An evidence-based approach to driver safety communications: Best practices and literature review

Prepared for Ohio Department of Transportation Distracted Driving Task Force

Brittany Shoots-Reinhard, PhD, Ellen Peters, PhD, and Hayley Svensson, BA

The Ohio State University
Department of Psychology
1827 Neil Ave
Columbus, OH 43210
614-440-6258
shoots-reinhard.1@osu.edu
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Introduction

When you’re driving down the highway or cruising through a school zone, do you ever think “Hey, I think I’ll close my eyes for a bit”? Of course, you don’t. And yet that is essentially what happens with distracted driving, a now-prevalent activity that has killed or injured thousands of people. Many potential tools exist to change behaviors including distracted driving (see e.g., Goodwin et al., 2015), and evidence-based public communication is one possible tool. Behavior change via communication, however, is indirect—communications cannot change behavior directly. Instead, they must change how people feel or think about the risky behavior or a new recommended behavior, and change what they perceive as normal or acceptable (e.g., Bandura, 1977; Fishbein & Ajzen, 2010; Floyd, Prentice-Dunn & Rogers, 2000; Schwarzer, 2008; Witte, 1992). Additionally, communication must consider the likelihood that at least some of the audience will be actively resist the message. As a result, communicators need to plan to overcome that resistance (Brehm, 1966; Rains, 2013; Steindl et al., 2015; Witte, 1992).

Public road safety campaigns appear to incorporate some but not all of the strategies reviewed here (e.g., Guttman, 2015; Niderdeppe et al., 2018). Existing messages also can be improved with more systematic, theoretical approaches. For example, anti-speeding messages that were redesigned recently to increase speeding severity (e.g., “kill your speed, not yourself”) and the perceived likelihood of negative outcomes from speeding (e.g., “No one is safe speeding – no one is safe from a speed camera”) improved intentions to drive the speed limit relative to messages that were currently or previously used in PSAs (Glendon & Walker, 2013).

When deciding what to include in this review, we used prior research combined with our recent surveys on distracted driving. In particular, we recently conducted two studies of distracted driving using internet panels, one using a sample of drivers across the US (N=648), and one using a sample of Ohio drivers only (N=702). Across both studies, we found that people who reported more (vs. less) driving distracted also believed it was more beneficial to use their phones while driving, were more resistant to messaging (Section 8), and gave higher estimates for the prevalence of other people’s level of distracted driving (Section 6). We also found that higher support for various methods to reduce distracted driving was predicted by lower resistance to messaging, higher risk perceptions, and higher emotional attachment to their cellphone. Because resistance to messaging emerged as an important predictor across samples and outcomes, we will highlight across sections strategies that can reduce resistance. In addition, we consider perceived benefits when discussing recommendations (Section 1).

Changing how people feel or think about current behavior—make it seem dangerous and risky

First, severity and likelihood are strong predictors of health behavior (Glendon & Walker, 2013; Sheeran et al., 2014; Witte & Allen, 2000). Drivers avoid behaviors that they feel bad about and that they perceive as having severe and likely consequences (e.g., Harbeck, Glendon, et al., 2018) or judge to be “risky” (e.g., Rhodes & Pivik, 2011; Shevlin et al, 2019; Weller et al., 2013). Drivers can be convinced that their current behavior is risky by providing them with evidence about the riskiness of their behavior and how to reduce it (Section 2), making sure that they see that evidence as relevant to them (Section 3), giving them numeric information about the likelihood and frequency of negative outcomes (Section 4), illustrating the negative outcomes by using stories and images including those that drive emotional responses (Section 5), and using a persuasive source (Section 7).

Changing how people feel or think about recommendation—make it seem effective and easy

Although it may seem like all we need to do is change opinions about the current behavior, a lot of people behave in ways they know are risky. Thus, making people more knowledgeable or fearful about distracted driving may not change behavior if they also don’t know what to do to avoid the risk and think that they can avoid it (Witte, 1992). Research (reviewed in Section 1) demonstrates that people’s ideas about whether a behavior is effective, easy, and low cost predict their behaviors better than do their
perceptions of its dangerousness and riskiness (e.g., Carpenter, 2010; Floyd et al., 2000; Schwarzer et al., 2007). People’s ideas about how useful a recommendation is also can counter message rejection (Lewis et al., 2010, 2013), whereas ideas about the likelihood and severity of consequences for not following the recommendation sometimes increase message rejection when the message is perceived as not useful (Lewis et al., 2013). Because we found so many examples of distracted driving messaging that focus on increasing fear but without an effective call to action, we started our guide with the best practice of using an effective and easy recommendation (Section 1) and providing strong evidence for why it should work (Section 2 and Section 3). We further suggest focusing on the benefits of following recommendations rather than the costs of not following recommendations; we explain why in Section 3.1.

Changing what people think is normal or acceptable

People try to behave in ways that they and others find normal or acceptable (e.g., Cialdini et al., 1990). People are less likely to drive dangerously when they think that other people would disapprove, when other people drive safely, and when they personally believe driving dangerously is wrong (e.g., Cestac et al., 2014; Shevlin et al., 2019; Weller et al., 2013). Section 6 describes how to best change what people find normal and acceptable as well as how to avoid unintentionally communicating to people that distracted driving is normal.

Overcoming resistance to messaging

When people encounter messages, they can either take action to change their behavior, or they can resist and reject the message. When the message contradicts their beliefs, they are particularly likely to avoid the message (e.g., Lewis et al., 2010), experience anger, and argue against the message (Rains, 2013; Steindl et al., 2015; Witte, 2002). If they successfully counterargue, not only will they not follow the recommendations, future attempts to persuade them will be less successful (Tormala & Petty, 2002). Because of the negative consequences of resistance, and the fact that people who drive distracted more are also the most resistant (Shoots-Reinhard et al., in preparation), we suggest ways of reducing resistance in Section 8 as well as throughout this guide.

Organization of the guide

In the next two pages, you will find a list of our recommendations without detailed explanations. Justification and explanation for each recommendation are then detailed later in the document, including information about current research on distracted driving, and specific examples of how the recommendations could be incorporated into anti-distracted driving messaging.
Top Nine Best Practices for Public Risk Communication

1. Advocate for a behavior that people believe: 1) they can actually do and 2) it will work
   1. Choose feasible and effective recommendations (e.g., turning off notifications vs. buying an app)
   2. Choose recommendations that have few barriers or costs (e.g., don’t suggest people put phones in trunks, because that would cost them the ability to make emergency calls or use GPS)
   3. Explain how strategies are easy and effective (e.g., explain that turning off notifications will improve focusing on the road [effective], and it can be done in their phone settings [easy])
   4. Give people if-then plans that specify a situation or cue (i.e., the “if”) and an action to be performed in that situation (i.e., the “then”). For example, “when you start your car, disable notifications” uses the car starting as the cue to turn off notifications.
   5. Don’t tell people to “just wait” or “just drive,” because this recommendation can increase distraction because it requires people to actively resist temptation instead of avoiding it in the first place
   6. Choose one-time behaviors (e.g., enable the do-not-disturb-while-driving setting) or behaviors that can become habits (“when you get in your car, turn off notifications”) over strategies that require ongoing maintenance (“ignore notifications”)

2. Explain why people should change their behavior and that your advice is best
   1. Use statistics and academic research to demonstrate that distracted driving causes crashes and people who aren’t distracted crash less
   2. Don’t use personal opinions or no explanation at all (e.g., “People who drive distracted are dumb”)
   3. People who think a lot and are convinced by your advice will be more likely to act on it than people who are convinced but didn’t think much
   4. Only present people with the most important and relevant information
   5. Only tell people about the most effective strategies to avoid overwhelming them

3. Tailor your message to the topic and target audience
   1. Address the audience directly (e.g., use “you” vs. “one”)
   2. Tell people how or why your message is relevant to them (i.e., what is its impact on them)
   3. Focusing on the benefits of not driving distracted (e.g., being a safe driver, making parents proud, setting a good example for children) may work better than focusing on the costs of driving distracted (e.g., crashes, tickets), particularly for adolescents

4. Show people the data and statistics, and make sure people understand them
   1. Communicate risks using numeric probabilities (60%), not only verbal labels (e.g., likely)
   2. Use whole numbers (e.g., 29%), not decimals (e.g., 28.55%)
   3. Do the math for the audience by presenting them with risks aggregated over time (e.g., “31% of drivers who talk on the phone while driving will crash in the next 5 years”)
   4. Don’t present relative risks (e.g., “you are 3 times more likely to get in an accident if you drive distracted”) without the absolute risks (e.g., (e.g., “31% of drivers who talk on the phone while driving will crash in the next 5 years compared to 10% of drivers who do not talk on the phone.”)
   5. Give people context (e.g., past trends, whether a number is higher or lower than average) or evaluative labels (e.g., “low risk” “high risk”)
   6. Carefully use visual charts and graphs to increase understanding

5. Help people feel the risk
   1. Don’t simply use emotion words. People need to feel the emotions themselves
   2. Tell stories about people hurt by distracted driving or about those who used your recommendations
a. Insert factual information into the cause-and-effect series stories as explanation will to increase understanding (e.g., “While Tom glanced at his phone, he traveled the length of a football field—it was no wonder that he didn’t stop in time”)
b. Use a in which character who struggles, expresses emotion, and is similar to the target (e.g., shares interests, age group, gender, etc.)
c. Stories do not have to be about fatal events—fender benders, tickets, and being embarrassed are all negative outcomes that could be related to distraction
3. Use arousing graphic images of car crashes or graphic descriptions of car crashes
4. Use concrete (vs. abstract) information
5. Ask people to imagine themselves crashing and/or taking action to not drive distracted
6. Don’t just use fear; appealing to pride or humor can also be effective
7. HOWEVER, people must believe that they can effectively take action for emotional appeals to work

6. **Tell people about what is normal and acceptable**
   1. Make sure people know that distracted driving is not normal (if that is the case)
   2. Do not tell people that “everyone” is driving distracted
   3. Use social disapproval (e.g., a circle with a line drawn through it over a picture of a distracted driver) to encourage negative thoughts about distraction
   4. Use social approval (e.g., telling people most people think distracted driving is unsafe) to encourage desirable thoughts or behaviors
   5. Make sure that the source of the approval are members of the same group (e.g., teens may not care that adults disapprove of distracted driving)
   6. Ask people to link to their own values and principles, like being smart or safe drivers

7. **Use a credible, likeable source, who belongs to the same group as the target audience**
   1. Use sources like law enforcement officers, medical professionals, and other first responders, who are both trustworthy and credible in the domain of distracted driving
   2. People also trust people similar to them, so find members of the same group (e.g., county or state, fans of the same team, younger vs. older people, etc.)

