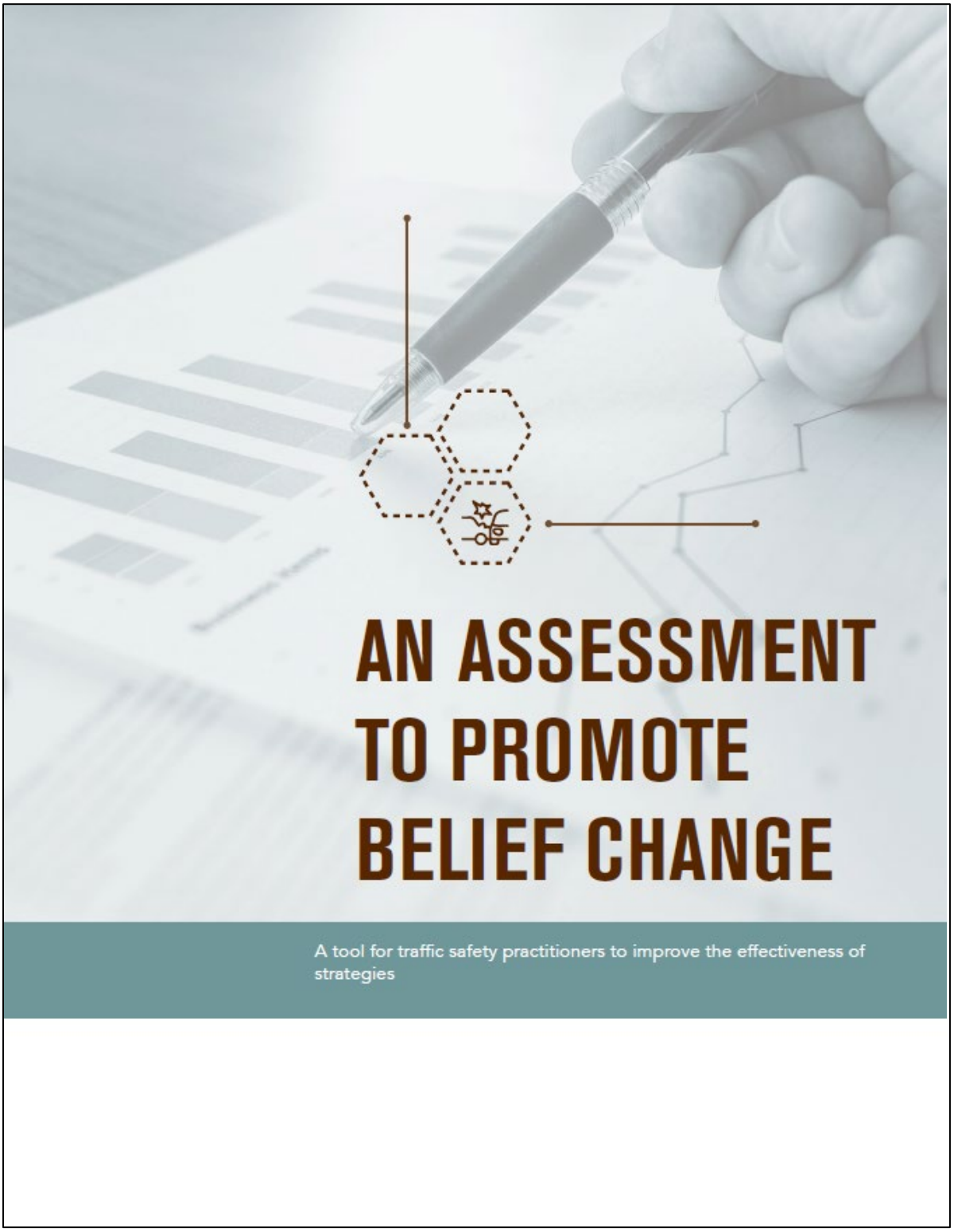
7. APPENDICES

7.1 Appendix A – Draft Guidance



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INTRODUCTION

WHAT IS THIS GUIDANCE?

This document provides guidance for traffic safety practitioners on ways to improve the effectiveness of strategies seeking to change people's beliefs and behaviors. Strategies may include countermeasures, training programs, media campaigns, and other activities that seek to change people's traffic safety-related behaviors.

This guidance specifically focuses on strategies that seek to address intentional behaviors (like distracted driving, not using a seat belt, driving after drinking, establishing family traffic-safety rules, etc.). These strategies often focus on growing beliefs that support safer behaviors.

Our beliefs are a core aspect of our identity; they define and shape our relationships with others (Boden et al., 2016). Changing beliefs can lead to changes in behaviors. Achieving zero deaths and serious injuries on our roads will require changing behaviors.

1

HOW THIS GUIDANCE CAN HELP YOU

Changing beliefs and behaviors is complex. Many strategies, including media campaigns, are ineffective (and some have even been harmful). This guidance is to help traffic safety practitioners be more effective implementing strategies that change beliefs and behaviors.

This document can also inform the development of new strategies. However, creating strategies that are effective is complex. Therefore, we encourage seeking additional guidance about creating effective strategies.

HOW SHOULD THIS GUIDANCE BE USED?