8. **Reduce message rejection and reactance**
   1. Remind people that it is their choice whether or not to follow your recommendations
   2. Include some minor negative information about your recommendations (e.g., “you may have lots of notifications when you arrive.”
   3. Include reasons why potential objections to your recommendations are incorrect (e.g., “you may think you can resist notifications, but research shows that you will be distracted anyway”)

9. **Test to be sure that your message is influencing behavioral intentions or actual behavior as intended**
   1. Determine the key outcomes to change (e.g., risk perceptions, attitudes, intentions or self-efficacy to follow recommendation, knowledge, etc.) based on prior research or pilot testing
   2. Recruit 50-100 people from the target appropriate population for each message to be tested and from a control group not exposed to the message
   3. Measure outcomes from 9.1
   4. Conduct a t-test to see if the groups are different
1. **Advocate for a behavior that 1) people can actually do and 2) will work for them**

Risk perceptions are a good predictor of self-reported cellphone use while driving, but even people who believe that cell phone use is dangerous use their phone anyway. In a recent survey of adult Ohio drivers (N=702) recruited through Amazon Mechanical Turk, we found that the majority of respondents (i.e., 80%) use their phones at least some of the time while the car is in motion, and 90% use their phones at least some of the time while stopped at a stop light or sign. Less than 20% of drivers said that they never used their phone while the car is in motion and less than 10% said they never used their phones while stopped. These drivers as a whole saw distracted driving as more risky than beneficial, but continue to use their phones ([as did drivers surveyed by AAA in 2014, 2015, 2016, 2017, and 2018](https://www.aaa.com)). Clearly, the actions people take to reduce their cellphone use while driving can be improved given that so many people use their phones despite believing it risky. In this section, we review evidence concerning the relative power of risk perceptions (i.e., beliefs about severity and likelihood of negative outcomes), self-efficacy (i.e., beliefs about what people can do), and response efficacy (i.e., beliefs about what recommendations will work) in predicting behavior.

A behavior’s desirability is due, in part, to the perceived risks or negative outcomes of not following the recommendations. In the case of distracted driving, these negative outcomes include crashes and being ticketed for distracted driving. However, research suggests that response efficacy, self-efficacy, and perceived costs are better predictors of behavior and intentions than risk perceptions (e.g., Carpenter, 2010; Floyd et al., 2000; Schwarzer et al., 2007).

For example, Floyd and colleagues (2000) conducted a meta-analysis (i.e., an analysis that summarizes the results of many studies) of 65 studies of a variety of health intentions and behavior (e.g., cancer prevention, healthy lifestyle, smoking cessation, compliance with treatment regimens, driving safety, etc.). They found that response efficacy, self-efficacy, and perceived costs were slightly better at predicting intentions and behaviors than perceived risks. Also, both types of efficacy predicted intentions and behaviors related to stopping risky behavior (e.g., quitting smoking) better than those related to starting a new positive behavior (e.g., starting an exercise regimen). These findings suggest that explaining how a recommendation is easy (to increase self-efficacy) and effective (to increase response efficacy) or selecting recommendations that most people already believe are easy and effective may be particularly important for helping people stop distracted driving.

A second meta-analysis (Carpenter, 2010) of 18 longitudinal studies of health behavior covering topics such as exercise regimens, attending educational programs, compliance with drug regimens, screening tests, and smoking cessation demonstrated that people who perceived high benefits of the recommendations and fewer barriers to enacting the recommendations were the most likely to follow the recommendations. These two variables predicted behavior more than people’s perceptions of how likely and severe the outcomes would be if they didn’t follow the recommendations. Furthermore, the longer the time frame of the study, the less perceived benefits, susceptibility, and severity predicted behavior, but perceived barriers were not affected by time frame—reducing perceived barriers might be a particularly useful target for communications.

Furthermore, in the case of emotionally arousing messages ([Section 5](#)) about risks, people are motivated to reject them ([Section 8](#)). However, it appears that an effective message can mitigate the link between emotion and rejection. In one study (Lewis et al., 2010), feeling more emotion also increased message rejection, but the extent to which drivers felt an anti-speeding message provided them with useful recommendations to reduce speeding not only predicted their intentions to drive the speed limit, it also reduced their intentions to avoid or ignore the advertisement. Thus, providing people with an effective strategy can prevent the message from failing or even backfiring (Witte, 1992, 2002).

For example, the Ohio drivers we surveyed perceived using GPS as more beneficial than risky; they perceived the opposite for cellphone use for phone calls, texting, and any other uses. As a result, any
recommendation to prevent use of phone for GPS is likely to fail because the perceived barriers and costs for enacting the recommendation will be too high. These include recommendations like putting the phone somewhere not in view (e.g., purse, trunk, console, etc.) or turning phone off. In addition, we found those who are more likely to drive distracted have more emotional attachment to their phones, so they would likely reject any recommendation that would require them to be physically separated from their phone. In contrast, turning off notifications and using a hands-free mount would allow people to keep their phones nearby and use GPS. Such solutions are more likely to be palatable to the public.

Thus, communicators should educate the public about actions that most people can do. People only choose to perform behaviors that they find desirable and doable (e.g., Ajzen, 1991; Bandura, 1977; Kruglanski, Shah, et al., 2002; Locke & Latham, 2002; Vroom; 1964). In other words, we must advocate solutions that the average member of the target population will believe is low cost, doable (people have self-efficacy), and effective (people have response efficacy). If recommendations about distracted driving focus on risk perceptions and response efficacy and ignore self-efficacy, then people may not follow them, even if they believe they would work (because they don’t believe they themselves can do the recommended behavior).

1.1. People given if-then action plans are more likely to change their behavior successfully

Convincing people that a recommendation is a good idea is necessary but not sufficient in changing behavior (Schwarzer et al., 2007; Sheeran, 2002; Sheeran & Webb, 2016). A sizable number of people who form intentions do not follow through (Sheeran, 2002). For example, in a study of seat belt use, people who believed that seat belts would make them safer and that they could use their seat belts if they wanted to were more likely to form intentions to use their seat belts. However, intentions didn’t directly lead to behavior. Instead, people who had higher intentions were more likely to have a plan for using seat belts. These plans then predicted seat belt use six months later (Schwarzer et al., 2007). Thus, planning is an important part of behavior change. The technique with the best support from research at reducing this intention-gap is the formation of if-then action plans (or implementation intentions). These if-then action plans include a mental script of how to behave when and where a specific situation arises (e.g., “when I get into the car, before I buckle my seatbelt, I will put my phone on do-not-disturb”) because the script makes it easier to remember how to act when the relevant situation is encountered, avoid procrastination, resist temptations, distractions, and peer pressure, and change habits (Gollwitzer & Sheeran, 2006; Sheeran & Webb, 2016). Furthermore, these kinds of action plans can be automatized and become habits (Gollwitzer & Sheeran, 2006; Wood & Neal, 2007).

Researchers have directed people to develop if-then plans rather than just asking them if they had their own plans. This approach has been successfully used to reduce speeding behavior (Elliott & Armitage, 2006). In this study, the if-then action plans were induced by having participants generate their own responses to when, where, and how they will obey the speed limit. Compared to a group of participants who didn’t form plans, the group that formed plans were more likely to report that they obeyed the speed limit. People can also be given implementation intentions rather than forming them (e.g., Bayer et al., 2010), so anti-distracted driving messaging could directly advocate a recommendation using an action plan (e.g., “if I hear a notification, then I will ignore it”).

Furthermore, behaviors are more likely to become habits if they are performed frequently (e.g., weekly or daily) vs. infrequently (e.g., annually or monthly), performed in a stable, distinct situation vs. in situations that vary, and performed consistently vs. inconsistently (Wood & Neal, 2007). As a result, communications should suggest action plans that require consistent, frequent responses to stable, distinct situations (e.g., “before you start your car, disable notifications”, see Figure 1.1). These plans likely will be more effective than action plans that require infrequent or unstable responses. The suggestion to ignore
notifications may be less successful because the action plan requires different (and thus infrequent or unstable) behavior in the car vs. other situations.

**Figure 1.1 Ads that use if-then action plans (left) and one-time behaviors (right)**

The Office of the Governor of Massachusetts tweeted this suggestion for an if-then action plan (i.e., when you enter your vehicle, turn off or silence your phone). This is a great action plan. Turning off notifications will prevent distractions and temptation, so it is likely that this suggestion is effective. In addition, silencing the phone allows people to use GPS, so that potential cost of following the recommendation is reduced. Entering a vehicle is a consistent, stable cue, making it likely that a habit can form. Furthermore, the red line and circle also communicates disapproval (Section 6.1).

Colorado Department of Transportation has a campaign to encourage people to use do-not-disturb while driving that includes local media (Section 7) giving examples of custom auto-replies they've chosen. This approach only requires convincing people to perform a single behavior.

1.2. Messages that “It can wait” or to “Just drive” could ironically increase distraction

Messages like “It can wait” or to “Just drive” require people to resist temptation (Figure 1.2). But resisting temptation (e.g., not answering a ringing phone or checking notifications) requires self-control and takes up cognitive resources (e.g., Muraven & Baumeister, 2000). Furthermore, because receiving notifications reminds people of their phone, it may make it harder and harder to resist it. Indeed, receiving notifications from an experimenter in a lab setting (i.e., people know that it is the experimenter texting and not something important) distracted people from cognitive tasks (Stothart, Mitchum et al., 2015). Thus, cell phones can make people worse at thinking. Asking people to not think about something also can backfire by causing more thinking about it (Wegner, 1994; Förster & Liberman, 2004). Self-control failures are more likely when people have depleted their cognitive resources—precisely when we do not want drivers to be further distracted. But under those conditions they will be more likely to give in to temptation and pick up their phones.

Instead, research suggests that people are the most successful at resisting temptation when they simply avoid the temptation in the first place (e.g., Ent et al., 2015; Milyavskaya & Inzlicht, 2017). We would expect that people that are the most successful at resisting the impulse to talk on the phone or text are the ones that avoid the temptation in the first place (e.g., by shutting off notifications). When these temptation-avoiding strategies only need to be done one time (e.g., able an app or setting that automatically detects that they are driving and turns off notifications), they may be even more successful because the strategies require little behavior maintenance.
Figure 1.2 Examples of ads that advocate for strategies that may increase distraction.

This student-designed billboard in Lancaster County, OH won their school a $1,000 grant for traffic safety programming. The design uses the “it can wait” message and prominently features icons for three apps that are popular among teenagers, thus reminding drivers of those temptations as they drive by. These billboard design programs like this one are a great way to make the issue of distracted driving personally relevant for students and get them to think more themselves about why distracted driving is bad (Section 2.1).

Distracted driving poster by Accuform does communicate negative consequences of distracted driving, but also encourages resisting distraction rather than a more effective strategy and reminds viewers of the tempting behavior.

1.3. Strategies that require behavior maintenance will be harder than one-time behaviors

Behaviors that require fewer resources, skills, effort, and time are more likely to be acted on than other behaviors (Sheeran, Trafimow, & Armitage, 2003). A strategy that requires repetition will almost always require more resources, effort, and time than a one-time behavior. Repetitive behavior is also more likely to encounter barriers or disruptions that reduce success. Behavior maintenance is difficult and may take multiple attempts to change. People are more likely to change if they’re able to make satisfying progress, overcome behaviors, resist temptation, find an environment or people who support the change, and form habits (e.g., Prochaska et al., 1992; Kwasnicka et al., 2016). Although if-then action plans will overcome many of these issues, people likely will also be successful if convinced to enable an app or setting that automatically detects that they are driving and turns off notifications (Figure 1.1).
2. Explain why people should change behavior and that your advice is best

Successful messaging does not only include a recommendation. It also informs people about the risk and provides evidence that the recommendation will work (particularly response efficacy). People need reasons to change their behavior; a billboard telling people to turn off their phones will not be sufficient on its own to motivate people to make a change. In this section, we discuss how to provide explanations that are most likely to convince people that distracted driving is risky and motivate behavior change.

In general, arguments that provide supporting evidence (e.g., academic publications, statistics or data; see below) and logical reasoning are stronger than arguments that use personal opinions, quotations, and circular reasoning (e.g., Petty, Cacioppo, & Harkins, 1980). For example, in one study, a message that provided an explanation for car safety recommendations (including relative risks of injuries for restrained vs. unrestrained children) resulted in greater intentions to use the recommended safety seat compared to similar messages that did not provide explanations (Will et al., 2015, Figure 2.1).

Figure 2.1. Ads providing strong arguments against distracted driving

This campaign for the Insurance Corporation of British Columbia includes short explanations of why phone use causes accidents. Good explanations do not necessarily have to be long. Even people not thinking a lot can quickly understand this message, and people thinking a lot have been given a clear argument.

The infographic for their campaign, a portion of which is excerpted (left) further uses statistics (27%) tailored to the target population (Section 3), and additional explanation of how distraction leads to specific types of crashes.

Typically in persuasion and communication research, though, a persuasive (i.e., strong) message is developed by presenting multiple arguments to people instructed to think carefully and asking them to provide their thoughts and reactions to the message. The strong message will be made from the arguments that produced the reactions most consistent with the intent of the message (Petty & Cacioppo, 1986). Specifically, arguments in favor of a position that result in more positive reactions and thoughts will be more persuasive than arguments that result in negative thoughts or reactions (and arguments against a position
should result in negative thoughts). This method could be used to develop messaging, although coding the reactions can be time consuming (Section 9).

In practice, not everyone will (or can) think carefully about a message. People who are motivated and able to think carefully about the message will scrutinize and evaluate the message; people who lack either motivation or ability to think carefully about the message will be more likely to use simple cues or heuristics to form their attitudes (e.g., Chaiken, 1987; Petty & Cacioppo, 1986). These cues can be relevant to the message, although superficial. For example, even for people not thinking carefully, number or length of arguments can serve as a simple cue (Petty & Cacioppo, 1984; Wood, Kallgren, & Priester, 1985) as can the word “because” because it cues that an explanation follows it (Langer, Blank et al., 1978). People can also be influenced by irrelevant information. For example, having people recall happy experiences or watch a funny video can cause them to have more positive attitudes and thoughts towards an unrelated target (e.g., Petty, Schumann, et al., 1993). In addition, people’s attitudes, behavior, and goals can all be influenced by irrelevant information present in the environment before they make a judgment or choice (Loersch & Payne, 2011).

Messages that try to use cues can be rejected by people thinking a lot, so even if cue-based messages work for the subset of the population not thinking a lot, they should be avoided because of the effect they have on the people scrutinizing them carefully. First, if people become aware of irrelevant information, they can overestimate how much it biased them and become more negative instead (e.g., Strack et al., 1993), especially when they’re motivated and able to look and correct for biases; (see Wegener & Petty, 1997 for a review). Second, when people’s thoughts about a message are negative, they will reject the content of the message and be resistant to future attempts to change their mind (e.g., Tormala & Petty, 2002). They may even shift their attitudes to be even more extreme (e.g., Lord, Ross, & Lepper, 1979).

For example, telling people how many people drive distracted as a means to reduce distracted driving might instead promote thoughts about how it must not be that risky if there is so much distraction. Similarly, people may feel that their behavior isn’t risky if it’s not as bad as the target of the ad. Our research shows that most people believe cell phone use while driving, particularly texting, is bad, but that cell phone use while stopped at a stop light or stop sign is much less risky. When presented with the commonly-cited statistic is that people travel the length of a football field while they are distracted, drivers who only use their phones while stopped may see this statistic as justification for their use while stopped. Others may reason that because they only look at their phones for a second or two, not 5 seconds, their behavior is not risky (Figure 2.2).

Figure 2.2. Arguments that may be counterargued or rejected by distracted drivers

This image from Teen Safe highlights the numbers of drivers who are distracted, which may cause drivers to feel that distracted driving is less risky because so many people do it.
This image from the CDC website on distracted driving uses a commonly-cited statistic that people travel the length of a football field while they are distracted. Distracted drivers may feel that, because they're “not this bad,” their behavior is not risky.

At 55 mph, sending or reading a text takes your eyes off the road for about 5 seconds, long enough to cover a football field.

2.1. Getting people to think more about strong arguments makes stronger attitudes

It may be tempting to try to disrupt or limit thinking to avoid backfiring effects, but there are huge benefits to getting people to think about the statistics and evidence you are providing. The more people think about evidence, especially if they think about it deeply and link it to other things they know, the more likely they are to remember it easily (e.g., Craik & Lockhart, 1972) and understand it (e.g., Harris & Qualls, 2000), and they will have increased resistance to future attempts to persuade them (Haugtvedt & Petty, 1992). This elaboration also creates attitudes that come to mind more easily and have a greater influence on judgments and behavior (e.g., Fazio, Powell, & Williams, 1989). If people are aware of their thoughtfulness, they will be more certain that they have come to the right conclusion (Barden & Petty, 2008). All of this is to say that people who think more about a message and are persuaded by it (vs. those who are persuaded but didn’t think as much) form evaluations that last longer and are more consistent over time, affect behavior more, and resist future attempts at persuasion (for review, see Petty, Haugtvedt, & Smith, 1995). Thus, for long-term change, best practices include the use of strong arguments and encouraging thoughtfulness by tailoring the message to the topic or audience (Section 2.1), making it easier for people to process numeric messages (Section 4), and increasing emotion (Section 5).

2.2. Prioritize what you want to say—less information is better than more information

Experts by definition possess a great deal of information about a topic, but should avoid the temptation to present all of that information to the public. Instead, use that expertise to present only the most important information and highlight it. Peters, Dieckmann, et al., (2009) demonstrated that adding relevant, but less important and helpful information about hospital quality resulted in lower comprehension and worse decisions about hospitals, particularly among participants less skilled with numbers. Presenting irrelevant information to decision makers reduces the impact of the relevant information, and even when people are explicitly told that about the hazards of irrelevant information and encouraged to only focus on the relevant information, they were unable to do so (Kemmelmeier, 2004). Thus, experts must identify the most important information to highlight and resist the urge to include additional detail andnuance that may overwhelm the public. For example, in the case of distracted driving, the most relevant statistical information may be the increased severity or rates of crashes for people who drive distracted vs. don’t drive distracted. Other important information might include the cognitive distraction caused by notifications or texting while stopped at stop lights, the reduction in crashes for states that have distracted driving bans, or the monetary cost a crash will cause a distracted driver.

Experts also may overwhelm the public by educating them about too many choices which can induce them to delay or avoid the choice and reduce their satisfaction or the quality of choice they finally make (for review, see Schwartz, 2004). For example, there are many strategies for reducing distracted driving, such as using blue tooth, enabling do not disturb settings, or choosing among apps that automatically reply, read texts aloud, and/or allow voice-to-text reply, etc. Choosing a strategy involves
tradeoffs, and to avoid the negative emotion and effort, people can decide it is easier to do what they’ve been doing and not change (e.g., Luce, Bettman, & Payne, 1997). Drivers, particularly those who are concerned with making the “right” choice (Schwartz et al., 2002), may continue to drive distracted until they have made a decision about what method to use or put off the decision because it is too difficult. Instead, experts can focus on educating people about a smaller set of appropriate choices (Zikmund-Fisher et al., 2011). In the case of distracted driving, experts should identify the strategies that are most effective, easiest, and supported by the public. As mentioned in Section 1, these strategies likely will allow people to access their phones for GPS or listening to music while eliminating distracting notifications.
3. Use arguments about attributes most relevant to the topic and the target audience

Drivers tend to believe that their own driving is less risky and more skilled than the average person (e.g., Svenson, 1981), that crashes are more likely when they are the passenger vs. the driver (McKenna, 1993), and that others are more likely to crash or be ticketed than them (Delhomme et al., 2009). These overconfident beliefs are associated with greater self-reported risky driving behaviors (Delhomme et al., 2009; Shoots-Reinhard et al., in preparation). Because people who drive distracted already believe that the risks do not apply to them, it’s important that messages are conveyed in such a way that reinforces that the risks do in fact apply to them. In other words, messages can’t just be strong, they also need to be tailored, or altered in a way that makes them match the message topic or target audience. In this section, we will summarize strategies that can be used to tailor a message and make it seem more relevant.

Arguments that are tailored to the message topic and person receiving the message are stronger than ones that mismatch (e.g., Petty, Wheeler, Bizer, 2000 for review): the match can make the message “feel right” to the person receiving it (e.g., Higgins, Idson, et al., 2003), cause people to have more positive reactions to the message (e.g., Lavine & Snyder, 1996), make the message seem more relevant (DeBono & Packer, 1991), and motivate greater thinking about the message (DeBono & Hamish, 1988; Petty & Wegener, 1998). As mentioned above (Section 2.1), when people think more about your message and you successfully convince them, they will be more likely to follow your recommendation than someone who is convinced but has not thought as much.