The guidance includes a one-page assessment with criteria that can be used to review a particular strategy (e.g., countermeasure, training, intervention, campaign, etc.) with the goal of revealing opportunities to improve effectiveness. Explanations of each criterion follow the assessment.

The assessment can be completed by an individual or by a group. A group could complete the assessment individually first and then discuss each criterion and develop a better understanding of the strategy and identify ways to improve it.

It is unlikely that any single strategy will meet all the criteria. That is OK. Nonetheless, keeping all the criteria in mind may lead to more effective strategies and better outcomes. These criteria may also help with selecting or planning future strategies.

Because deploying effective strategies to improve traffic safety is complex and research is always revealing new understanding and opportunities, we also encourage you to review other resources about traffic safety culture at: https://www.mdt.mt.gov/research/projects/trafficsafety.shtml

In particular, there is a resource to bolster evaluating traffic safety culture strategies that guides practitioners through ideas about evaluative thinking as a way to improve strategies over time (see https://www.mdt.mt.gov/other/webdata/external/research/docs/research_proj/tsc/EVALUATION/GUIDANCE.pdf).

2

ASSESSMENT STRATEGY:

INSTRUCTIONS

- Consider one specific strategy (e.g., countermeasure, training, intervention, campaign, etc.). If working with a group, make sure the strategy is clearly defined so everyone is thinking about the same strategy.
- Rate how well the strategy meets each criterion. See the pages following this assessment for more information. It is OK to say, "I do not know." Briefly add some notes about why you gave it the rating. If in a group, work independently first so each person can come up with their own opinion before sharing as a group.
- As appropriate, identify ways to improve the strategy based on the guidance.

3

CRITERIA	RATING (low, medium, high)
1. How well does the strategy seek to change specific beliefs that are linked to specific behaviors? Why did you rate it this way?	
2. How well does the strategy foster slow thinking? Why did you rate it this way?	
3. How well does the strategy create cognitive dissonance (without shame)? Why did you rate it this way?	
4. How well does the strategy grow perceived self-efficacy? Why did you rate it this way?	
5. How is emotion used in the strategy? Why did you rate it this way?	
6. How does the strategy use a narrative? Why did you rate it this way?	
7. How vivid is the strategy? Why did you rate it this way?	
8. How credible is the source? Why did you rate it this way?	
9. To what degree might the strategy evoke psychological reactance? Why did you rate it this way?	
10. To what degree does the strategy grow misperceptions of normative beliefs or behaviors? Why did you rate it this way?	
11. To what degree does the strategy stigmatize certain people? Why did you rate it this way?	

IDEAS FOR IMPROVEMENTS

4

SUPPORTIVE GUIDANCE

HOW WELL DOES THE STRATEGY SEEK TO CHANGE SPECIFIC BELIEFS THAT ARE LINKED TO SPECIFIC BEHAVIORS?

BACKGROUND

Research has revealed a relationship between beliefs and deliberate behaviors (Fishbein & Ajzen, 2010; Gerrard et al., 2008; Oreg & Katz-Gerro, 2006). Various behavioral models have identified different kinds of beliefs including:

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- Values
  - Ideals to which we aspire that define the goals for our behavioral choices and direct the formation of our belief systems (e.g., "I must protect my family," "I desire a life without stress").
- Behavioral Beliefs
  - Expectations about the physical and social consequences of a behavior (e.g., "If I speed, I will likely get an expensive fine," "If I drink and drive, my friends will exclude me," "If I text and drive, I may hit a vehicle or pedestrian").
- Normative Beliefs
  - Beliefs about what behaviors are most common in a group (e.g., "All my friends speed") and what important people in that group expect (e.g., "My family expects me to wear a seat belt").
- Control Beliefs
  - Beliefs about an individual's ability to engage or not engage in the behavior based on factors that are either internal or external to oneself (e.g., "Crashes are determined by fate," "I am comfortable not speeding even if everyone around me is," "I am comfortable asking someone else to use a seat belt").

WHY THIS MATTERS

Strategies seeking to change behavior are more effective (and sustained) when they change specific beliefs associated with the behavior. Understanding what beliefs to change and then making sure the strategy addresses these beliefs increases outcomes.

6

SUGGESTIONS / EXAMPLES

- High visibility enforcement seeks to reduce risky behaviors by increasing people's perceptions that they will get caught if they engage in the risky behavior. The perception of getting caught is a behavioral belief (i.e., a negative consequence from engaging in a behavior). It is critical to recognize that this is different than just trying to catch people who are engaging in the risky behavior. High visibility enforcement is about increasing the perception of getting caught among a large portion of the population – a much larger portion of the population than will actually be arrested or cited by the enforcement effort.
- Efforts to decrease distracted driving may seek to increase the perception that people who drive distracted are more likely to crash (a behavioral belief). Other beliefs that could be addressed include the perception of whether it is acceptable to drive distracted or that most people don't drive distracted (normative beliefs). Furthermore, strategies could seek to grow people's sense of being able to choose to not be distracted – for example by clarifying that it is OK not to answer your cell phone while driving if a family member calls (control beliefs).
- For any strategy, ask the following questions:
  - What beliefs is this strategy trying to change?
  - How do we know that changing these beliefs will result in changes in behaviors?
    - How effective is this strategy at changing these beliefs?

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