For example, people differ in the extent to which they are motivated and influenced by what other people think and do vs. their own personal attitudes and values. People who are more concerned with what others think are more persuaded by information about how a product or recommendation will increase their social image (e.g., the shampoo that makes your hair look good) vs. the functional features or benefits of the product or recommendation (e.g., the shampoo makes your hair clean). In contrast, people who are more motivated by their own personal attitudes and values will be more persuaded by messages that focus on the functional features or benefits vs. social image (Snyder & DeBono, 1985).

However, tailoring can be difficult because people will not universally agree on which attributes are the most important or which arguments are the most persuasive (Petty & Cacioppo, 1983; Petty Wheeler, & Bizer, 2000). For that reason, unless the target audience is similar to one another on some key variable, it may be best to use a mix of arguments. At least one study has shown that, although matched messages were best, a mix of both types of arguments worked better than only mismatched messages (Lavine & Snyder, 1996). Another method of tailoring is to include simple cues that the message is relevant to the audience, such as using 2nd person pronouns (i.e., you) vs. 3rd person pronouns (i.e., one; Burmkrant & Unnava, 1989) or telling people that the topic is relevant to desirable outcomes (for review, see Petty & Cacioppo, 1990). For example, people will feel that the topic is more relevant if it affects their own school now vs. a different school (e.g., Petty & Cacioppo, 1979). Messages coming from sources similar to the target audience also increase relevance (e.g., Petty, Cacioppo, et al., 1983, see Section 7).

3.1. A focus on benefits may be better than a focus on costs

Facts about risk can either be framed as the costs or losses from a behavior (such as getting in a crash as a result of distracted driving) or as the benefits or gains from a behavior (such as an insurance discount for driving safely; Figure 3.1). Focusing on benefits is more effective than focusing on costs for messages about preventing future harm (Cho & Sands, 2011; Detwiler, Bedell, Salovey, et al., 1999; Rothman, Stark, & Salovey 2006 for review), at least partially because loss-framed messages are threatening and provoke reactance (Cho & Sands, 2011). Communications about distraction mitigation should focus on the gains from paying attention when driving (e.g., being safer, making parents or self proud, being crash-free) vs. losses (e.g., causing crashes, getting a ticket, getting in trouble with parents). Adolescents in particular may benefit from messaging focused on the gains from safe behavior (e.g., Cho & Sands, 2011) as they tend to be more tolerant of risky, dangerous behavior (Albert & Steinberg, 2011).
Research on tendencies to be more motivated by gains or losses corroborates this finding; among adults who prefer to approach good outcomes, gains-framed messages that focus on benefits of taking a particular course of action are more persuasive than loss loss-framed messages that focus on the costs of not taking a particular course of action whereas adults who prefer to avoid negative outcomes are more convinced by loss- vs. gains-framed messages (e.g., Cesario, Higgins, & Scholer, 2008).

Figure 3.1. Example of gain-framed and loss-framed messages

<table>
<thead>
<tr>
<th>STAY ALIVE!</th>
<th>U DRIVE, U TEXT.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Stay Alive</strong> is a gain-framed message used by Ohio State Highway Patrol.</td>
<td><strong>&quot;U pay&quot;</strong> is a loss-framed logo designed by the US Department of Transportation.</td>
</tr>
</tbody>
</table>

3.2. Messages about health may be persuasive when framed in terms of feelings vs. thoughts

People’s attitudes can also be based on how they feel or how they think about a topic and messages that match the basis for their attitudes are more persuasive (e.g., Mayer & Tormala, 2010). Researchers have found emotional vs. cognitive/factual messages are more effective in changing health behavior (e.g., Conner et al., 2011; Lawton, Conner, et al., 2009).

The persuasiveness of feelings vs. thoughts can be either something that people have a general tendency for—some people tend to base their attitudes on emotions, other on factual beliefs—or it can be determined by the topic. For example, women and men were presented with the same movie reviews, but the opinions began either with “I feel” or “I think.” Women were more persuaded by the “I feel” than the “I think” messages; the reverse was true for men. The researchers also controlled which frame would be more convincing to people by exposing them to vivid, emotional narratives vs. statistics and facts. Those exposed to vivid, emotional narratives initially were subsequently more influenced by a message using the matching “I feel” vs. the mismatched “I think” frame; whereas those initially exposed to statistics and facts were subsequently more influenced by the “I think” than the “I feel” frame (Mayer & Tormala, 2010).

This finding may explain why the research on health behavior has found emotional messages work better—these studies have many more women than men in their sample. Therefore, the superiority of emotional messages may still be limited to the (overrepresented) women in their sample. Thus, messaging studies should attempt to recruit equal numbers of men and women, and conduct analyses to determine whether the messages work better for one gender than the other. It is unclear at this time what frame and gender effects might emerge in distracted driving.

Alternatively, a mix of appeals can be used as suggested by the results of Lavine & Snyder (1996). Indeed, although research on graphic warning labels have not systematically pitted emotional appeals against cognitive appeals, adding highly emotional graphic images to fact-based warning labels increases risk knowledge, risk perceptions, and quit intentions (e.g., Noar, Francis, et al., 2016, 2017; Noar, Hall, et al., 2016) and. In addition, emotional reactions towards messages predict how well people can remember the facts from the labels (e.g., Peters et al., 2018). As a result, we think messages that involve both facts and emotions will be the most effective.
4. Show people the data and statistics. And make sure people understand them

Mass public campaigns are used to inform the public of a threat that can be avoided if action is taken. Campaigns often involve communicating likelihood information, such as the probability of harm if the recommendation is followed vs. not followed (Donovan & Henley, 1997). A meta-analysis of 208 studies examined the effects of risk communications on risk perceptions and consumer, financial, and health behavior, including driver safety (Sheeran et al., 2014). They found that if the campaign succeeds in increasing the severity and likelihood of harm, both intentions and behavior are influenced more than when only severity or likelihood are increased. The nine driving safety intention studies included in their meta-analysis showed a small-medium sized effect of changing risk perceptions on intentions to drive safely, although the five studies including driving behavior did not show a significant effect of heightened risk perceptions. In our own research (Shoots-Reinhard et al., in process), we have found drivers who perceived more risk from driving distracted reported driving distracted less often. They also had more positive views of methods to reduce driving distracted (e.g., technologies, public policy) and rated a study linking phone calls and crashes as more convincing.

Risk information can be communicated numerically (e.g., as a percentage) or non-numerically (e.g., “very unlikely”). In medicine, people seem to overestimate the likelihood of risks described with verbal labels vs. numeric probabilities (e.g., Berry, 2006; Peters, Hart, et al., 2013; Young & Oppenheimer, 2009). Whole (i.e., avoid using decimals) numbers improves understanding of risks (Lipkus, 2007; Peters, Hart et al., 2013), but not everyone will intuitively understand statistics. As a result, some care must be taken when communicating risk to the public (see Fagerlin et al., 2007; Gigerenzer et al., 2007; Lipkus, 2007; Peters, Hibbard, et al., 2007; Peters, Klein, et al., 2013 for recommendations summarized here). An increased complication is that car crashes are a low probability event. Although most people will experience a car crash in their lifetime, the risk from any one trip is very low. In other words, the risks for dangerous driving behavior, like distracted driving or seat belt use are cumulative, and care must be taken to communicate this cumulative risk. Below are three general strategies for effective communication of numeric risks.

4.1. Do the math for the audience

Distraction increases the risk of crash, but the numeric likelihood of a crash is very low if you glance at your cellphone once. Instead, the risks accumulate over time (similar to smoking being a risky behavior over time but smoking a single cigarette posing only a small risk). The average person cannot calculate these cumulative risks accurately (Doyle, 1997; Peters, Kunreuther et al., 2012; Shoots-Reinhard in preparation), so the risks should be calculated for the audience. In addition, line graphs could be used to show how the risks cumulate over time, and presenting risks over many exposures or longer time frames may be helpful (Lipkus, 2007). For older drivers, longer time frames may be beneficial (e.g., “5 out of every 10 drivers who talk on the phone while driving will have a crash in the next 10 years compared to 2 out of 10 of drivers who do not talk on the phone”), similar to how risks of smoking are communicated. Slovic and colleagues (1978) conducted a study involving seat belt use and found that presenting participants with the lifetime risk statistics (vs. single trip statistics) were more likely to intend to use their seatbelts and supported laws to mandate seatbelts. We expect similar results for distracted driving.

For young drivers, it may be more effective to present 5-year risks, because they are at the greatest risk between the ages of 16 and 25 and they may be more responsive to more immediate time frames (e.g., 31% of drivers who talk on the phone while driving will crash in the next 5 years compared to 10% of drivers who do not talk on the phone. In other words, using your phone while driving triples your chance of a crash!).

4.2. Help people evaluate the meaning of the numbers

Numbers on their own do not always communicate meaning to the public. For example, car crashes kill about 1,000 people in Ohio per year on average. If in 2020, 800 people die in car crashes in Ohio, safety experts will be thrilled with this number, whereas members of the public might be dismayed
that the number is so high. In order to have meaning, people must have experience (like the experts) or be given context or evaluative labels.

One way of giving context is through comparing numbers or probabilities. These can be communicated as relative risks (e.g., “distracted drivers are 3 times more likely to get in an accident”) or as absolute risks (e.g., “distracted drivers have a 7% chance of crash per year compared to a 2% chance for those who do not drive distracted”). Although it may seem helpful to give people less information by giving a relative risk, relative risks on their own are misunderstood by the public (e.g., Gigerenzer & Edwards, 2003; Lipkus, 2007). Furthermore, if risks are presented as a ratio (e.g., 1 in a 100 chance), all of the numbers should have the same denominator (e.g., 1 in a 100 should be compared with 5 out of 100, not 1 out of 20) because people tend to focus on the numerator and neglect the denominator (Lipkus, 2007; Reyna & Brainerd, 2008). The reference period (e.g., lifetime risk, 10-year, annual risk) should also be kept the same to make it easier for participants to compare (Peters, Hibbard, et al., 2007).

There are no straightforward recommendations with respect to using frequencies (e.g., risk effects 20 out of 100 or 1000) vs. percentages (20%). Some researchers recommend using whole numbers to communicate risk (Gigerenzer & Edwards, 2003), such as communicating accident rates as a number of drivers out of 1000 who would experience a crash in a given year. Frequencies do evoke more emotional responses but do so at the cost of decreased attention to the denominator (e.g., Denes-Raj & Epstein, 1994; Lipkus, 2007; Slovic, Monahan, & Macgregor, 2000). For example, some people perceive an accident risk of 30 out of 1,000 to be higher than 3 out of 100, although both are equivalent to 3%.

Because people, especially those low in numeric ability, are influenced by whether frequencies or percentages are used (e.g., Peters et al., 2006), it is critical to provide additional help to the public. People also benefit from being given evaluative labels (e.g., “poor,” “good,” “above average,” “below average,” etc.) in addition to numeric information (Hibbard et al., 2002; Peters, Dieckmann et al., 2009). Evaluative labels increase the degree to which the numeric information influences judgments, decreases the influence of irrelevant emotion, and which results in improved judgments. For example, when communicating rates of accidents for a location or year, the public will be assisted by information about whether the rate is higher or lower than the average for the state or higher or lower than the last several years (Figure 4.1).

Figure 4.1. Presenting numeric information using evaluative labels (top) and evaluable units (bottom)
This excerpt from a *poster from Cambridge Mobile Telematics* makes comparisons between drunk and distracted driving by using whole numbers and a unit of measurement that people can intuitively understand (i.e., the distance that is traveled because of slower reaction times).

4.3. **Present the risks using graphs and charts**

Visual aids can be used to improve comprehension and learning of numeric information (Lipkus, 2007; Hibbard & Peters, 2003). Bar charts encourage comparison, line graphs can be used to show changes over time, and number of people affected within a population can be shown with an icon display with the number affected differentiated from the number not affected (e.g., different colors). As with number presentations, people lower in numerical ability will have a more difficult time interpreting graphs (Peters, Dieckman, et al., 2007), so graphs should be made as easy to interpret as possible (*Figure 4.2*). Again, labels that convey evaluative meaning (e.g., “above average,” “below average,” “low risk,” “high risk,” etc.) improve understanding (e.g., Hibbard & Peters, 2003; Peters, Dieckman et al., 2007, 2009), as do explanations of the conclusions to be drawn (Parrott, Silk, et al., 2005). The order of information given in a chart or graph is also a visual cue, and understanding is improved by ordering entries from largest to smallest (e.g., Hibbard et al., 2002; Peters, Dieckman, et al., 2007, 2009).
Figure 4.2. Support for mitigation strategies among Ohio Law enforcement

In this bar graph, amount of support for mitigation strategies is color-coded (green indicating support) and the graph is ordered from most supported to least supported to make it easier to understand.
5. Help people feel the risk

Section 2-4 have covered the best ways to help people understand risks and recommendations by providing explanations that use only the most important information, tailored to be most relevant to the target audience, and using numeric information in a way that people can understand it. From this perspective, the best way to go about increasing feelings of severity and likelihood of harm may seem obvious—simply tell people how severe and likely are the harm. Indeed, it has generally been theorized that communications should include both the severity of harm and likelihood of it occurring (e.g., Fishbein & Ajzen, 2010; Floyd, Prentice-Dunn, & Rogers, 2000; Witte, 1992). Experts also tend to focus on number of lives at stake and probability of harm when making judgments of risk. However, laypeople’s risk perceptions are influenced by a range of complex considerations. The public’s risk perceptions appear to align with two dimensions: dread risk (characterized by perceived lack of control, feelings of dread, perceived catastrophic potential, and the inequitable distribution of risks and benefits) and unknown risk (characterized by the extent to which a hazard is judged to be unobservable, unknown, new, and delayed in producing harmful impacts). In particular, auto crashes score very low on unknown risk and are at the midpoint of the dread risk (Slovic, 1987)—people are very familiar with car crashes and feel that they have control over risks associated with driving (Fischhoff et al., 1978). As a result, driving-related risks, including distracted driving, may not feel particularly emotional to people. Because risk perceptions are often driven by feelings (Slovic et al., 2002), this gap is important. In this section, we first review research demonstrating the effects of emotions on risk perceptions and behavior and second provide a number of strategies to help people feel the risks.

Emotionally arousing messages influence attitudes, risk perceptions, and behaviors (e.g., Johnson & Tversky, 1983; Shen, 2018), and they tend to have these effects through multiple pathways (e.g., Peters, 2006; Peters, Lipkus & Diefenbach, 2006; Petty, Fabrigar, & Wegener, 2003; Wyer, Clore, & Isbell, 1999). For example, negative feelings about a topic can be a source of information that increases risk and decreases benefit perceptions (e.g., Alhakami & Slovic, 1994; Chaiken & Mahsewaran, 1994; Forgas, 1994; Petty, Schumann, et al., 1993). Greater emotion can also motivate greater thinking about and accepting a message (e.g., Evans, Peters, et al., 2015) and reduce rejection of a message (Lewis, Watson, & White, 2010). While people are thinking about a message, emotion elicited by the message can also color their thoughts, such that a positive mood will lead to positive thoughts and a negative mood to negative thoughts (e.g., Chaiken & Mahsewaran, 1994; Forgas, 1994; Petty, Schumann, et al., 1993). In our own research, we have found support for three distinct pathways of emotional reactions to tobacco warning labels: 1) greater arousal (e.g., feeling energized, nervous, excited, fearful, etc.) increases greater thinking about a message, which in turn affects memory (Peters, et al., 2019) and perceived credibility (Evans et al., 2015), both of which increase perceived risk of smoking, 2) greater arousal serves as information that directly leads to greater risk perceptions (Evans et al., 2015; 2017; 2018), 3) greater arousal is a motivator that increases quit intentions (Evans et al., 2015; 2017).

Emotion also improves memory (e.g., Laney et al., 2004; Peters et al., 2019; Sadoski & Quast, 1990), especially arousing negative emotion (e.g., anxious or fearful; Kensingier, 2009). Research from our lab has shown that more arousing emotional responses to anti-smoking messages are associated with better memory of smoking risks in addition to the increased risk perception and quit intentions mentioned above (e.g., Evans et al., 2015; Peters et al., 2019). Improving knowledge is important, because research suggests that the more knowledge people can recall about a topic, the more they are able to resist changes to their attitudes (Wood, 1982). However, recall and evaluation will not always be consistently related (Eagly & Chaiken, 1993); a message may affect risk perceptions or attitudes without being accurately remembered. For example, people who form their evaluations spontaneously will have a weaker link between memory and evaluation than for those who tend to make evaluations when asked based on what
they can remember (e.g., Tormala & Petty, 2001). Thus, although learning is an important outcome, messaging can change evaluations even if the public appears to have forgotten the message itself.

Figure 5.1 Advertisement using an unemotional image.

This NHTSA ad provides statistics (Section 2 and Section 4), but not only is the image non-emotional, it models distracted driving (Section 6). If a graphic image were used instead, this message may attract more attention, improve long-term memory for distraction risks, increase perceived riskiness of distracted driving, and increase intentions to not text and drive.

5.1. Don’t just use emotion words. People need to feel—not read—emotions

It is important to note that emotional messages don’t simply contain words related to emotions. For example, Janssen et al., (2013) developed warning text about tanning beds and skin cancer risk. They compared a narrative about a woman who was diagnosed with skin cancer to two factual conditions, one of which used affective language (e.g., “people are worried about the dangers of skin cancer”). Participants who read the woman’s story reported more emotional responses, had an easier time imagining getting skin cancer, and had greater risk perceptions than the factual reports. Using emotional words didn’t increase the effectiveness of the message.

5.2. Tell stories where characters are hurt by distracted driving

Stories—that include characters encountering a series of events that are linked in cause-and-effect series—are effective means of changing attitudes and beliefs and have particularly strong effects on emotional reactions (Van Laer et al., 2014). Narratives change attitudes by “transporting” readers into the story: evoking emotion, holding attention on the story, and prompting imagination of the events in the story (Green & Brock, 2006), as well as encouraging reflecting on past experiences (Hamby et al., 2017). When making decisions, narratives can help people use information more normatively (Sanfey & Hastie, 1998; Satterfield, Slovic, & Gregory, 2000) and can even be more influential than statistical summaries (Borgida & Nisbett, 1977). In addition, inserting facts into narratives where they are integral to the plotline makes them more likely to be both trusted and remembered (Dahlstrom, 2010, 2012).

For example, a story about how distracted driving caused a crash could include a fact about how long people travel when glancing down (e.g., “He was driving on a residential street, so he didn’t think it was a big deal to find his song—he was only driving 35 mph. It only took him a couple seconds to glance down and find the song he wanted but he had traveled 100 feet while distracted. By the time he looked up, he was too close to the other car to stop before rear-ending them. Those two seconds cost him hours of talking to police officers, EMTs, and insurance adjustors and a couple thousand dollars in fines, repair fees,
and higher insurance premiums. He thought of those two seconds a lot while his friends went on a spring break trip that he couldn’t afford.

Shen and colleagues (e.g., Peng, Shen, et al., 2018; Shen, 2010, 2011, 2018) have studied a very similar concept they call “empathy,” which is identification with the character or situations, understanding the reaction of the character, and sharing the character’s emotion (e.g., Shen, 2010). Across a variety of topics, they have demonstrated that empathy-inducing messages reduce message reactance and increase message agreement. Their research provides a roadmap for increasing the power of narratives that can be used to create more influential videos or predict the efficacy of existing videos (Figure 5.2). Using 20 different PSAs, they documented (Shen, 2018) that viewers experienced more empathy (and persuasion) when

1. the character made eye contact with the viewer,
2. struggled in some way,
3. expressed emotion explicitly and strongly,
4. was more similar to the viewer (e.g., experience, appearance, life style, cultural values, race, age, sex, SES), the music heightened the emotional experience, and
5. the video was vivid (e.g., concrete images, rich colors, high saturation, high clarity, brightness, sharpness).

Figure 5.2 Low-empathy (left) and high-empathy (right) videos

This pallid, low-empathy video created by AAA does not show the character’s face, let alone them expressing emotion or making eye contact. It is not involving, as there are no consequences to the distracted behavior.

In contrast, this vivid, high-empathy video from AAA includes emotional expressions from multiple characters. The consequences of the distracted behavior are severe and highlighted by tension-provoking music.

Critically, stories do not have to be about fatal risks, even stories about a series of unfortunate negative events can evoke negative emotion that impacts risk perceptions (e.g., Johnson & Tversky, 1983). Thus, messaging does not have to focus on fatal crashes (that people may feel are unlikely to occur, see discussion of threat likelihood above)—vivid descriptions of the hassle caused by being in a rear-end crash (far more common than fatal crash) could be tested to for their emotionality and effect on risk perceptions.

It is also not necessary to find a true story or have a victim tell their own story to be effective, although using victim stories is a common approach. Narratives do not have to be true in order to be persuasive (Green & Brock, 2006), but they are more effective when they are imaginable and seem true (Van Laer et al., 2014). Thus, a fictional story carefully designed and delivered to encourage transportation could be as effective or even more effective than a personal story. Facts could be added to explain why distracted driving is bad (Dahlstrom, 2010, 2012, see above). Additionally, changes could be made to a
story so that the character has similar past experiences or characteristics as the audience (e.g., de Graaf, 2014; Green, 2004; Shen, 2018; van den Hende, et al., 2012). In one study (de Graaf, 2014), manipulating the living situation (i.e., with parents or with housemates) of the protagonist who experienced a diagnosis of intestinal cancer to be similar (vs. different) than the reader produced greater risk perceptions of intestinal cancer and intentions to get treatment. Messages could be changed so that the character lives in a similar environment (e.g., urban vs. suburban vs. rural), is in a similar stage of life (e.g., student vs. parent), or uses similar distracting technology (e.g., using iPhone to Snapchat vs. using iPhone to play Pokemon Go).

5.3. Use highly arousing graphic images (e.g., of car crashes)

Visual images may provide even stronger impact, and testing could reveal the most effective image types to reduce distracted driving (Sheehan, Dahmen, & Morris, 2019). Advertisements and graphic warning labels both make use of graphic imagery—advertisements show positive images to increase the appeal of a product; warning labels use negative images to decrease the appeal of a product. In the case of tobacco graphic warning labels, a large body of research has established that the addition of graphic imagery of smoking-related health risks to cigarette pack warnings has increased attention to warnings, emotional reactions, risk perceptions, and quit intentions (Noar et al., 2016). Our own research suggests that much of the effect of warning labels on risk perceptions and quit intentions is due to emotional reactions (e.g., Evans et al., 2015), and that images that elicit lower emotional responses may be even less effective than no image at all (Evans et al., 2017). If the emotional reaction elicited by the message is anger, however, the message may increase reactance, which involves rejecting the message and attempting to come up with reasons why the arguments included in the message are wrong (e.g., Evans et al., in preparation; Hall et al. 2018).

The inclusion of visual images or videos should work with distracted driving, too, such that more arousing imagery should support persuasion better than less arousing imagery (Figure 5.3). For example, young drivers shown a video of “the gory aftermath of a number of fatal collisions” (vs. those shown a control video about car maintenance) experienced greater fearful emotional reactions, perceived crashes as more serious, and drove more carefully in a simulator (Griffeth & Rogers, 1976). Similarly, the more that participants thought that PSAs were graphic, emotionally arousing, dramatic, intense, etc., the more empathy they felt for the main character of the PSA, which produced more persuasion (Shen et al., 2018).

Figure 5.3. High-emotion (left) and low-emotion (right) anti-distraction images

August, Lang, & Husak’s Decide to Drive campaign for the American Academy of Orthopedic Surgeons includes graphic and arousing imagery (pictured above).

In contrast, Audi’s “Leave your phone while you drive” campaign designed by Saatchi & Saatchi features beautiful, calming scenery that is unlikely to arouse worry about distracted driving.
5.4. **Use concrete and vivid language**

Images do not have to be provided; if people can picture or imagine an aspect of the text in their minds, they will experience greater emotional responses, understanding, and interest (Goetz et al., 1994). Including concrete details or replacing abstract terms with more concrete ones, for example, can accomplish this goal. Concreteness (vs. abstractness) increases recall by increasing how comprehensible and interesting are passages (Sadoski et al., 1993; 2000) and how much people can picture information or events in their mind (e.g., Goetz et al., 1991). In addition, concrete (vs. abstract) language increases attention to the message and the perceived importance, expertise and trustworthiness of the source (see Section 7.1); it also increases consistent attitudes and behavioral intentions (Miller et al., 2007). Even narratives can be made more concrete by replacing abstract terms with concrete ones and using more precise or specific language; doing so increases comprehensibility, interestingness, and recall (Sadoski et al., 2000).

Vivid, but causally irrelevant, details added to persuasive messages can cause those arguments to be more likely to be remembered and used in judgments (Reyes, Thompson, & Bower, 1980; Shedler & Manis, 1986), and vivid, easily imaginable described attributes influence judgments more than attributes that are difficult to imagine (Keller & McGill, 1994). However, imagery requires elaboration (e.g., McGill & Anand, 1989) and can disrupt processing of other information, including numeric information (e.g., Petrova & Cialdini, 2005), so it may be best to not combine statistics and vivid language in a single message if it distracts from the message.

As with graphic images, vivid language can increase reactance (Quick & Stephenson, 2008), so vivid language about threats may need to be combined with other strategies that reduce reactance (Section 8). However, using concrete, specific language does not appear to increase reactance, and instead makes the message more likely to be followed (Miller et al., 2007), so there doesn’t seem to be a downside to increasing concreteness. Thus, it may be easier for drivers to picture, remember, and follow a message like “Fred glanced at a notification on his phone at a stop light and crashed into the car in front of him before he noticed the light turned red. If you don’t want to cause a crash, change the settings on your cellphone to enable Do Not Disturb While Driving.” than a more abstract message like “People who are distracted by their phones can cause rear-end collisions at intersections. If you don’t want to cause a crash, use Do Not Disturb While Driving.”

5.5. **Ask people to imagine themselves getting in a crash and/or taking action to not drive distracted**

Audiences can be directed to imagine themselves performing a behavior which increases their attitudes and emotional responses towards the behavior (e.g., Babin & Burns, 1997; Escalas, 2004) and makes them more likely to actually perform the behavior (e.g., Gregory et al., 1982) by prompting transportation and simulation of the events in the prompt (e.g., Escalas, 2007). Ease of mental imagery increases likelihood judgments (Sherman et al., 1985; Gregory et al., 1982) and behavior (Anderson, 1983; Bone & Ellen, 1992). Importantly, however, if the behavior is too difficult to imagine, the imagery appeal can backfire (Petrova & Cialdini, 2005).

Recently, researchers have examined the role of imagery in risk perception (Sobkow, Traczyk, & Zaleskiewicz, 2016). People asked to imagine negative consequences from a variety of risky behaviors (e.g., speeding) were more likely to experience negative affect and had greater risk perceptions. Thus, having drivers imagine negative consequences from distracted driving should increase their distracted driving risk perceptions. Then having them imagine themselves using a strategy to not drive distracted should increase their likelihood to actually perform the behavior, assuming that the behavior is not too difficult to enact or imagine.
5.6. Fear is only one type of emotion that can change minds

Much of the research and theorizing on the effects of emotion in persuasion have concentrated on fear appeals in particular (see Witte & Allen, 2000 for a review) because the experience of fear is related to greater perceived risk (e.g., Witte, 1992). Thus, fear can be evoked by presenting severe and likely negative outcomes. Fear and risk perceptions are separable, however, as messages that increase risk perceptions are more effective at changing intentions and/or behavior when they also increase emotional reactions (Sheeran et al., 2014). Indeed, other emotions can be evoked by messages that communicate information about negative consequences (e.g., Donovan & Henley, 1997).

For example, an Australian team used a variety of emotion-based appeals to reduce speeding (Lewis et al., 2010). Specifically, they used a pride-based emotional appeal that involved a female passenger kissing a male passenger for not speeding and a humor-based emotional appeal (Figure 5.4) that involved a male driver being caught for speeding while a crash dummy drives by doing the speed limit and asks “so who is the real dummy?” in addition to the more typical fear-based ad that graphically depicts a speeding driver who hits and severely injures a pedestrian that turns out to be his friend. Across both the fear and non-fear based emotional appeals, they found that the degree to which the emotional appeals evoked the intended emotion, the more useful participants found the advertisement, and the less they wanted to avoid the message. The usefulness of the ad/recommendation then lead to greater intentions not to speed.

What seems to matter is that the emotion be the one intended by the message (Donovan & Henley, 1997) and that people are given a recommendation that they can enact (see Section 1). For example, anger directed towards messages intended to evoke fear is associated with lower risk perceptions and behavioral intentions and greater avoidance of additional messages (Hall et al, 2017). Simply arousing a great deal of fear may have no impact on behavior (e.g., Carey et al., 2013) or could lead to anger and message rejection if they feel like they cannot act effectively (Witte & Allen, 2000).

Figure 5.4. Anti-distraction message using humor

John St. and Cieslok Media put up a billboard in Toronto for a fake funeral home encouraging drivers to text and drive.
6. Tell people about what is normal or acceptable

Beliefs about what other people’s typical behavior (i.e., norms) are a factor in several models of behavior and behavior change (e.g., Ajzen, 1991; Burger, 1999). Research demonstrates that what other people do (the descriptive norm) is only one type of norm; what we believe people should do (the injunctive norm) also influences behavior although sometimes the descriptive norm is more salient while in other environments the injunctive norm matters more (Cialdini, Reno, & Kallgren, 1990). A third type of norm, moral norm, is characterized by personal beliefs about what people must do to be true to their own personal identities, values, and principles (Parker et al., 1995; Smith, McSweeney, et al., 2007).

Descriptive norms, injunctive norms, and moral norms all influence behavior and can be used in messaging, which we describe below.

People are motivated to change their behavior to be more consistent with the descriptive norm (e.g., what similar others do; Nolan, Cialdini, et al., 2008). In a study of energy consumption, information about what the majority of their neighbors were doing (“join your neighbors—77% of San Marcos residents use fans instead of air conditioning”) resulted in lower energy consumption for an entire month after the campaign than appeals arguing from self-interest (“save money—save up to $54/month”), environmental protection (“protect the environment—prevent he release of up to 262 lbs of greenhouse gases”), or social responsibility (“do your part to conserve energy for future generations—reduce your monthly demand for electricity by 29%”; Nolan et al., 2008). These results are especially interesting given that people reported that other people’s behavior had the least impact on their decision to conserve energy.

Descriptive norms are easy to manipulate by calling attention to what other people are doing. People can be influenced by seeing other people act (e.g., seeing someone walk by and throw away litter discourages littering; Cialdini et al., 1990) or being told what others are doing in private (e.g., reusing their towels; Goldstein & Cialdini, 2007). Unfortunately, descriptive norms also can demotivate when people find out that their good behavior makes them different from the rest of the group (e.g., they are using less energy than the average household in their neighborhood; Schultz et al., 2007) or when they do not share the concern noted (e.g., environmental concerns among Republicans; Costa & Kahn, 2010). Additionally, descriptive norms are also easy to manipulate inadvertently by communicating a norm as part of the evidence that something is a problem. For example, telling people “Many past visitors have removed petrified wood from the Park, changing the natural state of the Petrified Forest” increased theft of petrified wood from the Petrified Forest (Cialdini, 2003).

Injunctive norms have to include an aspect of social approval or disapproval—in one case, this was simply accomplished by adding a happy or sad face, which eliminated the demotivating effect of a descriptive norm (Schultz et al., 2007). Injunctive norms can also be indicated by drawing a circle with a line through a representation of the bad behavior (Cialdini, 2003) or by telling people what most people approve or disapprove of (e.g., Prince, Carey, 2010). Researchers have even used signs that imply an injunctive norm. For example, communicating that behavior is being observed (e.g., two googly eyes watching you!) has successfully increased yielding to pedestrians and decreased speeding (Wrapson, Harré, & Murrell, 2006). Finding out what others think is informative when people lack knowledge or aren’t sure how to behave. Furthermore, it is validating when people find out that others agree with them (Fazio, 1979). When people receive validation from learning that other people agree with them, they also resist attempts to change their minds (Petrocelli et al., 2007). Research that has varied whether the people that agree are members of the same group (e.g., students) or a different, less-liked group (e.g., teenagers) found that people are not influenced by what members of groups they don’t respect think (Frelin & Dacin 2010). Thus, any messaging about what other people think should make sure those other people are similar to the target population (see Section 7.2 below).
6.1. Distracted driving is currently normal, but it can be made unacceptable

With respect to distracted driving, descriptive norms (i.e., perceived prevalence) about distracted driving is related to self-reported distracted driving (e.g., Shoots-Reinhard, Svensson, et al., in preparation) and intentions to text and drive (Shevlin et al., 2019). **Moral norms** (i.e., what people find personally acceptable) are associated with less self-reported texting behavior, greater perceived risks for texting and driving, and lower intentions to text and drive (Kim et al., 2018).

Some researchers have theorized (Warburton & Terry, 2000) that public behavior is predicted by descriptive norms and private behavior is predicted by moral norms, which would suggest descriptive norms would be a better target for reducing distracted driving. Others (Smith, McSweeney, et al., 2007) have suggested that descriptive norms may be more predictive of behaviors that are anti-social, like driving unsafely, and that moral norms may be more predictive of pro-social behavior; like donation behavior.

Although distracted driving is a public, anti-social behavior, descriptive norm messages may be a less effective strategy because of the difficulty of telling people that most people don’t use their phones when they can observe other people driving distracted. People already tend to think other people drive distracted more than they do (e.g., Shoots-Reinhard et al., in preparation). Because people tend to process in ways to preserve their existing beliefs (Kunda, 1990), they may be resistant to being told that their impressions are wrong and distracted driving is lower than they believe. Media coverage of crashes or of how many people are driving distracted (Figure 6.1) may also contribute to the perceived frequency of crashes or distracted driving (e.g., Lichtenstein, Slovic, et al., 1978). Although most people do not use their phones every time they drive, enough people admit to using their phones while driving that communicating descriptive norms may encourage greater use of cell phones.

**Figure 6.1.** Messaging that features a descriptive norm of distracted driving (left) and an injunctive norm against distracted driving (right).

This video emphasizes the numbers of drivers who are distracted, which could give the impression that distracted driving is common and normal.

This advertisement designed by Alyssa Loffredo, won a Project Yellow Light contest sidesteps the issue of how many people drive distracted and instead says that it’s unacceptable.

In addition, when the source of an injunctive norm is perceived as violating that norm, it increases intentions to also violate the norm. For example, when teens perceive any source as hypocritical (expecting teens to not speed despite speeding themselves), they have higher intentions to speed (e.g., Cestac et al., 2014). Thus, an injunctive norm to not drive distracted paired with a descriptive norm of driving distracted is likely to result in increased distracted driving. For young drivers, friends and peers are a more influential source than parents both in general (Ouellette et a., 1999) and parents specifically with respect to driving in particular (e.g., speeding, Cestac et al., 2014). In addition, because teens are more likely to drive
distracted, they may be more resistant to attempts to telling them that their peers don’t approve of driving distracted and don’t drive distracted themselves.

One way around this issue of conflicting descriptive and injunctive norms is to communicate disapproval without using a specific source (e.g., advertisements with pictures of distracted drivers with circles and lines drawn through them; e.g., Cialdini, 2003; Figure 1.1).

6.2. Ask people to link behaviors to their own values and principles

It is also possible to use people’s personal values and principles (i.e., moral norms). In one study (Parker et al., 1995), participants rated a number of unsafe traffic behaviors (i.e., sudden lane change, reckless weaving, and passing using the right lane in a three-lane roadway) and rated how wrong it would be for them and how badly they would feel to perform the unsafe behavior. Both feeling that it would be wrong and feeling badly predicted lower intentions to drive unsafely. Indeed, simply telling people that their attitudes are based on moral considerations has been shown to make those attitudes more predictive of behavioral intentions and more resistant to attempts to persuasive attempts (Luttrell et al., 2016).

To manipulate moral norms, researchers (Smith, Masser, et al., 2012) asked participants to generate issues important to them that could be addressed by volunteering and asking them to reflect on why volunteering was the right thing to do and how they would feel if they did or did not volunteer. This manipulation successfully activated a moral norm and increased intentions to volunteer, controlling for self-efficacy. A similar approach involves reminding people of their past behavior and giving someone an identity (e.g., helpful) which increases behavior consistent with that identity (e.g., volunteering, agreeing to a request; Burger & Caldwell, 2003; for review see Burger, 1999). In the case of distracted driving, past safety-oriented behavior and the identity as a good or safe driver could be used. Indeed, a similar idea was used in a PSA about smartphone use (Gauld, Lewis, et al., 2019). Specifically, the ad depicts a young driver that says they’re a good driver, resists the temptation to check a notification, and successfully stops before hitting a dog included “Be the good driver you say you are” as the tagline. Their focus groups of a total of 33 young drivers gave mostly positive feedback, which suggests that the ad may be effective (although we advocate a more rigorous method of testing and especially a larger sample size and the use of a control group; see Section 9).

Another possible approach would be to compare distracted to drunk driving. Most people have strong moral norms against drunk driving (e.g., Atchley, Hadlock, & Lane, 2012). Additionally, correlational research (e.g., Weller et al., 2013; Shoots-Reinhard, in preparation) suggests that drivers who do view drunk and distracted driving as equally bad report less distracted driving. In fact, research suggests that these drivers are correct—distracted drivers are just as bad as drunk drivers. This fact could be used in messages that draw parallels between drunk driving and distracted driving (Figure 6.2, Figure 4.1, bottom, Figure 5.3). These messages should increase injunctive and moral norms against distracted driving and reduce intentions to drive distracted.

Figure 6.2 Campaigns that compare distracted and drunk driving

The Don’t Drive Intexticated campaign by AAA also includes videos and images that accompany the slogan (e.g., Figure 5.2, right). It is unclear is whether the term “intexticated” alone is intuitively and quickly understood so that it can affect attitudes and behavior, but the campaign as a whole uses
many of the best practices described here.

Similarly, Harborview Injury Prevention & Research Center has a variety of posters as part of their anti-distraction campaign that compare cellphone use while driving with driving while intoxicated.
7. A credible source, ideally a member of your target audience, should deliver your message

When deciding whether to trust a source, people base their decision on a number of considerations, including the source’s background and experience, motivations for delivering the message, and what group or groups the source belongs to. In this section, we review what we have identified as the most important criteria for public communications.

7.1. People are more persuaded by trustworthy experts

When deciding whether to trust a source, people base their decision on whether the source has the credentials or experience to be correct (expertise) and whether the source is likely to be honest and has no ulterior motives (trustworthiness). A source with both expertise and trustworthiness has higher credibility than a source low in either expertise or trustworthiness. Higher credibility often, but not always, increases persuasion (Briñol & Petty, 2009; Pornpitakpan, 2004). Like many of the other characteristics we’ve reviewed, credibility has multiple effects on persuasion. The expertise or trustworthiness of the source can be a simple cue that causes people to agree nonnoughtfully (DeBono & Harnish, 1988; Petty, Cacioppo, & Goldman, 1981), be part of the arguments considered by participants (Kruglanski, Raviv, et al., 2005), cause ambiguous evidence to be interpreted positively (Chaiken & Maheswaran, 1994), and motivate increased thoughts and recall of the message (e.g., DeBono & Harnish, 1988; Bohner et al., 2002; Petty, Cacioppo, & Goldman, 1981; Priester & Petty, 1995, 2003). Because of these multiple roles of source credibility, it may not always appear that credible sources increase persuasion (see Pornpitakpan, 2004). For example, credibility could make people generate more thoughts about the message or rely more on their reactions to the message, which would result in attitudes that would be more resistant to change and resistant to persuasion (Briñol & Petty, 2009).

Particularly in this domain, messages should include strong arguments from credible sources. People are more motivated to think carefully about a message that opposes their views when the source is an expert vs. a non-expert (Clark et al., 2012; Heesacker et al., 1983). This increased scrutiny increases the impact of strong arguments. It also motivates scrutiny of the source such that people will try to find reasons to disregard the source and their negative feedback (e.g., by using negative stereotypes, Sinclair & Kunda, 1999, 2000). Furthermore, when credibility and arguments mismatch, they can backfire: strong arguments are expected from highly expert sources, so weak arguments from experts can result in especially negative attitudes (Bohner et al., 2004; Tormala, Briñol, & Petty, 2006).

Because anti-distracted driving messages will oppose the views of people who drive distracted, strong arguments produce stronger attitudes, and weak arguments from credible sources can backfire, we advocate for strong arguments (see Section 2) from trustworthy experts. Law enforcement officers, medical professionals (particularly those who work in emergency medicine), and professional drivers (Figure 7.1) are good choices for delivery of these messages because they have relevant experience, credentials, and are trusted by the public. People will tend to be more suspicious of messages that are trying to sell products, because they have ulterior motives for wanting people to feel that distracted driving is risky.
Figure 7.1 Less credible (top) and more credible (bottom) sources

This Proclip USA ad suggests that using their product is a way to be a focused, safe driver. Selling products makes sources seem less credible because they receive a benefit if they convince the audience.

NHTSA used a NASCAR pace-car driver for an anti-distraction campaign. People are likely to find a professional driver a credible, trustworthy source. However, using the word “shouldn’t” may have provoked reactance (Section 8.1)

7.2. People are more persuaded by similar others

People also evaluate a message’s source based on similarity. In one study, researchers found that argument quality did not matter if a criticism of a group and call for change came from a member of a different group, they were simply rejected nonthoughtfully (Esposo et al., 2013). The very same criticisms coming from members of the group were processed more carefully, and agreement and perceived need for reform were higher when the arguments were strong (e.g., included citations from academic publications and government statistics) vs. weak (e.g., included personal opinions, hearsay, and an example of one newspaper comment). Similarity also increases the impact of narratives (Section 5.2) and norms (Section 6).

Similar to the effects on tailored messaging (Section 3), emotion (Section 5) and credibility (Section 6.1), using shared groups or identities also has multiple roles (Fleming & Petty, 2000). For example, shared
group identity can serve as a cue (Mackie et al., 1990; Fleming & Petty, 2000), motivate greater processing (Mackie et al., 1990), and bias the thoughts that come to mind (Fleming & Petty, 2000). Furthermore, Fleming & Petty (2000) demonstrated that the effects of identity were increased the more important that identity was for people. For example, women whose femininity was important to them were more persuaded by messages about what women (vs. men) thought, such as “Women are concerned that snickerdoodles are unhealthy.” For women whose femininity was less important to them, the message being about men vs. women didn’t matter as much. Thus, an identity that is important to people will be the most effective for increasing persuasion.

With respect to distracted driving, this these findings suggests that the effects of carefully crafted messages might not matter as much if the audience perceives that they came from someone who does not share their identity. For example, messages criticizing young drivers for distracted driving will be more effective coming from a young driver than an older driver. Similarly, messages tailored to a geographic location (e.g., Ohio or a specific county or city) perhaps should be delivered by someone who is from that location or from a group important to them (e.g., Buckeyes).
8. Reduce reactance by using the earlier recommendations

People feel threatened when they receive information that threatens their freedom (i.e., tells them what to do) or that suggests that their behavior is dangerous and could cause them harm. Such messages can cause resistance and avoidance of similar messages, counterarguing, and reduced compliance. When people encounter a message they disagree with, they attempt to avoid it, come up with reasons that the arguments are incorrect, come up with additional reasons that they are correct, scrutinize and derogate the source of the message, experience anger, or remind themselves of other people that agree with their position (Jacks & Cameron, 2003).

Different strategies can be used to counter the different strategies used by people resisting persuasion (e.g., Fransen et al., 2014; Jacks & Cameron, 2003), many of which are already covered in this document. We will begin with reviewing research that demonstrates why message resistance is so important to overcome, refer to the strategies already covered that reduce reactance, and finally discuss two strategies that are specifically used to reduce reactance and resistance.

In particular, experiencing anger and counterarguing are the two main components of reactance (Brehm, 1966; Hall et al., 2017; Rains, 2013; Steindl et al., 2015; Witte, 1992). If people successfully counterargue and reject the message, they may shift their attitudes to be even more extreme (e.g., Lord, Ross, & Lepper, 1979) and become more certain that their initial position was correct (Tormala & Petty, 2002), less likely to follow recommendations (Hall et al., 2017), and more resistant to future attempts to change their mind (e.g., Tormala & Petty, 2002).

In two surveys (American and Ohio drivers), we found that men were more reactant (e.g., they believed that distracted driving’s risks were overblown and that anti-distracting messaging was manipulative) than women and that greater reactance predicted greater perceived benefits of phone use, lower risk perceptions, greater self-reported distracted driving, and less support for strategies to reduce distracted driving (e.g., apps, settings, laws, insurance discounts, laws, etc.). Thus, reactance may be a key determinant of distracted driving behavior that should be addressed in order to have the biggest chance of reducing distracted driving.

Strategies to reduce message resistance include advocating for effective and easy strategies (e.g., Lewis et al., 2013, Witte, 1992, Section 1), using strong arguments (e.g., Ziegler et al., 2013; Section 2), communicating about benefits of following recommendation vs. costs of not following recommendations (Cho & Sands, 2011, Section 3.2), using emotional appeals (Lewis et al., 2013, Section 5), telling stories (e.g., Escalas, 2004; Green & Brock, 2000, Section 5.2), and using expert and credible sources to reduce source derogation (Sinclair & Kunda, 1999, 2000, Section 7.1).

8.1. Remind viewers that the choice to drive safely is theirs

When people feel like messages are manipulative or attempting to restrict their freedom, they are less likely to be influenced by them (Hall et al., 2017). Thus, reactance can be reduced by avoiding language that makes people feel threatened or manipulated or by explicitly restoring people’s freedom. Forceful, controlling language (e.g., "you have to do it") is less convincing than freedom-evoking language (e.g., "consider it"; Quick & Considine, 2008). Other words to be avoided are “should,” “ought,” “need,” and “must” (Miller et al., 2007; Quick & Stephenson, 2008).

Explicitly saying “But you’re free to choose” after a behavioral request has also been shown across a variety of situations and requests to increase compliance with that request (Carpenter, 2013). This technique reminds the audience that performing the desired action is ultimately up to them. It appears to work by reducing the reactance people feel when asked to do something and works best when the choice to comply is made when the request is made Thus, this strategy could be extremely effective for behaviors related to safe driving that are done outside of the car (e.g., enabling do not disturb while driving), but will be less effective for behaviors that won’t take place during the communication period (e.g., don’t text and drive).
8.2. Include considerations of both sides of an argument and counterargue them

Including negative information about products (i.e., including both sides) makes people more persuaded (Banas & Rains, 2010; Eisend, 2006). This research suggests that including negative attributes increase the novelty and credibility of the advertisement, particularly when they are unimportant, placed at the end, and are positively correlated with a positive attribute. Two-sided messages can make people feel conflicted (which reduces persuasion), but refuting one side of the message (e.g., “This laptop has a short battery autonomy, but on the other hand the battery charges exceptionally fast”) restores the persuasive power of the argument on attitudes and intentions (Cornelis et al., 2019). The effect that sidedness has is partially to do with credibility and the feeling of having considered more information. To illustrate, people can be given the exact same information framed as either one- or two-sided messages. When people are explicitly told that a message considers the pros and cons (e.g., of products) versus simply being told about the products “attributes,” they are less likely to believe that cons are missing from the message, are more certain of their evaluations, and more likely to want to purchase them (Rucker et al., 2008). These results are limited to people thinking a lot, like those who are counterarguing, although this research did not use a threatening message or one that disagreed with people’s existing attitudes.

Anti-distraction messaging could thus start with the benefits of the strategy, end with the drawbacks (which should be minor and unimportant if Section 1 is followed), and end with a reminder that it is ultimately up to the person to choose. We would expect that such a message would be associated with lower reactance, more positive attitudes towards the source and strategy, and more intentions to follow the advice. For example, a law enforcement officer could say “I’m not here to tell you not to use your phones, I’m here to tell you how you can use them more safely. If you turn off notifications, you will be more focused, less distracted, less likely to do something that causes me to pull you over, and less likely to crash, although you may have a lot of notifications when you arrive at your destination. Ultimately, though, you have to decide how to drive.”
9. Use an evidence-based approach to message development and evaluation

Before developing messages, it would be wise to conduct survey research to determine the key predictors of behavior and then focus message development on them. A recent meta-analysis (e.g., Sheeran et al., 2016) suggests that studies that attempt to change self-efficacy, norms, and attitudes (or just two of the three) produce smaller effects than those that attempt to change only one of them. The authors suggest that either messages attempting to change multiple variables dilute the impact of the message or neglect the key predictors of the target behavior (although see e.g., Witte & Allen, 2000, for research on fear that shows that efficacy improves the effects of fear appeals).

Based on most theories of behavior change (see Sheeran et al., 2016 for a review), we suggest that communication efforts should focus on:

- perceived risk and severity of the negative outcome (e.g., car crash),
- perceived feasibility/effectiveness of the advocated strategy (e.g., turn off notifications), and
- perceived prevalence and acceptability of behavior (e.g., distracted driving).

Arguments then could be developed that target each of the key beliefs. A small group of 20-50 people from the target population could be asked to read them carefully and provide their thoughts about each argument. The final message would include arguments that received the most position-consistent thoughts (e.g., an anti-distracted driving message should elicit negative thoughts about distracted driving; a pro-hands-free message should elicit positive thoughts about going handsfree, etc.).

After developing messages, it may be tempting to ask a focus group for perceived persuasiveness (e.g., “How convincing is this message?”; “How much did you believe this message?”) or qualitative comments to change messages. However, perceived effectiveness does not reliably predict actual effectiveness (O’Keefe, 2018) and respondents can have inaccurate beliefs about what makes messages effective (Booth-Butterfield et al., 2007). Message recipients do not always intuitively identify messages that are most effective (Greene, Peters, Mertz, & Hibbard, 2008); the same thing is true for experts and their intuitions about how best to communicate with people who are different from them (Peters, Dieckmann, et al., 2007). Thus, asking naïve participants or focus groups to rate the effectiveness of a message may result in messages ineffective at producing actual behavior change. For example, arousing messages frequently evoke negative emotions that may make people dislike them, but research suggests that they are nonetheless effective at reducing smoking (e.g., Noar et al., 2016, 2017). Similarly, having experts choose messages without testing them in the population of interest may produce suboptimal messages.

Instead of asking about persuasiveness, communicators should identify their communication goals and evaluate their messages in terms of those outcomes. The best way to determine if a message will produce desired outcomes is to conduct a limited experiment on those outcomes (e.g., Whittingham et al., 2008) using the following steps:

1. Determine desired outcomes (e.g., risk perceptions and attitudes, intentions to follow recommendation, self-efficacy to follow recommendations, knowledge, etc.)
   a. If unknown, consider measuring likely predictors and seeing which predict the target behavior
   b. These can be based on prior research (either which are the best predictors or which are possible to change)

2. Select a sample from the target population with 50-100 participants per message; include a control message too.

3. Administer outcome measures to
   a. A group not exposed to message
   b. A group who has been exposed to each message
c. thus, if testing 2 messages, 150-300 people should be recruited including a group who reads the control message

4. Conduct a t-test to determine if message exposure produces more desirable outcomes than the no-message control group.
References


Green, M. C. (2004). Transportation into narrative worlds: The role of prior knowledge and perceived realism. *Discourse Processes, 38*, 247–266.


